Exploration

Does the Efficacy of the Natural Principle of Consistency Explain Consciousness?

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Abstract

Based on assumptions common in physics, the emergence of consciousness is derived from the concept of a nature preceding fysical nature. It is argued that an initial absence of being is a force-bearing inconsistency. The analysis presented here allows the human mental system to be conceived as a workspace of the natural principle of consistency (NPC). In the conceptualized workspace, subjective qualities of experience are taken over from the NPC's domain by virtue of rules whose origin, as well as that of the qualities, is not physical. The paper concludes with an illustration of how this workspace model does explain shifts in focus of attention. The lack in the theory of the Global Neuronal Workspace Model of Consciousness (GNW) of a sufficient explanation for these shifts in the neuronal workspace, as well as for the origin of memories and the subjective qualities of experience, argues for integration of both models.

Keywords: Natural principle, consciousness, explanation, efficacy, consistency, global workspace, neuron, memory.

1. Introduction

The GNW is a widely accepted theory despite the criticism that it does not explain phenomenal experience, also called “the subjective quality of experience” (Chalmers, 1996, p. 4. For a representation of this criticism, see Dalton, 1997, p. 316-18). Elitzur raises objections to Dalton's argument but does not deny the problem. (Elitzur, 1997, p. 319-24) Others attempted to show that the GNW provides clues to explain phenomenal experiences. (Robinson, 2009; Sousa, 2009) My position in this debate amounts to the view, dirived from my analysis in this paper, that phenomenal experiences are not produced by brain processes although they are influenced by them. Their origin, I attempt to show, can be deduced from the efficacy of the NPC: the natural non-mental equivalent of what we know as the guiding influence of the consistency principle in cognitive processes. With that, the human mental system is understood to be a workspace of the NPC.

How can phenomenal experience be conceptualized as a natural product? My elaboration of this main research question leads to a view that can be labeled as cosmic idealism because it brings with it the concept of a cosmic subject. Usually, the cosmic idealist approach presupposes the existence of a cosmic subject. In doing so, the question of how a cosmic subject could ever have arisen is not answered. That the existence of a cosmic subject is presupposed makes the cosmic idealist approach speculative, making it not stand in for a fundamental theory. The operation and

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structure of the mental system of a cosmic subject can only be thought about consistently if they are derived from the course of events leading to the emergence of a cosmic subject.

An example of speculation about the furnishing of the mental system of a cosmic subject is Kastrup's suggestion "we are but dissociated alters of cosmic consciousness, surrounded by its thoughts". (Kastrup, 2018, p. 125-155) In doing so, he ascribes to the cosmic subject properties comparable to what we know as dissociative identity disorder. As long as a proper understanding of the origin of a mental system of a cosmic subject is lacking, one can only guess at its functioning. My contribution to the debate on consciousness in this paper consists of offering arguments that make it conceivable how a cosmic subject, assuming an initial absence of any being, could possibly have arisen and what implications this entails for the structure and functioning of its mental system. The consequences I draw from my analysis unpack differently from those in Kastrup's theory.

To address the main research question, I did not start from a plan in which the question was elaborated in advance into sub-questions. I chosed to start from postulates and derive from them propositions that provide, as self-evidences, a sound basis for an argument. One of the three postulates, 'the thought that everything that is exclusively is caused by matters that also are or were leads to the thought of infinite regression', prompted to first explain the origin of 'being'. The postulate led to the question 'How can (a) being emerge from an absolute absence of being?'. I answer this question in the first part of the paper. It provides an explanation for the emergence of consciousness. The concept of the natural principle of consistency (NPC) plays a key role in this explanation. This imposed as sub-questions: 'How should the efficacy of the NPC be conceived?', 'How can the efficacy of the NPC give a human mental system phenomenal experience?'. These questions are answered in sections 1.4-5.

