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SPECIAL ISSUE:  
WHY COGNITIVE  
ARCHAEOLOGY  
NEEDS PHILOSOPHY?

## *Neanderthals in Plato's Cave – A Tribute to Lucian Blaga*

*Following Michael S. Jones' call for articles showing the contemporary value of the great 20<sup>th</sup> century Romanian philosopher Lucian Blaga in various spheres of expertise,\* I have immediately thought of George F. Steiner's recently published book, Neanderthals in Plato's Cave.° The evolutionary model forwarded by Steiner draws heavily on philosophical insights provided by Blaga and, although the volume was written for a scientifically-minded public, the author has adopted, updated and expanded some of Blaga's anthropological perspectives. In our e-mail correspondence, Steiner has acknowledged Blaga's influence and has enthusiastically endorsed my attempt to review the similarities between some of the postulates of contemporary research in the various disciplines that inform cognitive archaeology – Steiner's field of expertise – and the conceptual evolutionary/cultural hypothesis outlined in Blaga's philosophical system.*

### **1. Mnemonic Convergence** (*Geneza metaforei și sensul culturii*)

Lucian Blaga's inquiry into the origin of *metaphor*<sup>[1]</sup> may be correlated without reserves with the first part of Steiner's monograph, where the etiology of cognitive modernity is discussed. Metaphor – as Blaga understands it in connection with the 'primitive' mind – belongs to 'ritual behavior,' i.e., a *causal* (or, as Blaga names it, a *Paradisiac*<sup>[2]</sup>) calibration of reality. Abstract exogrammatic representation (Bednarik 2014), meaningful mimetic progressions (Donald 1991), repetitive musical and rhythmic sequences (Morley 2003) are the undifferentiated products of the human mind that had also applied *metaphor* in its perception, description and transmission of 'reality-as-such.' But – although proto-linguistic abilities were also theorized to have been extant at this early stage (Bickerton, 2009) – 'metaphor-as-we-know-it' cannot be imagined without advanced linguistic abilities. Therefore, Steiner argues for a *mnemonically-defined metaphor*, at least for this formative – Middle Paleolithic – developmental stage.

Although in *Geneza metaforei și sensul culturii* (*The Birth of Metaphor and the Meaning of Culture*) Blaga did not dwell on the etiology of such cognitive developments, he would broach the subject in a systematic fashion in *Aspecte antropologice* (*Anthropological Aspects*),<sup>[3]</sup> where his perception of 'instinct' as flickering moments of consciousness – but not a continuum of conscious experience – is reminiscent of what Donald (ibid.) designates as 'episodic memory.' In the same spirit, Blaga understood human-specific 'intelligence' as emerging in parallel with what Donald defines as 'mimetic culture,' of which *metaphor* was likely an integral part, with the specifications mentioned above. Moreover, seen from this perspective, metaphor assumes a crucial function in 'stabilizing' a specific and communally-devised construct of reality. Flickering moments of consciousness become a continuous, species-specific 'state of consciousness,' the first manifestations of which Steiner depicts in abstract rock art, which he interprets as a 'mnemonic technique' devised to 'fix' in stone causal calibrations of reality that can be transmitted from one mind to another and from one generation to the next.

Indeed, as Coman et al. (2016) have noticed, the development of shared memories, beliefs, and norms – mnemonic convergence – is a fundamental characteristic of human culture. These emergent outcomes occur owing to a dynamic system of *information sharing* and *memory updating*, which fundamentally depend on *communication*. The propagation of 'retrieval-induced forgetting' (ibid.) is, on the other hand, of equal importance. In this vein, cultural propagation becomes influenced by 'stylistically-tainted

\* Jones, Michael S. 2002. Giving Lucian Blaga a Legacy in America. *East-West Cultural Passage: Journal of the C. Peter Magrath Research Center for Cross-Cultural Studies* 1: 7-16.

° Steiner, George F. 2017. *Neanderthals in Plato's Cave: A Relativistic Approach to Cultural Evolution*. Nova Science Publishers, New York. ISBN 978 – 1 – 53613 – 932 – 7

attitudes.’ These observations confirm Blaga’s insights<sup>[5]</sup> and are also extensively discussed in Steiner’s volume, in the context of the formation of collective memories. However, in order to fully grasp the origins and meaning of this – arguably Middle Paleolithic – ‘mnemonic convergence,’ I must outline Blaga’s thoughts on two antithetical, but nonetheless complementary aspects of human-specific cognition.

## 2. Punctuated Cognition (*Cunoaşterea luciferică*)

Blaga differentiates between a *Paradisiac* cognitive mode that goes hand in hand with *Luciferic* abilities, as detailed in his volume titled *Cunoaşterea luciferică (Luciferic Knowledge)*.<sup>[2]</sup> Liane Gabora’s (2003) – often-cited by Steiner – *contextual focus hypothesis* and its empirical documentation in Louis Liebenberg’s (2013) comparison of the *systematic* ‘science’ of tracking with the complementary *trance-induced* ‘art’ of tracking fit very well Blaga’s description of the *Paradisiac* and, respectively, *Luciferic* approaches to reality. The faculty to shift – at will – between the two complementary cognitive modes is addressed in-depth by Blaga, who defines a ‘vertical’ cognition that recurs to an associative type of information processing and advances through cognitive ‘mutations,’ and an ‘horizontal,’ analytic, step-by-step kind of knowledge.\* Or, as Gabora formulates it (ibid.: 433), “the [mental] capacity to shift between *associative* – conducive to forging new and random concept combinations – and *analytic* thought, which is conducive to manifesting them in an *ordered, reciprocally understandable* fashion.” (emphasis mine). At the divergent end of the continuum there is a *defocused, intuitive* and *associative* mode that finds remote or subtle connections between ‘concepts’ that are *correlated but not necessarily causally related*. At the other – convergent – end of the operational range of the contextual focus is a *rule-based, analytic* mode of thought that analyzes relationships of *cause and effect*. Insights and new ideas germinate in a defocused state in which one is receptive to the possible relevance of many dimensions of a situation. They are refined in a focused state, in which irrelevant dimensions are filtered out and only the relevant ones are condensed. In the case of the human brain, with its large neural storage capacity, the indiscriminate associative combination of concepts may lead to a *combinatorial explosion of possibilities*; in other words, to a state of *undecided superposition*. However, such a complex state is likely to be very difficult to maintain and a potential downfall of processing in an associative mode may occur. When – in the divergent mental state – concepts appear in the context of each other, their meanings change in ways that are *non-compositional*, i.e., they behave in ways that *violate the rules of classical logic* (Gabora and Kitto 2013). Despite its potential impact, this challenge is not as insurmountable as it might at first seem, as there is one mathematical formalism which was invented precisely to describe such contextuality: quantum theory. In a recently published paper co-authored by Liane Gabora (Smith et al. 2018), cultural evolution itself is understood as being fueled by the generation of and reflection on *creative* ideas, which might exist not in the form of a collection of explicitly actualized variants as is required for biological evolution, but in a ‘state of potentiality.’ If an idea in a state of potentiality is considered with respect to one context it evolves one way, whereas if considered with respect to another context it evolves another way; there are no variants that get actualized and selected amongst. The mathematical description of evolution through variation and selection is very different from that of *cultural evolution through actualization of potentiality*, which can be mathematically described drawing on the formalisms of superposition and interference.