The question 'How can (a) being emerge from an absolute absence of being?', is an unanswered question not only in cosmic idealist philosophy but also in physics. By itself it is an obscure question if it is unclear what is understood by 'being' and 'absence of being'. Nevertheless, the development of physics makes it opportune to ask this question. Physicists do not consider it impossible to provide evidence for a 'unified theory of universe'. Should the last hurdle be overcome and a unified theory of universe would be realized and accepted, then the assumption that physical phenomena such as space, time and gravity represent their own intrinsic nature, is counter-argued. [1]

When a 'unified theory of universe' comes true, implying that physical nature consists of nothing more than rules, then physicists are faced with the question of where these rules come from. Answering this question may be outside the scope of physics. On the other hand, physics provides knowledge that gives hints for answering this question. For example, physics shows that although physical order may arise locally, no physical phenomena are known to explain the initial order of the universe. This fact allows for the hypothesis that physical nature arises from a non-physical nature which builds order, as well as for the hypothesis that the events in a physical nature are also guided by rules that cannot be derived from physics.

[1] There is only one hurdle to overcome by physicists. The hurdle consists of the still unexplained relationship of the force of gravitation with those of the strong nuclear force, electromagnetism and the weak nuclear force.

A further hint gives Einstein's formula $e=mc^2$. Einstein's empirically proven formula $e=mc^2$ already partially covers a 'unified theory of universe'. This formula shows that the physical phenomena of energy, mass, space and time have no intrinsic nature other than that of rules. Mass (m) represents curved space, speed of light (c) consists of the elements space and time. Einstein's formula actually consists of two elements: space and time. If there is no space or time then there is no energy. The reverse also holds true. The elements space and time can exist in physical nature only in their consistency based on rules. Of the intrinsic nature of these physical phenomena Einstein's formula leaves nothing but than consisting of rules.

A proven 'unified theory of universe' would confirm that this applies to all of physical nature. Noteworthy about Einstein's formula is that mass is conceived as curved space. In curvature of space lies the energy of mass. In our understanding of curvature, we know curvature only as a phenomenon that takes place *in* space. Seen in this light, Einstein's formula turns the allusion of a metaphor into a physical reality. Why should the emergence of energy (and therefore as well as that of force) arise precisely from a phenomenon that we can only recognize as a metaphor? Nature is all-encompassing. Physical space is not infinite. What about imaginary space? Is the seemingly endlessness of imaginary space underlying representations so curved that infinity loses itself in itself? Nature is not a priori physical.

Therefore, it is not a priori impossible that imaginary space originated in a nature that preceded physical nature. The hint that Einstein's formula $e=mc^2$ gives is that the metaphor of physical force might be used to denote changes that can be expected due to inconsistency of an initial absence of being in a nature that preceded physical nature. In section 2.4 I will return to the idea of curvature of imaginary space and relate outcomes of my analysis to the question of why physical nature is arranged in such a way that precisely curvature of space relates to energy and speed of light. I conclude this paper by presenting the main arguments of evidence that lead to the conclusion that consciousness originates from the efficacy of the NPC. This conclusion argues for intergration of the workspace model given here with that of the GNW.

2. The origin of consciousness

From the following postulates I derive propositions that I take to be true as self-evident deductions.

1. A better understanding of the consistency of the interrelationship of physical phenomena enriches the science of physics.
2. The thought that everything that is exclusively is caused by matters that also are or were leads to the thought of infinite regression.
3. Changes in the state of a fysical system arise from the system's urge to keep the system consistent because the flexibility of the segments of the system and the interrelationships between them are suited by consistent ordering.

Together, the prediction and empirical evidence of the existence of the Higgs particle represent an example of the enrichment of scientific knowledge of fysical nature. The discovery of the particle's existence testifies to the human ability to understand the consistency of the course of events in physical nature through consistent thinking.

Proposition 1. Human cognitive ability shares with physical nature the principle of consistency.

The human cognitive potential does not reach so far as to know 'the thing in itself' Kant states. (Kant, 1998, p. 307 f., 310, 312, 315, 422) Thus, proposition 1 is subject to the caveat that a consistent signification of a physical phenomenon hides a natural equivalent that cannot be known. Therefore, it should not be assumed without question that the elements that make up a consistent signification of a physical phenomenon, e.g. the elements that make up a formula, have one-to-one equivalents in nature. In my references to the efficacy of the NPC I name the natural equivalent of meaning(s) in nature in singular 'the natural abstractum' because the NPC may be included among 'the things in themselves'. 'The natural abstractum' by itself is not an abstraction. I am using the word abstractum here because through abstraction understanding can be gained of the state of affairs in nature and therefore a state of nature may be understood as the equivalent of abstractions.

In the second postulate, in the phrase 'everything that is' the meaning of 'is' is problematic. In the dutch dictionary Van Dale, the word being as a noun is given the meaning of existence. As an intransitive verb, existence means 'in essence being'. As a noun existence means "aanwezen" ('are at', as used in the expression 'my guests and I are at table'). In the dictionary the word 'aanwezen' is given the meaning of 1. the present-ness -2. the existence of someone or something in reality. The word existence used here under -2 leads to circular reasoning because 'aanwezen' is referred to as meaning of existence. As an intransitive verb 'exist' means "in wezen zijn" ('in essence being'). Present means 1. being in a certain place -2 available, in stock, at disposal (of things) -3. being there, having come (of a time, possibility, opportunity). The word "zijnsgrond" (in a direct sense 'ground of being') has the meaning of 'essence of being (ratio essendi)'. This meaning returns in the dictionary where the adjective 'really' is explained as 'essentially existing or essentially being what is denoted by the noun'. (Van Dale 1989, dictionary)

Problematic to these meanings given by the dictionary to the words being, existence and really is that 'being' is given the meaning of 'existence'. The word being thereby adopts outgoing the meaning of existence the meaning of 'in essence being'. Another issue is that these three words refer to each other due to the use of the word "wezen" (essence). As a intransitive verb, 'wezen' acquires in the dictionary the meaning of 1. exist, be -2 are present, are located. As a noun, 'wezen' has the meaning of 'the really being, the essential, that which makes a thing what it is'. (Van Dale 1989, dictionary) Thus, because of the use of the phrase 'what it is' the meaning of

the word ‘wezen’ is not given without reference to that of ‘be’ or ‘being’. The expressions ‘what it is’ and ‘everything that is’ can be better understood when read in the context of the meaning of the word nothing. As an indefinite pronoun, 'nothing' stands for ‘no any thing, no any matter, as opposed to something’. The word something, as an indefinite pronoun, means ‘an indefinite material or incorporeal thing, some thing’. (Van Dale 1989, dictionary) 'Everything that is' can thus be read as ‘all material or incorporeal things concerning’.

Thus read, the second postulate makes sense in regard to the first postulate because the principle of consistency is not produced by material (read physical) or immaterial (read mental) matters. The principle of consistency guides these matters and, because it is not produced by them, cannot itself be named as a being or as ‘something’. At best, the consistency principle can be said to predominate. What this issue is about is that the idea of this predominance, understood as disposition of nature, offers a solution to the statement of the second postulate because, as an explanatory ground, the predominance of the principle of consistency, a predominance even in the absence of being, can invalidate the idea of endless regression.

If it is assumed that all that is is caused by another being, or if every existence depends on another existence, then the cause of the emergence of an initial ‘being’ cannot be explained. This problem can be solved by explaining how from absence of being a being can arise. Because the principle of consistency is not generated by physical or mental matters, the matters that give the word ‘something’ as well as that of ‘being’ meaning, it may be assumed that the equivalent of the principle in nature, the NPC, also predominates in the absence of any being and stands candidate as the cause of the emergence of a primordial being at the onset of nature.

Proposition 2. The NPC stands candidate as the cause of the emergence of a primordial being.