Although the stress in *Cunoaşterea luciferică* is placed on cognition, Blaga is more interested in the implications of *Luciferic* (divergent, *sensu* Gabora) attitudes, namely, their impact on the human condition. In his (1940) *Diferenţialele divine (Sacred Differentials)*,<sup>[7]</sup> Blaga would further explore the role of

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\* At this point I must remark – with the risk of being a spoiler – that the cognitive component would diverge and assume vertical/horizontal orientations only in a strictly cultural context. In the biological realm, our peculiar mode of evolution had facilitated the *synchronous* development and application of these *complementary* abilities and the faculty to shift between them, at will.

this *punctuated* and logic-defying cognitive faculty in widening the human-specific existential ‘horizon’ and in ‘filling it out’ with an ‘actualization of potentiality.’

### 3. Punctuated Evolution (*Aspecte antropologice*)

Meanwhile, let us review Blaga’s forays into hominin evolution,<sup>[3]</sup> which go on focusing on the implications of an ever-widening cognitive horizon and on its ontological impact on our ancestors.

Interestingly, Blaga accepts the still hotly debated issue of Neanderthals and other archaic hominins being already cognitively modern and he attributes to them – without reserve – the authorship of ‘paleoart’ (*sensu* Bednarik 2007, 2014) and other ritual-related behavior, as described in the first section of this paper. By the same token, he considers the Acheulian industry of *Homo erectus* as the first manifestation of human-specific culture (he goes as far as calling it a ‘civilization’).

I would like to specify that, despite Blaga’s aversion to a biological origin of culture, his understanding of the development of human-specific *cognitive* abilities points to their etiology being deeply rooted in the very peculiarities of our biological evolution. One such biological peculiarity is the problem of ‘primitivisms.’ Blaga does not accept Bolk’s explanation of juvenile features that linger into adulthood (however, he acknowledges Bolk’s list of the said features, which is also reproduced in Gould’s 1982 book *Ontogeny and phylogeny*) but, on the other hand, he does not mention *neoteny* by name, not even in its recapitulative aspect introduced by Haeckel (1883). However, he exalts what would be later known as *psychological neoteny* (Charlton 2006), the characteristics of which fit perfectly with his understanding of *Luciferic* cognition.<sup>[2]</sup> If Blaga would have had access to our much-enhanced knowledge of neoteny, I have no doubt that he would have overcome his reservations and that he would have relied on the currently emerging understanding of the phenomenon in his explanation of the *vertical evolutionary process*, which is the main hypothetical construct of *Aspecte antropologice* (*Anthropological Aspects*, originally a lithographed text, published *post-mortem*, in 1976).<sup>[3]</sup> However, Blaga demonstrates flexibility and declares that he would acknowledge Bolk’s contribution as an explanation of human primitivisms, provided that our direct descent from Neanderthals were proven. In *Neanderthals in Plato’s Cave*, following Bednarik (2008), Steiner also stresses on the possibility of such a straight descent and he suggests that the Eurasian Upper Paleolithic transition should not be perceived as the replacement of one species with another but as a culturally-determined behavioral ‘sudden jump’ followed by a gradual morphological transition within the same – and cognitively already modern – species.

However, Bednarik’s hypothesis is further refined by Steiner, who distinguishes between *neoteny* as a biological process and the physiological signatures of the *domestication syndrome*, which are the results of post-biological cultural specialization (e.g. Benítez-Burraco et al. 2016).

Although the focus of *Aspecte antropologice* is on our biological evolution, Blaga couples the physiological with the psychological: on the vertical coordinate of his graphically explained *nouă lămurire* (which is reproduced, but substantially expanded in Steiner’s volume) the accent, again, is on the cognitive implications, namely, the opening up of the existential horizon, effectuated through a series of parallel physiological and psychological ‘mutations.’

For a better understanding, let me summarize Blaga’s *nouă lămurire* (graphically illustrated in *Aspecte antropologice*, p.120), in which he defines – the already mentioned – *vertical* and *horizontal* evolutionary strategies:

(a) The horizontal evolutionary process, i.e., *the strategy of specialization to the environment*, occurs mostly through natural and sexual selection: evolution may be perceived as a success, and a condition that facilitates survival in a given environment is reached. In other words, from a state of ‘sufficient

harmony' with the environment, evolution leads to a state of 'perfect harmony.' The only problem is that organisms following this strategy are at peril when the environment they are so highly optimized to changes. The higher the degree of specialization, the lower the ability to cope with changes. In cases of extreme specialization, the slightest fluctuation in the environment can wipe out a species. Another backlash of such an evolutionary mode is that once a state of 'perfect harmony' is reached and, provided that the environment remains stable, further evolution becomes characterized by the development of *hyper-trophies*.

(b) The vertical mode of evolution is the answer to the dangers inherent in the strategy of specialization: at the price of conserving some primitive features, a degree of autonomy is also preserved, i.e., a higher flexibility in the face of environmental changes – instead of the smooth specialization through selection, a rougher evolutionary strategy is adopted, which is transformation through mutations or punctuations. At first glimpse, this strategy does not seem to be so successful: the organism is not so finely tuned to its environment. But, when the environment undergoes changes, the flexibility granted by the vertical evolutionary mode proves its advantage: the higher the degree of autonomy, the lower the danger of being affected by environmental instability. In cases of very pronounced autonomy, the organism is capable to survive in almost any type of natural environment – changes are taken as opportunities, the opening of 'new horizons.' In the case of vertical evolution, the tendency is to preserve an already acquired state of 'sufficient harmony' without falling in the trap of 'perfect harmony' and the dangers entailed in it.

In his model, Blaga anticipates the *punctuated equilibria* hypothesis of the late 1970s (Gould and Eldredge 1977). The cumulative vertical 'sudden jumps' theorized by Blaga would culminate in an '*ontological mutation*'<sup>[4]</sup> that, in its turn, would catapult our ancestors into a uniquely human evolutionary field, the theater of a *primarily cultural*, and only *secondarily biological* evolution.

#### 4. The Cultural Being (*Ființa istorică*)

Where does 'vertical evolution' lead to? Provided that a degree of metaphoric teleology is tolerated, Blaga suggests that evolution following vertical tendencies<sup>[3]</sup> has already reached its maximum and came to a halt once the human condition assumed an historical dimension, within which psychological neoteny becomes the dominant component, as described in *Ființa istorică* (*The Historical Being*, also only published after Blaga's death).<sup>[4]</sup> Cognition becomes exposed to the 'horizon of mystery'<sup>[5]</sup> and the purpose of the human condition becomes the revelation of mystery, be it following *Paradisiac* cognitive strategies, or recurring to *Luciferic* solutions.<sup>[2]</sup> On this point, the author of *Neanderthals in Plato's Cave* took the liberty to correct Blaga's linear approach, with the specification that, while in the biological field the said cognitive abilities could be employed simultaneously, the peculiarities of cultural evolution have introduced a cognitive rift, namely, *Paradisiac* strategies became dominant on the expense of *Luciferic* abilities which, gradually, became eroded, in direct proportion with the degree of cultural complexity. However, complexity is almost unanimously thought of as being reflected exclusively in material/technological/social elaboration. Interestingly, the anthropological record documents primitive societies with very elaborate but, at the same time, with apparently simple social organization and with technology consciously maintained at the level of *sufficiency* (Dale et al. 2004 and references therein). By the same token, on the cognitive level, these 'immediate-return' hunters-gatherers (ibid., Woodburn 1982) practice a rather *Luciferic* approach (Low 2004). Moreover, the ability to shift at will between analytical and associative mental states – although already slightly eroded – is still available to a large segment of the population (Lewis-Williams 1988, Dowson 1994). Furthermore, the apparently simple subsistence strategies of these foragers are understood by Steiner as a *reduction* from a more complex, 'delayed-return'



strategy (as proposed by Bousman 2005). Similarly, their apparently simple social organization – *egalitarianism* – does not represent an ancestral state but is rather a cultural achievement characterized by a hitherto unrecognized degree of complexity (Woodburn 1982). Therefore, tendencies that define the biological field of evolution – toward specialization or, conversely, the maintenance of *sufficiency* – are apparently equally active in the cultural field, in which two antithetical evolutionary paths become subject to the very same tendencies that Blaga considers to have stopped exerting their influence ever since we became ‘historical beings.’<sup>[3]</sup>

Beside Steiner, the non-linear character of cultural evolution has also been addressed by Sanger (2017), who advocates for the application of anarchic theory in archaeology and anthropology and invites specialists in these fields to discuss the underlying philosophies that inform a view of the world in which equality of power is seen as critical and alienation as antithetical to human happiness. Sanger argues in favor of studying the techniques conducive to power equality with the same enthusiasm as we study the ‘evolution’ of inequality. Woodburn’s (1982) ‘leveling mechanisms’ are identified by Steiner as examples of such ‘techniques,’ and he ascribes them to what he considers – in order to be consistent with Blaga’s understanding of biological<sup>[3]</sup> and cognitive<sup>[2]</sup> evolutionary ‘tendencies’ – a *vertical* cultural orientation, which becomes autonomous from *horizontal* cultural strategies. Such a vertically-acquired cognitive autonomy must not be understood as the ‘victory’ of *Luciferic* thought, but as the *retention* of the ability to shift *at will* between the analytical and the associative ends of human-specific cognition, *sensu* Gabora (2003), at the cost of retaining certain cultural ‘primitivisms.’ Unfortunately, the ‘evolution of inequality’ – to stay only with the social component of culture – together with the unproportionate stress in anthropological studies on *cumulative* material sophistication, deform markedly our understanding of culture.

There is a wider conceptual and empirical problem hiding here. The strong focus on technology in cultural evolution research clearly stems from the fact that technological skills can be tracked archaeologically. But what if groups with low technological complexity invest their inventiveness in developing complex non-technological skills? Taylor (2010) makes the case that cultures can be expected to pursue either of *two trajectories* with respect to investment in material technology. The first is the one that we tend to expect, where the functioning of the body is augmented with increasingly complex material technology. Reliance on material technology, however, also has the effect of entangling individuals in various requirements (cf. Woodburn 1982), such as obtaining and transporting raw material, maintaining and repairing artifacts, and dealing with the risk of technology failing (Hodder 2012). This indicates that, under certain circumstances, it might be more beneficial to go in a direction that *minimizes the dependence* on material technology, replacing it with *non-material skills* instead.

The same biases seem to plague our understanding of human cognition. An enthusiastic researcher of Blaga’s philosophy, Geo Săvulescu (2013) observes that those who have studied the life of primitive societies consider that these people not only are primitive, but also have primitive, that is, logically unevolved thinking. At the surface, this seems to be true. The perceptions of the ‘savage mind’ in anthropological and ethnographical works of the 19<sup>th</sup> century seem to document such a logically inconsistent thinking. The cognitive capacities of natural people were described as ‘childish,’ with *cause and effect randomly sequenced* in a *world of probabilities* that was *also able to accommodate contradictions* that were not recognized and ‘corrected,’ and in which the spiritual side was not a stranger to reality (Low 2004). This observation summarizes very well Blaga’s own definition of *Luciferic* cognition.<sup>[2]</sup> Blaga associates this cognitive attitude with *magical thinking*<sup>[1]</sup> and, as Săvulescu goes on explaining (ibid.: 53), “... magic escapes any logic. For [the primitive] myths, stories, and the transcendent are sometimes more important than food or, in other words, spiritual nourishment is in first place. They seem to us to be primitive and with pre-logical thinking because for them the mystery of the surrounding world is

more important than well-conducted, logical thinking. We consider them primitive in thinking due to the conceit of those mastered by the demon of logic.”

Steiner correlates the abovementioned markedly ‘childish’ aspect of the cognitive attitudes of natural people with *psychological neoteny* – as theorized by Charlton (2006), but also predicted by Blaga’s reference to *copilul filosof*, i.e., the ‘philosopher child’ in his native Romanian.<sup>[3]</sup> I will return to psychological neoteny and to the cognitive consequences of its gradual erosion in ‘horizontal’ cultural settings.

Instead of concluding that Blaga has only covered half of the spectrum of human evolution, Steiner has introduced a pair of complementary – *cultural* – coordinates, which not only accommodate, but also enlarge Blaga’s perspective, as detailed in his work touching on cultural and cognitive evolution.<sup>[2,4,5]</sup>

According to Steiner, when the rate of cultural evolution became accelerated in rapport to that of biological evolution, our ancestors entered – in a precipitate or, conversely, in a gradual fashion – a new theater of evolution, the ‘*complementary Blaga coordinates*.’ Evolution, contrary to Blaga’s abovementioned position, goes on in a form that assumes a *teleology* of its own on the horizontal, in stark contrast with the *dysteleology* observed in both the horizontal and vertical aspects of biological evolution.

In the complementary (cultural, but also cognitive) coordinates we can follow ‘specialization’ on the horizontal axis and the retention of (far more than only technological) ‘sufficiency’ on the vertical coordinate. While, according to Blaga, the retention of ‘primitivisms’ characterizes the biological vertical, Steiner goes a step further and observes that on the cultural vertical the retention of cultural ‘primitivisms’ seems to be the rule. With the coordinates reflecting both cultural *and* cognitive tendencies, Steiner suggests that *Paradisiac* attitudes may be defined as ‘horizontal’ (or, ‘historical,’ *sensu* Blaga), while *Luciferic* approaches may be confidently identified as ‘vertical’ cognitive orientations (which went unrecognized by Blaga, despite his system predicting and, practically, begging for such a theoretical extension).

The workings of the already introduced *punctuated equilibria theory* (Gould and Eldredge 1977) may also be discerned within the cultural field, the coordinates of which diverge in a hypothetical point that represents an *idealized* stage that was – *theoretically* – supposed to have been reached on the vertical coordinate of the biological field. A perpendicular line that illustrates tendencies toward *cultural specialization* splits off to the right, and a vertical coordinate – which is a continuation of the biological vertical – follows cultural tendencies toward *flexibility* and *generalization*.\*

#### (a) *Horizontal cultural evolution*

- Characterized by specialization to culturally-defined and selected-for objectives and a loss of cultural flexibility. Biological evolution starts lagging behind the progressively faster rates assumed by cultural change and adapting by ‘shortcuts’ to the accelerated cultural accumulation, which results in a pseudo-neotenus phenomenon (i.e., gracilization, domestication syndrome).
- Cultural manifestations last less and less in time and there is a marked compensatory tendency to elaborate and accumulate technology that does not serve immediate needs. Therefore, the gap between biology and culture is widening, progressively.
- Cultural change becomes accelerated and, therefore, a false sense of ‘flexibility’ is perceived and attributed to the horizontal cultural process.