The course of events in a physical system is characterized by a fixed stramine: a force is undergone until the system has returned to rest. This does not hold true if a force acting on the system cannot be processed. The system can then be disrupted and even cease to exist. If a tennis ball is hit so hard that it leaks then it will lose its functionality. The stramine that determines the course of events in a physical system can be recognized in the course of events in a mental system.

Undergoing a force, following this stramine, can take place in multiple phases. A tennis ball slammed against a wall will dent when colliding with the wall. The ball undergoes its kinetic force during the collision by transforming this force into elastic tension and increased air pressure (phase 1). Subsequently, the elastic tension and air pressure discharge, causing the ball to move away from the wall and again carry kinetic force (phase 2). The system thus regains the rest it had when the ball approached the wall. If phase 2 does not follow here and no cause exists for the termination of the event, there would be a lack of consistency of the system. A cause of

the premature termination of the event could be freezing the tennis ball while denting. The accumulated elastic tension cannot then discharge. But this does not introduce inconsistency because it is an intervention in a natural course.

When I look at the clock and think 'It's time to walk the dog', this thought gives me an argument to proceed to action. I then undergo the force of this argument. This undergoing, my consideration of whether or not to act, may consist of multiple phases because various considerations might come to my mind. For example, I might consider that I would like watching the TV program to the end. Moreover, if I realize that I walked the dog later than usual this afternoon, that might lead to the consistent decision to postpone walking the dog. My mental system has returned to its rest once I believe I have made a well-considered decision. My mental system can also, comparable to freezing the tennis ball, calm down before I have completed the thought process. Suppose I am suffering from dementia and although I realized that it is the usual time to walk the dog, I also realized I like to follow the broadcast, but after that forget that I am being urged to act. I then make no decision, nevertheless my mind returns to its state of rest. There is no inconsistency here because the thought process is terminated prematurely by a a physiological cause.

Now, given the stramine that events in a physical or mental system follow, from which it can be inferred that a nonphysical nature preceding fysical nature is also subject to forces? As a cause of change, a force has relative impact. The course of events in physical nature is not self-evidently determined by forces. It is determined by the existing laws of nature. In the physical nature known to us, kinetic force makes glass break when this force, transformed into tensile force in the glass, exceeds the force of adhesion of glass crystals. This may be different in a physical nature that has other laws than ours. Suppose an alternative physical nature has a law of conservation of order. It might then be that the force required to detach glass crystals must be twice as great than in our known physical nature if, because of the law of conservation of order, detachment of glass crystals should be accompanied by adhesion at other locations in the glass.

Thus, a cause-effect relationship is not inevitably dependent on the size of forces. A force, as a cause of change, is bound by the leash of natural laws. Laws determine the impact a force has on changes in a natural system. This says nothing other than that the phenomenon of force is inherent in making a system consistent, i.e. inherent in the efficacy of the NPC. Stated otherwise, the segments of a natural system (its properties) represent forces precisely because of their consistency. Because the properties of a system represent forces it may be assumed that these forces are inherent in maintaining consistency of the system. If a physical nature is preceded by a nonphysical nature, then it may be expected that it cannot escape rules that apply in this preceding nature. Since the rules in physical nature represent forces it may be assumed that they also do so in this preceding nature.

Proposition 3. In conceptualizing a nature prior to physical nature, the item force may be used to explain the consistent course of events in this prior nature.

In the next section, I consider whether the natural equivalent of the meaning of absence of being (the natural abstractum), assuming a predominance of the NPC, represents a force that may be regarded as the causer of a primordial being.