#### (b) *Vertical cultural evolution*

- Characterized by technological reductions and the presence of a biological-cultural continuum, including ongoing genuine neotenus processes. Thus, both biological and cultural flexibility are successfully retained.

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\* In a recently (2018a) published study, Steiner describes and illustrates in detail such a combined picture of cultural evolution. For a better understanding of this review, it is recommended to consult the online Supplementary Graphic Material of the paper: <<https://ifirar.wordpress.com/2018/09/23/holocene-crossroads-managing-the-risks-of-cultural-evolution-george-f-steiner/>>

- Cultural manifestations become stabilized in time and there is a tendency to reduce unnecessary elaboration, in order to let biology catch up with culture.
- Therefore, a false sense of ‘rigidity’ is perceived and attributed to vertical cultural evolution.

### 5. Managing the Risks of Cultural Evolution

(*Orizont și stil*)

Evolution within the complementary Blaga coordinates is not restricted to cultural and cognitive developments. Physiological and genetic changes do also occur, as predicted in *gene-culture coevolution theory* (Henrich and McElreath 2003). Paired with *niche construction theory* (Odling-Smee 2003), which complements it, the *cultural being* (and not only the ‘horizontal’ *historical being*) is set in the midst of a species-specific existential ‘horizon.’ However, very much like Blaga, the said theories cover only half of the diverse spectrum of anatomical/behavioral/cognitive developments within the cultural field.

Blaga’s version of the ‘evolution of cultural evolution’ relies very much on an intricate ‘stylistic dialectics’<sup>[5]</sup> which, to an extent, may be likened to the formative role of ‘sticky’ cultural transmission biases, as defined and enumerated in gene-culture coevolution theory (Boyd and Richerson 1985, Henrich and McElreath 2003) and discussed in detail in Steiner’s monograph.

The Romanian philosopher’s dynamic model of stylistic transitions may also be correlated with the innovative application of Gould and Eldredge’s (1977) *punctuated equilibria* in social theory, where it becomes a conceptual framework for understanding the *process of change* in *complex* social systems, i.e., in horizontally-progressing cultural configurations. The theory (Baumgartner and Jones 1993) posits that most social systems exist in an extended period of *stasis*, which may be *punctuated by sudden shifts* leading to *radical* (qualitative) change. For example, Connie Gersick’s (1991) research on the evolution of organizational systems revealed patterns of change mirroring those in biological species. Gersick examined models of change in the history of science, physical science, and biological evolution\* and found evidence for punctuated equilibria (as opposed to steady, gradual change) across those disparate systems. Her model states that changes are incrementally due to several *restraints*, namely, the ‘stickiness’ of institutional cultures, vested interests, and the bounded rationality of individual decision-makers. Applications of the theory have yielded remarkable results in the study of *technological change* (Levinthal 1998), which is also followed meticulously in Steiner’s inquiry.

The “slow pace of rapid technological change,” as Levinthal (ibid.) suggestively titled his study, emphasizes the fact that in a cumulative cultural context, the term ‘punctuation’ may be misleading. An incremental, but *increasingly swift* cultural change – perceived as linear, but accelerated *progress* – becomes the main signature of horizontal cultural evolution, which is the very opposite of the *stable* pace at which ‘sudden jumps’ occur on the vertical. The stable pace of vertically oriented cultures is set by the *conscious* application of the independently and culturally devised – and thus, not inherited from a primordial ‘golden age’ – *leveling mechanisms* recognized and documented by Woodburn (1982). With technological elaboration being kept at a level of *sufficiency*, sudden jumps occur mostly in non-technological cultural domains. With their focus on technological innovation, gene-culture coevolution theoreticians have recognized and documented only the *ratcheting techniques* (Tomasello 1999) that *accelerate* the rate at which cumulative cultural evolution ‘*progresses*,’ and have utterly ignored the equally intricate mechanisms that *stabilize* the pace at which vertical cultures *evolve*.

Steiner’s study of social processes involved in the ratcheting of technological innovation is also informed by *domestication theory*, namely: an approach in science, technology and media studies that describes the processes by which innovations are ‘tamed’ or appropriated by their users. First, innovations are integrated into everyday life and adapted to daily practices. Second, the users and their environment

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\* Unfortunately, models of change in the history of philosophy/metaphysical thought were not addressed in Gersick’s (ibid.) study. I am confident that if pursued, the results would have closely resembled those observed with models of change in the history of physical sciences/cosmology.

change and adapt accordingly. Third, these adaptations feedback into innovation processes in industry, shaping the next generation of technologies and services (Williams et al. 2005).

Lucian Blaga's forays into the depths of the human *psyché* reveal an intimate relationship between the unconscious 'abyssal' and the conscious, culturally-acquired and conditioned 'stylistic' *categories*. The approach to 'mystery' and the *techniques* employed in its revelation vary: stylistic categories prevail *permanently* over the abyssal ones on the horizontal and, opposite, the abyssal categories may *temporarily* become dominant in the case of vertical (*Luciferic*) cognitive approaches adopted in the wish to lift the cognitive veil that hides 'mystery.' However, the exclusive reliance on abyssal categories could easily result in psychotic states – Steiner brings up the example of the schizophrenic shaman – and, therefore, vertical cultural orientations strive for a *balanced* cognitive approach to 'reality-as-such,' which may also accommodate logical contradictions. Blaga uses the term 'dogma' to describe a conceptual metaphoric representation that accommodates both analytical and associative perspectives, without one excluding the other.

Paradoxically, horizontal cultural evolution – paired with predominantly *Paradisiac* attitudes – restricts the horizon revealed to human cognition, while vertical cultural evolution – paired with the retention of the ability to shift *at will* between *Luciferic* and *Paradisiac* cognitive abilities – enlarge the 'horizon of mystery.' Having this in mind, Steiner has drawn a hypothetical line – a cognitive 'ceiling' – between the coordinates of the cultural theater of evolution, a '*plafon cognitiv*' based on the model of the '*plafon biologic*' forwarded by Blaga for the biological field.<sup>[3]</sup>

In Steiner's complementary field, vertical re-orientations occur from already markedly cultural positions – after all, we are all 'cultural beings,' we have all effectuated the 'ontological mutation' – which implies an *a priori* lower 'cognitive ceiling.' However, such re-orientations are still possible in cases in which technological elaboration and social complexity are kept at a level of *sufficiency*. Vertical 'escapes' become possible only when certain leveling mechanisms manage the risks of cultural and cognitive specialization by keeping horizontal tendencies in check. A vertical *divergence* – or, in Steiner's words, a *cultural speciation* – enables the retention of the ability to shift between *Luciferic* and *Paradisiac* types of cognition.

Conversely, cultures committed to horizontal strategies experience an incremental closure of the existential horizon, which is the consequence of a swift, but gradual lowering of the cognitive ceiling. The ever-increasing rate of cultural change, however impressive and *efficient* on the material level, takes place at the expense of cognitive abilities. Vertical 'escapes' become restricted and cognition becomes conditioned by the very causal order that governs the cultural niche. Implicitly, the existential horizon becomes limited to the artificiality of the cultural niche and behavior becomes plagued by conformist biases. By the same token, *Luciferic* abilities become incrementally eroded and restricted to 'art' and 'creativity,' which, despite being fed by non-conformist biases (Henrich and McElreath 2003) are still subservient to stylistic categories and, as such, mere cultural substitutes of biologically-acquired cognitive potentials. I will return to the cultural conditioning of knowledge in the next section, where I will discuss and, to an extent, demystify Blaga's ideas on cognitive 'censorship.'

Let us however first address the etiology of the physiological and behavioral changes that Steiner follows within the cultural coordinates. Populations committed to a non-cumulative (i.e., vertical) type of cultural evolution – the 'immediate-return' hunters-gatherers mentioned in the previous section\* – are often described as 'pedomorphic,' due to their markedly neotenuous morphological features and cognitive attitudes. Steiner contrasts them to populations that follow a cumulative (i.e., horizontal) type of cultural evolution and, not coincidentally, also display 'robust' physical characteristics. In the case of the latter, a cultural 'sudden jump' seems to have occurred during the Late Pleistocene which, in its turn, resulted in the entrenchment of archaic behavioral traits and the establishment of hierarchical societies.

\* So far, only six groups of hunters and gatherers were studied and defined as *immediate-return* and *egalitarian*: the Mbuti Pygmies of the Congo (Turnbull 1965); the !Kung Bushmen of Botswana and Namibia (Marshall 1976, Lee 1979); the Pandaram and Paliyan of South India (Morris 1975, Gardner 1980); the Batek Negritos of Malaysia (Endicott 1974) and the Hadza of Tanzania (Woodburn 1968, 1972, 1982).



Steiner concurs with Richter's (2000) and Anghelinu's (2014) observations regarding the antiquity of *cumulative cultural evolution*, which – despite being thought of as an exclusively ‘modern’ cultural signature – can be traced back to archaic hominins, including Neanderthals, who had initiated it already 60,000 years ago. Steiner offers two lengthy chapters meant to illustrate that the abovementioned chronological frame does not necessarily include the divergence of vertical orientations, which had likely occurred at a much later date, and under different ecological conditions. Accordingly, he suggests that in the case of certain isolated hunters-gatherers, a cultural ‘regression’ seems to have taken place, but only during the Early Holocene. The adoption of a cultural ‘primitivism’ – immediate-return subsistence – offered a degree of evolutionary flexibility that allowed for a neotental *leap*. This, in its turn, enabled the reduction of archaic behavioral traits – as a result of the side-effects of both physiological and psychological neoteny – and the emergence of egalitarian societies. Thus, Steiner dispels the engrained belief that the present of these hunters-gatherers is our past and concludes that egalitarian societies are a cultural achievement and not a cultural atavism. Moreover, he attracts the attention to the cognitive and ontological implications of such a cultural mutation.

## 6. The Limitations of Technologically-Mediated Knowledge and Creativity (*Cenzura transcendentă*)

As I have already emphasized, the vertical re-orientation effectuated by the ancestors of modern egalitarian societies occurred already from within the cultural coordinates and thus, at a stage when the cognitive ceiling became lower and, implicitly, the ontological horizon more restricted. In this context, Lewis-Williams' (1988) and Dowson's (1994) observation that, as late as the 1970s, about half of the men and one third of the women in any Kalahari hunter-gatherer camp were still able to enter a trance-like state whenever they wanted to and thus experience directly what, in other societies, would become the prerogative of the lone shaman. In other words, the ability to shift between *logic-driven*, analytic *Paradisiac* (*enstatic*) and *non-compositional*, associative and ‘childish’ *Luciferic* (*ecstatic*) cognitive modes was retained by a high percentage of the population. In such a context, the need for professional shamanism\* was likely not present and – in the absence of this initial division of labor – egalitarianism could be preserved. Egalitarianism guaranteed that knowledge acquired in trance would be shared like meat brought to the camp by the hunter, and that not only the bellies, but also the minds of people would be well-fed (Wiessner 1997). Moreover, the properties of associative cognition became *amplified* in communal trances – during ritual activities<sup>o</sup> – and the level of the cognitive ceiling could be raised, that is, the horizon became substantially opened (*dezmarginat*, in Blaga's native Romanian) thus allowing access to a wider spectrum of hidden ‘mystery’ to *all* the members of a community.

To live with Blaga's rich metaphoric imagery, the retention of the balanced relationship between *Paradisiac* and *Luciferic* perceptions in vertical cultural evolution can be *temporarily* disrupted in the favor of the latter and thus, an increased spectrum of ‘sacred’ *differentials* may be accessed and, subsequently, *integrated*<sup>[7]</sup> – despite the cognitive limitations imposed by what Blaga calls *transcendental censorship*.<sup>[6]</sup> Moreover, ‘differentials’ integrated in this fashion become parts of a pool of common *knowledge* that could be easily accommodated, despite its being contradictory to logic-driven perceptions of reality.

Thus, the stylistically less complex *Luciferic* cognition of these immediate-return hunters-gatherers – at a collective level – has the potential to *consciously experience* and *populate* alternate probabilities of reality or, as Blaga would have put it, to *fill in* the apparently *empty space* of the existential horizon and bring it to ‘plenitude,’ by *realizing an inherent state of potentiality*.

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\* However, as Dowson (*ibid.*) has convincingly inferred from the study of the chronological succession of rock art motifs in southern Africa, professional shamanism became part of these hunter-gatherers' ritual landscape only following contact with agro-pastoralist groups.

<sup>o</sup> Not to be confused with the Middle Paleolithic ‘ritual behavior’ mentioned in the opening section of this review. There, I relate to a communal cognitive effort meant to shift the balance in the favor of *Paradisiac* cognitive aptitudes, with the purpose of adding durability to adaptively advantageous causal configurations of reality and embed them in collective memory through repetitive techniques. Here, I address ritual approaches meant to breach the ‘censorship’ of the cognitive ceiling.

On the other side of the cognitive range, the *obsession* with *Luciferic* and 'childish' (*sensu* Low 2004) attitudes during the Eurasian Upper Paleolithic 'creative explosion' reflects an already advanced stage of specialization along the horizontal coordinate of the cultural field. An ever-narrowing '*plafon cognitiv*' and a high degree of stylistically-imposed restraints (*frâne stilistice*) – the result of a cumulative type of cultural evolution practiced for many millennia – severely *inhibited* a *direct* access of the 'historical being' to *hidden* 'mystery' (identified by Blaga as 'core differentials,' *diferențiale nucleare*) and distorted the perception of what was still retrievable. In such cultural orientations, the cognitive *rigidity* which was the aftermath of specialization to a *specific causal probability*, resulted in the inevitable lowering of the 'cognitive ceiling' and the loss of the ability to 'escape' the causal order that governs the cultural niche. *Creativity* became the *technique*\* recurred to in order to *assemble* different causal progressions governing alternate probable configurations of reality. The psychological mechanisms that play a role in *creative* endeavors are addressed by Steiner elsewhere (2018b). As for now, I would only mention his stress on the subconscious interactions between the conformist and non-conformist aspects of frequency-dependent biases (Henrich and McElreath 2003), which are of crucial importance in the *creative* process. 'Creativity' becomes the only possible vertical cognitive 'escape,' but its amplitude is conditioned by an already markedly sunk 'cognitive ceiling' (without the need for a *transcendental* 'anonymous entity').