2.1 How to interprete the meaning of 'absence of being'?

If nothing is, if being is absent, then there is no reality yet, i.e. a condition, a state in which nature is. Reality means 'in essence being', which can be understood as 'being in being'. [2] Stone is a 'be as/a be to what it is' if stone, taken as a linguistic subject, coincides with the predicates (the properties) attributed to it. This coincidence, this 'be as/be to' what it is, gives stone its reality, its *essenti*ally being. An explanation of the emergence of reality starting from absence of being will thus have to indicate how predicate and subject of the expression 'absence of being' coincide, one could argue. Absence should then, if this reasoning holds, be conceivable as a possible predicate of being. Switching the roles of subject and assigned predicates, what is allowed by a correct and complete definition of 'stone', would, provided that here other than in the case of stone only the predicate absence may be given to 'being', give as result 'being of absence'. After all, if nothing but stone were to exist and stone would have only one property namely hardness, then instead of 'hardness of stone' it may also be said 'stoniness of hardness'.

'Being of absence' can be easily understood as 'reality (state of nature) that nothing is' if 'being' is understood here as 'in essence being'. But is that allowed and why would it be allowed here? After all, 'being' is not yet 'in essence being' and assuming a switching of the roles of subject and predicate in the expression 'absence of being' is only allowed if absence could be understood as property of being. The words absence and being carry opposite meanings. If they are related to each other in the expression 'absence of being', then they indicate inconsistency because in the imagination that nothing is, the meanings presence and absence lose their sence when space is thought away. An imaginary representation requires imaginary space. The representation that nothing is can at most be that of empty space. But imaginary space is something. If this space is

[2] In Latin, the word absent is a participle of 'abesse' where ab = away and esse = being. In Latin, the word present is derived from 'prae' ('before', in the sense of being in front) and 'esse' (being). (Van Dale 1997, etymological dictionary) Thus, departing from the Latin origin of the word 'absent' and that of 'present', the participle 'away' is understood as the antithesis of 'before'. When calculating 7 - 5, in our representation we take away the amount of five from the total of seven. The amount of two then remains in the foreground. Remarkable in this context is that 'take away' does not have the meaning of nullification (which would have the effect of making you forget that you are calculating) but that of setting aside, placing in the background. This makes one recognize in the participle 'ab' (away) a spatial aspect. Beside this, it can be seen that the participles ab and prae steal their meaning from 'esse' because they cannot be thought of without the meaning 'esse' (being). Reality means 'in essence being'. Based on the Latin meanings of absent and present given here, 'in essence being' stands for not being away from or being in front of being, i.e., it stands for 'being in being'.

thought away (and that one must do if one tries to imagine that nothing is) then there can no longer be presence.

Absence then cannot be because absence cannot be thought without the notion of presence. It might now be thought that the expression 'absence of being' is therefore meaningless. This view overlooks the proposition 1 ('Human cognitive ability shares with physical nature the principle of consistency'). We encounter here with our cognitive ability an inconsistency based on truth and not on errors of thought. We do not encounter meaninglessness here. Thinking away space here leads to an inconsistency because the thought that there is no absence leads to the thought that there is presence.

Did this inconsistency had an equivalent in nature? [3] If on the basis of consistent thinking it can be decided that there is a *true* inconsistency here, then it may be expected that, assuming proof of proposition 1, this inconsistency had a natural equivalent when nature started. It should not be assumed that meanings always have one-to-one equivalents in the natural abstractum. In the case of the inconsistency of 'absence of being', an exception can be made to this. An inconsistency, a contradiction, consists of at least two elements. The expression 'absence of being' does not exceed this amount. Therefore, it may be assumed that in nature the inconsistency of absence of being (provided it is a true inconsistency) as 'the thing in itself' is composed of a one-to-one reflection of the meanings absence and being. We may understand the natural equivalent of the inconsistency here as consisting of two components.

Language leaves nothing but to note an inconsistency in the meanings 'beinglessness', 'nothing is', 'no being', 'without being' and to my mind in all statements expressing the notion of absolute absence of being . The wordphrase 'sence' in the expression 'absence of being' is a derivative of 'being' and we encounter comparable problems with the other expressions. For example, the expression 'nothing is' says 'no something is'. 'Something' is a being. So 'nothing is' says 'no being is', which can only be thought consistent when appealing to the word presence. But presence is also a being because it presupposes physical or imaginary space. The expression harbors both an inconsistency and a coherence of the elements of which it consists because the meaning 'something' contains that of 'being'.