The presence of children at Upper Paleolithic cave art sites and their documented contribution to the art (Bednarik 2007, Snow 2013) hints at the possibility that *Luciferic* abilities were eroded to such an extent that only children could still demonstrate them. Having in mind that *neoteny*, or rather its psychological side effects (Bjorklund 1997; Charlton 2006) are easily recognizable with and are characteristic of children (in the lack of cultural *training*) and 'natural people' (before *acculturation*), the cognitive abilities of juveniles became suddenly *meaningful* and applied in earnest. Only children could 'zoom-out' beyond stylistic restrictions.<sup>o</sup> The ability of Aurignacian adults – who were already caught in the rut of causality and entangled beyond hope in the *artificiality* of the constructed niche – must have been already severely impaired. Moreover, considering the paleoclimatic setting, the constructed niche became of utmost importance, meant to counter the environmental threat in an exclusively cultural manner.

The *Paradisiac* cognition that characterizes the elaborate cultural configurations described above penetrates 'mystery' in a gradual, step-by-step, and highly *biased* fashion. The *quantity* of stylistically-corrupted knowledge increases, but there is no *qualitative* breakthrough in the wish to widen the cognitive horizon. That is, such a *cumulative* and *progressive* cognitive approach does not allow for a *conscious access* to the information of the 'event horizon' (or, as Blaga calls it, *fond anonim*),<sup>[7]</sup> but only for a technologically-mediated *indirect* sense of its existence. With technological elaboration taking the central place in horizontal cultural evolution, knowledge is also pursued by recruiting technological aid. Technology produces the instruments that complement our limited cognitive potentials and the 'ceiling' is *artificially* raised, but only to project the very causality that governs the cultural niche on the texture of 'reality-as-such.'

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\* In *Neanderthals in Plato's Cave*, 'techniques' are understood as the French philosopher Jacques Ellul defined them in his Note to the Reader, in *The Technological Society* (1964: xiv), namely: "[the] totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity." Culturally-constructed artificial systems, instead of their being subservient to humanity, demand *techniques* that help human beings *adapt to them*, and accept their 'tyranny' (in this case, Ellul comes close to the postulates of *niche construction theory* [Odling-Smee 2003], which also predicts that certain cultural environments have completely eliminated the natural component and, in such an *artificial* context, selecting for maladaptive traits that only benefit survival in the specific cultural environment – but affect negatively biological fitness – becomes the driving force of cultural evolution).

<sup>o</sup> Steiner argues that the abovementioned cognitive abilities of children – who, during the Aurignacian, could still zoom-out beyond the culturally-imposed limitations on adult cognition – became traded for the apparently similar 'abilities' displayed by schizophrenics (e.g. Noll 1983, Spikins et al. 2018), during the Solutréan and Magdalenian. The natural ability to shift the contextual focus became corrupted to such an extent that only cultural *techniques* would have approximated it – ranging from the use of hallucinogens to the display of impressive shamanic techniques (as described by Witzel 2011). Shamans become ritual *specialists* and monopolize ritual, which becomes their 'field' (what leads us back to Ellul: the first *division of labor* following the first *technique*, namely, 'art.' However, the external illustration of visions acquired during culturally-induced hallucinations is very different from the experiences acquired in a *naturally* defocused mental state.

Moderately divergent mental states – inspiration, religious fervor, meditation, hallucination – become, likewise, mere *buffering techniques* (*sensu* Ellul 1964) between our *culturally-acquired limitations* and *biologically-evolved potentials*. The ‘alternate’ aspects of reality acquired with the help of such techniques are mere *ideations* and some of them cannot be consciously-experienced or culturally-accommodated and thus, they remain subjective phenomenal perceptions ‘banished’ by the cultural ‘self’ to a psychological dimension known as the *subconscious* – which, itself, is a cultural product that reaches its ultimate complexity in advanced stages of horizontal cultural evolution.\*

Steiner concludes his discussion of the limitations of technologically-mediated *Paradisiac* knowledge by taking us back to the starting point of his inquiry, namely: the origins of *metaphor*. Abstract exogrammatic representation, meaningful mimetic progressions, repetitive musical and rhythmic sequences were presented as the emergent manifestations of the Acheulian mind that had also applied *metaphor* in its perception, description and transmission of ‘reality-as-such.’ By ‘exogrammatic representation,’ he understands the storage of specifically-sequenced information on external media, as exemplified by abstract rock art. Consequently, ‘exograms’ are defined as ‘memory traces’ stored outside the brain as *consciously-sequenced information packages* meant to ‘stabilize’ and add *duration* to conceptual calibrations of reality. Although the ability to produce them is a biological development, the transmission of exogrammatic meaning becomes culturally-conditioned.

The uninterrupted tradition of external information storage has reached its peak in the 21<sup>st</sup> century when, practically, all the *accumulated* knowledge of humankind is stored outside the brain, in machine-readable formats. According to Steiner, we live in the *Age of Exograms*. Knowledge becomes reduced to the mastering of the *techniques* meant to access information stored on servers and clouds, which can be retrieved only with the help of machines.

The sheer amount of cumulatively-acquired (*Paradisiac*) knowledge could easily lead to a *combinatorial explosion of possibilities*; in other words, to a state of *undecided superposition*. Despite its potential impact, this challenge, according to Gabora and Kitto (2013), is not as insurmountable as it might at first seem, as there is one mathematical formalism which was invented precisely to describe such contextuality: quantum theory. Steiner’s abovementioned definition of exograms reflects, indeed, the process by which information in a state of quantum superposition may be collapsed to a (literally) *particular* configuration, the perception of which becomes shared with other minds and embedded in collective memory with the help of repetitive ritual techniques. I have already outlined how the retention of the ability to shift at will between the *associative* and *analytic* ends of human cognition (Gabora 2003) allows for *multiple* probable collapses of superposed information and for the conscious perception of conceptual worlds constructed on ‘alternate’ causalities. Knowledge – very much like subsistence strategies, or technological elaboration – is kept at a level of *sufficiency* in vertical cultural contexts and not *efficiently* accumulated, like in the case of horizontally progressing cultures. Moreover, *Paradisiac* knowledge relies on the projection of a *single* causal probability on the fabric of the Universe and tries to convert novel information – acquired with the help of instruments calibrated for the detection and

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\* Summing up his lengthy discussion of ‘vertical’ and ‘horizontal’ tendencies in *evolution, culture* and *cognition*, Steiner stops short from casting a biased value-judgment. Instead, he cites a poll of emotional attitudes in various populations undertaken by Michael Maccoby in 1972. Maccoby has identified two prevailing inclinations, namely: ‘life-loving’ and ‘death-loving.’ The latter characterizes people with a deep emotional attraction to the mechanical, to all that is not alive, to all that is man-made. Indifference toward life is common in the case of people who prefer ‘law and order’ to living structure, bureaucratic to spontaneous methods, gadgets to living beings, repetition to originality, hoarding to spending. Conversely, people who display spontaneity, cherish life and its organic nature, detest technological addiction, and are not inclined to hoarding are described as ‘life-loving.’ The two antithetical inclinations define not only individuals but are also reflected in the material and mental ‘values’ that define cultures. Interesting to note to what extent the cultural attitudes of immediate-return egalitarian hunters and gatherers fit Maccoby’s description of *life-loving* individuals and, conversely, the markedly *death-loving* attitudes that seem to characterize ‘civilized’ cultural configurations. However, Maccoby’s terminology must be tempered and re-formulated in a less extreme fashion. Culture, in Steiner’s view, is either *life-affirming*, or *life-restricting*. Life-affirming/-restricting tendencies may also be observed in the biological field. Indeed, Blaga’s evolutionary framework in *Aspecte antropologice* revolves around *Life* and its struggle to *affirm* itself by escaping the dangers of specialization, which would *restrict* its *cognitive* potentials. The realization of the same potentials is also the ‘purpose’ of cultural evolution within the complementary Blaga coordinates, as forwarded by Steiner. Punctuated *Luciferic* cognition may thus confidently be defined as *life-affirming*, while linear *Paradisiac* knowledge displays markedly *life-restricting* characteristics.

*measurement of the same* probabilistic progressions – to the causal stencil of the scientific method. When confronted with the non-compositional and logic-defying properties of reality detected with state-of-the-art equipment, the scientific method cannot integrate or accommodate them, except by conjuring up sophisticated metaphors that are uncannily reminiscent of ‘primitive’ creation myths (see below).

## 7. The Event Horizon

(*Diferențialele divine*)

My review of *Neanderthals in Plato's Cave* and of Lucian Blaga's influence on George F. Steiner's monograph could be concluded at this point. However, given that Steiner's evolutionary model owes a great deal to Blaga's postulates in *Aspecte antropologice*<sup>[3]</sup> and *Ființa istorică*,<sup>[4]</sup> and that his understanding of human cognitive particularities is reminiscent of those explored by Blaga in his *Sacred Differentials\** (*Diferențialele divine*<sup>[7]</sup>), my curiosity was stirred: the three separate titles were – following Blaga's editorial will – published together within the covers of a single volume, titled *The Cosmological Trilogy* (*Trilogia cosmologică*<sup>[ibid.]</sup>). Steiner's evident fascination with quantum mechanics and his cognitive hypothesis that, practically, updates Blaga's *Sacred Differentials* to a quantum level, left me wondering why Steiner has stopped short from elaborating a cosmological model. I composed an e-mail in which I explained the nature of my interest and asked him whether he could draft an opinion touching on the cosmological propositions of Blaga's metaphysics.

In his answer, Steiner has attracted my attention to what I have written in the previous – meant to be the last – section of my review. In the concluding paragraphs of the section, I have likened the scientific method to *Paradisiac* cognitive approaches and have referred to Steiner's observation that scientific hypotheses that touch on the fabric of reality at nuclear and cosmological levels resemble to great extent myths that are usually dismissed as ‘primitive’ by the very scientists who devise their own myths, only to save the mathematics that hold our conceptual construct of immediate reality together. Therefore, any ‘cosmological hypothesis’ having as a model present (meta)physical myths would take us to the ‘highlands of speculation’ (*podșurile speculației*, to cite one of Blaga's favorite expressions). This explains why the elements of the quantum-inspired cognitive model forwarded by Steiner are always associated with and referred to empirical observations provided by non-physical disciplines, and why his quantum explanations are always very generalized and disappointingly cryptic. I have lived with the metaphysical freedom granted to philosophers and, in this review, I have stressed on the parallels between the neuropsychological insights of quantum theory and Steiner's cognitive model, mostly encouraged by Blaga's own fascination with quantum mechanics. I have also taken the liberty to present – without properly explaining my choice of words – Blaga's ‘differentials’ and the process of their ‘integration’ from the quantum perspective on ‘information’ and ‘collapse.’ Moreover, Blaga's mysterious ‘anonymous *fond*’<sup>o</sup> was termed as the ‘event horizon,’ again, without offering a definition of the concept. I must admit that I have edited the text of the previous section immediately after receiving another e-mail from George Steiner in which, to my delight, he has agreed to suggest a cosmological scenario that could accommodate both his speculations and Lucian Blaga's metaphysics.

As Steiner sees it, one could theorize that – if Blaga's ‘*fond anonim*’ is an *absolutely* opened-up (*dezmărginit*) *horizon* – an *absolute* vertical evolutionary position would be needed to gain access to the totality of the ‘information’ stored in the spatial confines of this horizon.

\* The correct translation is *Divine Differentials*, but Steiner insisted on the use of the word ‘sacred.’ As the antonym of ‘the profane,’ Steiner's *Sacred* is the human-mediated state of ‘plenitude’ of a conceptually-constructed, but consciously populated ‘empty space’ of an ‘alternate,’ causally-different, but intrinsically consistent potentiality (for a discussion, see Steiner 2018b).

<sup>o</sup> Blaga's students disagree on the meaning of the Romanian word *fond*, which is understood by many – literally – as ‘background.’ Another interpretation would be ‘fonds,’ also *fond* in Romanian, and used in archiving as a designation for collections containing information emitted by the same source. Given Blaga's repeated stress on ‘differentials’ being ‘emitted’ by the same ‘anonymous source,’ and contained in an ‘horizon’ often referred to as *fond anonim*, I am inclined to vouch for the latter interpretation. Especially so, because of Steiner's use of the term ‘event horizon,’ which – as I will soon explain – is a concept borrowed from the cosmological hypothesis that informs his own theoretical approach. Not surprisingly, the *Holographic Universe* hypothesis is also fully compatible with the postulates forwarded in Blaga's *Diferențialele divine*.



Not incidentally, the term ‘horizon’ conjures up a two-dimensional image. Indeed, the *holographic principle* – inspired by black hole thermodynamics and therefore perceiving the Universe as an inverted black hole – states that the entropy of ordinary mass is proportional to surface *area* and not *volume*, that is, three-dimensional volume is illusory, and the Universe is a hologram which is isomorphic to the information ‘inscribed’ on the two-dimensional surface of its ‘boundary’ (Bousso 2002). Similarly, Beckenstein (2003) suggests that the physical world is made of *information*, with energy and matter as incidentals. Entropy, if considered as information, is measured in bits. The total quantity of bits is related to the total *degrees of freedom* of matter/energy, that is, the sum of all the three-dimensional potentialities that two-dimensionally stored information may produce. However, for a given energy in a given volume, there is an upper limit to the density of information about the whereabouts of all the particles which compose matter in that volume, suggesting that matter itself cannot be subdivided infinitely many times and there must be an ultimate level of fundamental particles. As the degrees of freedom of a particle are the product of all the degrees of freedom of its sub-particles, were a particle to have infinite subdivisions into lower-level particles, the degrees of freedom of the original particle would be infinite, violating the maximal limit of entropy density. The holographic principle implies that the subdivisions must stop at some level, and that the fundamental particle is a bit (1 or 0) of information.