Based on postulate 1 it can be expected that in the domain of the NPC the equivalent of the meaning of absence of being can *become* synonymous with the equivalent of the meaning of being of absence only if the meaning of absence of being is a *true inconsistency*, i.e. is not an inconsistency whose origin rests on errors of thought, but is an inconsistency that once had a true

[3] One might ask here, '*If initially nothing was, why was initially 'a natural abstractum'? Shouldn't this abstractum come out of the blue?*'. These questions overlook that 'initially nothing was' can also be read as 'initially the inconsistency of absence of being was'. The natural abstractum could not assert itself if it did not bear inconsistency. But the NPC (nature) asserts itself even if there is nothing. I will clarify this counter-argument further on.

equivalent when nature took off. The NPC may be expected to guarantee the truth just because we derive truth from consistency. Therefore, the natural equivalent of the meaning of absence of being may be expected to change to that of being of absence because of that which is true, subject and predicate may switch from their roles.

It may also be reasoned as follows: In the statement 'absence of stone' absence is not a property of stone. With the meaning of 'absence of being' this is different because 'presence' is one of the meanings that 'being' carries. The meaning present underlies that of being, as for example in the expression ‘it is sunny’, meaning that the sun is shining, the sun is present, as with ‘he is’, i.e. ‘he is present’. 'Absence of being' can thus be read as 'not being here of being'. This is an inconsistency when there is no 'here' yet, no space in either a physical or imaginary sense. A question that leads to more clear insight regarding this inconsistency is whether and then how, 'absence of being' can be read as consistent expression. If the expression ‘absence of being’ is written as ‘not being present of being’, it is comparable to that of ‘not being watery of water’ because ‘present’ refers to ‘being’.

The expression ‘not being watery of water’ can be rejected as meaning nothing. 'Ice is a non-watery appearance of some degree of freedom of motion of H_2O molecules’ is a statement that says more about water and wateriness if watery is understood as liquid. Starting from this definition of ice, if 'wateriness' is understood as 'liquid', the consistent expression may be written: 'In the transition of water into ice, the appearance of ice is accompanied by the disappearance of wateriness due to change in movement space of H_2O molecules'. By analogy one can write concerning beinglessness: 'In the transition from beinglessness to a state (the reality that nothing is) the appearance of the state is accompanied by the disappearance of absence due to change of X'. ‘Change of X’ here represents an analogy of 'change in movement space of H_2O molecules', an analogy which, if the meaning of absence of being is a *true inconsistency*, represents the efficacy of the NPC.

How can the efficacy of the NPC be understood by analogy to changing movement space of H2O molecules? The change of water into ice goes hand in hand with an extraction of energy from water. Change of appearance is involved with energy and therefore with force. Comparing this physical event with the efficacy of the NPC gives as a lead, a hint, that in the domain of the NPC an inconsistency could be a *counterforce* of consistency. Language use confirms this when we say that an argument derives ‘its force’ from the extent to which it contradicts existing views.

The transformation of *a true inconsistency* into a consistency is, seen as the efficacy of the NPC, the switching of roles of the subject and the predicate of which the inconsistency is composed. We may assume this on the basis of our apriorist view that the principle of consistency turns toward truth. If inconsistency is a counterforce of consistency, then this role reversal will have to be accompanied by force.

Proposition 4. The natural equivalent of the inconsistency of absence of being can be expected to harbor a force that incites change.

2.2 The force of inconsistency

How would a force inherent in the natural abstractum equivalently to the inconsistency of the meaning of absence of being bring change? The example of the tennis ball colliding with the wall indicates the course of an event more well-defined than the second example (walking the dog) does. Therefore, I will use the first provided example to clarify how beinglessness can possibly be transformed into a consistency. In doing so, I assume that this transition follows the stramine to which events in a physical system are subject.