A *cosmological horizon* is a measure of the distance from which one could possibly *retrieve information*. There are parts of the Universe that will never be observable, no matter how long the observer waits for light from those regions to arrive. This constraint is due to various properties of general relativity, the expanding universe, and the physics of Big Bang cosmology.

Cosmological horizons set the size and scale of the observable universe. The *boundary* past which events cannot ever be observed is an ‘event horizon,’ and it represents the maximum extent of the ‘particle horizon.’ In cosmology, the *event horizon* of the observable Universe is the largest comoving distance\* from which light emitted *now* can ever reach the observer in the future. Conversely, *particle horizon* represents the largest comoving distance from which light emitted *in the past* could have reached the observer at a given time. For events beyond that distance, light has not had time to reach our location, even if it were emitted at the time the Universe began.

Susskind (1995), in agreement with the holographic description of the *world-sheet hypothesis* of string theory (Di Francesco et al. 1997), suggests that the oscillation of an event horizon is a *complete description*<sup>o</sup> of both the incoming and outgoing information. However, there is a way in which incoming information can modify the outgoing information: the gravitational field of incoming information would deform the event horizon, which could thus emit different information than the undeformed two-dimensional horizon. As Gerald ‘t Hooft (1993) argues, this novel field may be likened to a dome-shaped ‘bump’ on the event horizon and, like a shadow, the bump is an *alternative* three-dimensional configuration of the information that determines a particle’s location and mass. By switching our perspective, we would be able to move from the confines of one such ‘shadow-world’ to another, changing what we consider the ‘immutable laws of nature’ and perceive/formulate novel causalities meant to keep such an alternative reality together (Talbot 1991, Dijkgraaf 2018).

This lengthy technical discussion could be summed up with Dijkgraaf’s (ibid.) pertinent observation that, in string theory, certain features of physics that we usually would consider ‘laws of nature’ – such as specific particles and forces – are, in fact, *solutions* devised by the human mind. However, they are determined by information pertained in cosmological horizons ‘hidden’ from the human mind.

As a summary of this review, I will attempt a ‘translation’ of the language used to describe the holographic principle to Blaga’s terminology and configure the role – but also the limitations – of human-specific cognition in the conscious realization and perception of multiple holographic potentialities.

\* In standard cosmology, *comoving distance* and *proper distance* are two closely related measures used by scientists to define distances between objects. The expansion of the Universe results in changes of proper distance, while the comoving distance is unchanged by this expansion. Comoving distance and proper distance are defined to be equal at the *present* time, that is, the ratio of proper distance to comoving distance is 1. At other times – *past* or *future* – the scale factor differs from 1 (Davis and Lineweaver 2004).

<sup>o</sup> i.e., the sum of *primary qualities*, which is information preserved as a quantum state on the surface of an event horizon.

If Blaga's '*fond anonim*' is the *absolutely* opened-up (*dezmărginit*) horizon from which all the bits of core/*nuclear* information are *emitted*, an *absolute* vertical evolutionary position would be needed to access the totality of information stored on the surface of such an *event horizon*. Unfortunately, despite its markedly vertical tendency, human-specific cognitive evolution cannot reach such an ideal point, which is the prerogative of a *hypothetical* existence, referred to as the 'Great Anonymous' (*Marele Anonim*). This idealized entity is, according to Blaga, an 'ontological center' situated – like the *event horizon* of the observable Universe – at the boundary past which events cannot ever be observed. As Blaga cogently put it, this anonymous fond is '*dincolo de orice lumină,*' that is, beyond any light.<sup>[7: 14]</sup> However, as Blaga's critics have noticed (cf. Eugeniu Nistor 2017\*), the *Great Anonymous* is easily confounded with Its own substance – the *anonymous fond* – and thus a duality that spoils the elegance of Blaga's metaphysical system is unnecessarily introduced.

Human cognition is restricted to what the holographic principle calls the *particle horizon*, located at the largest comoving distance from which light emitted *in the past* can ever reach the observer at a given time. This *peripheral* horizon is all we have access to, while the event horizon is the 'hidden' (*ascuns*, in Blaga's text) 'core' (*nuclear*) horizon, the revelation of which is 'censored' by a combination of objective and subjective limitations. Beside the *objective* physical (and not necessarily 'divine') limitation ('censorship,' as Blaga perceives it) our cognitive abilities are further truncated by *subjective*, culturally-developed 'stylistic filters' (*frâne stilistice*). Similarly, the 'cognitive ceiling' – as hypothesized by Steiner, who adopts Blaga's idea of a *plafon biologic* and traces its equivalent within his complementary, cultural coordinates of evolution – inhibits our vertical (*Luciferic*) cognitive 'escapes' which, in the case of complex cultural configurations, reach their maximal amplitude only in creative acts. Human *observation* – acting very much like 't Hooft's gravitational field produced by incoming information, but introduced by the act of *conscious* contemplation – deforms the *surface* of the particle horizon and adds to it another dimension, which results in an illusory *volume*. The three-dimensional *collapse* – or 'solution,' *sensu* Dijkgraaf – achieved through *conscious* observation adds *durability* and *substance* to a specific, culturally-devised and transmitted, but stylistically-tainted *causal* interpretation and perception of 'reality-as-such.'

If I were to introduce a teleological element to Blaga's punctuated evolutionary and cognitive model, I would theorize that the physical realization of *all* possible three-dimensional realities intrinsically contained in the information of the event horizon would be the ultimate purpose of *cosmic* existence. In the same vein, the ability to shift *perspective* ('contextual focus,' *sensu* Gabora) and to realize, in *associative* mental states, '*as many as possible*' – even if contradictory – configurations of the information stored on the surface of the *particle horizon* would be – the *a priori* finite – goal of *human* existence. But, a conscious perception *and* population of multiple holographic possibilities can be accomplished only by recurring to *Luciferic* cognitive abilities, in altered states of consciousness that go beyond culturally-devised techniques, or 'creativity.' Paradoxically, it is not Blaga's much-exalted 'historical being' who carries out this evolutionary objective, for reasons that were already discussed at large.

In conclusion, Blaga's philosophical legacy remains actual in contemporary cutting-edge scientific contexts. Beside recent revelations in the disciplines that inform cognitive archaeology, fresh discoveries and novel theories in physics also support Blaga's conceptual cognitive/cultural/ontological framework which, let us not forget, was elaborated during the early- and mid- 20<sup>th</sup> century. Lucian Blaga's philosophical system has successfully survived dramatic shifts in our perception of ourselves and of the world in which we apply our species-specific cognitive abilities and, after more than fifty years, it is still fresh enough to inspire future shifts. Similarly, George F. Steiner's *Neanderthals in Plato's Cave* is a book with the potentiality of contributing to the formulation of novel theories that might dispel some of the sticky paradigms that persist in paleo- and general anthropology, cultural and behavioral sciences and archaeology. The book is warmly recommended to scholars in the abovementioned fields, but also to informed readers of popular science and philosophical literature.

\* Eugeniu Nistor (2017, unpublished paper). *Diferențialele divine* ale lui Lucian Blaga – Un model metafizic de geneză a lumii. BDD-A27524, Universitatea Petru Maior, Târgu Mureș.

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