When the tennis ball collides with the wall, the kinetic force is converted into that of elastic tension and an increase in the air pressure in the ball. This conversion, this first event (phase 1), is the undergoing of the kinetic force supplied by the tennis ball carrying this force. After the kinetic energy is converted, the elastic tension discharges and the air pressure recovers. The tennis ball then undergoes this discharge and recovery of air pressure: elastic tension and air pressure convert to kinetic force (phase 2). The events in both phases can be characterized as an undergoing of force. Phase 2 involves an undergoing of the result of the event in phase 1.

Reasoning by analogy, the natural abstractum equivalently to the meaning of absence of being carries force (in the case of the tennis ball, it is kinetic force) because of its inconsistency. The NPC represents the wall on which the tennis ball bounces. Kinetic force cannot exist at standstill. The force emanating from inconsistency is equally untenable from the point of view of consistency. Following the stramine of the event with the tennis ball while colliding with the wall, in ‘phase’ 1 the natural equivalent of the meaning of absence of being will first have to undergo the force it carries. Since this force is untenable it will have to be transformed. (I use the word phase here to refer easily to the event with the tennis ball and place the word in quotation marks because a phase presupposes time. There is no question of time here. For the same reason,

I will place the word event in quotes when referring to the domain of the NPC). Just as the properties of the tennis ball enable a transformation of force, by analogy, properties of the natural abstractum equivalently to the meaning of absence of being will have to do so. Assuming the inconsistency to be true, this transformation can, proposition 1 respecting, be reconstructed if in making meaning of 'absence of being' the meaning 'absence', other than what our signification tells us, is taken as a property of being. Precisely because the phrase 'sence' in the meaning 'ab*sence*' denotes (a) being, if absence is considered as a property of being, 'being' is denoted as 'pre*sence*'. After all, 'ab' cannot be thought without a notion of 'pre'. We could also say: giving meaning to 'ab' causes the meaning of 'pre' to be known. But that conclusion is quickly drawn here.

In the domain of the NPC, what could make the equivalent of the meaning 'ab' lead to an equivalent of that of 'pre'? How to understand the efficacy of the NPC here? Suppose the domain of the NPC consists only of equivalents of the numbers 1 through 7 and the arithmetic principle of addition. So a method of number generation is missing here. All possible outcomes by addition, assuming this limited ‘number knowledge’, then belong to the domain of the NPC.

Possible outcomes are, for example, 1+4 (representing 5), 2+5 (representing 7), but not, for example, that of 1+7. To calculate 1+7, a new number is required. But the number 8 does not exist in this domain.

In this domain, the predicates of the numbers 8 through 14 (7+7) exist because they can be derived from addition of the existing numbers, but not their subjects. This domain is, as it were, deaf to the outcome of a series of calculations that could be accomplished based on more 'knowledge' of numbers. That these calculations cannot be made is inconsistent with the fact that a (limited) number of other calculations can. To remove this inconsistency, the results of calculations unsolvable in its domain (the numbers 8 through 14) should be available to be *taken into* the domain of the NPC to eliminate this inconsistency. We may also say here that the results of calculations that exist only as predicates should be percepted to eliminate the inconsistency.

The word perception is in its Latin origin the fourth noun case of *perceptio* [the collecting, understanding, insight] from *percipere* [taking possession of the whole, receive, observe, understand], from *per* [by . . . through] + *capere* (in compounds *-cipire*) [take]. (Van Dale, 1997, etymological dictionary) So the word perception originally has the meaning of taking in. The other meanings of the word perception are related to the meaning of taking in. The meanings observe and understand can be interpreted in light of 'taking possession of the whole'. 'Understand' in Dutch translation is 'begrijpen' where the word phrase grijpen stands for 'grasp'. 'Observe' translated in Dutch means 'waarnemen' where the word phrase 'nemen' stands for 'take'. The above thought experiment indicates that the NPC gives nature the disposition to take in fully that which has already been taken in. This is the urge for perception of perception if the meaning of perception is understood as 'taking in'.

If in the domain of the NPC there is only the natural abstractum equivalently to the meaning of absence of being, then things are different from the example of 'limited number knowledge' because of all the predicates that can be posed then the subject is 'known'. This doesn't yet explain how from the natural equivalent of the meaning ab that of pre is 'deduced'. Similarly, from the word absent is not without more the word present to be derived. The compound expression 'absence of being' makes a derivation of the meanings pre and presence possible since in this compound 'being' and 'sence' are synonymous. This enables role reversal of subject and predicate. The contradiction inherent in the inconsistency of 'absence of being' makes 'being' an antithesis of 'absence'.

Role reversal of subject and predicate, resulting in 'being of absence', makes presence here assignable as a predicate precisely because absence is given a being. This role reversal is accompanied with force because, assuming proof of proposition 1, we may assume that the elements that make up the natural abstractum, equivalent to the inconsistency, repel each other. To the meaning of repulsion is inherent that of force, if not that of physical force then that of force as a metaphor of physical force. Because of this repulsion the natural abstractum here also harbors an equivalent of the metaphorical space we recognize in a distinction.

Since the inconsistency of absence of being also harbors a force to coherence (because of the synonymy of 'sence' and 'being'), the role reversal of subject and predicate in the domain of the NPC is an equivalent of warping the metaphorical space inherent in the inconsistency of absence of being and thus a moving toward each other of the equivalents of the meanings being and

absence. The force to coherence, as it were, is magnetic force that warps a spring. I substantiate the realism of this analogy in section 2.4 where I discuss Einstein's formula $e=mc^2$. The force that led to the role reversal, the force leading to bending toward each other of the equivalents of the meanings being and absence, here entails a disentanglement of the equivalent of the meaning absence, a replacement of this equivalent with that of the predicate presence. Bending toward each other of the equivalents of the meanings being and absence cannot lead to a merging of the equivalents here. Ab stands for away, denoting only distance. Absence ('away from sence'), therefore, in a 'retreat from the distance taken' can only lead to 'before sence'. A merging of the equivalents here would lead to a 'be as', (a 'being in being' like stone is, for example), and not to a 'be at'.
Since the equivalent of the meaning absence is taken as a property of that of being, could be suggested that in the domain of the NPC, in 'phase' 1 the transformation of the force of the inconsistency of absence of being, through role reversal of subject and predicate, resulting in 'being of absence', makes presence known because of the disentanglement of the equivalent of the meaning 'absence' by substituting ab for pre. 'Making the presence known of, noticing/observing' is a meaning of signaling. (Van Dale 1989, dictionary) However, there can be no 'knowing' here (should there be any knowing at all in the domain of the NPC) because the result of the 'event in phase' 1 (being of absence) is a predicate which has no subject yet. With the result, the inconsistency has not yet been removed. The subject of the predicate presence has yet to be taken in in the domain of the NPC. Therefore, a second 'phase' will follow.

'Phase' 2 cannot, by analogy to the event with the tennis ball, entail anything other than undergoing the result of the 'event in phase' 1, an undergoing that is a perception of perception, an incorporation/taking in of that which originated from the result of the event in 'phase' 1, the predicate presence. How should the expression 'perception of perception' be read here? If the expression is read as 'perception A of perception B', then perception A stands for the intake of what has already been taken (perception B). Perception A is the subject of the predicate for which perception B stands here (the predicate presence). Returning to the comparison with the spring: the warping due to the force of coherence (the 'event in phase' 1), results in a tension in the spring. What does the undergoing of this tension consist of? It consists, I will clarify, of the imaginary light that enables a representation and thereby the possibility of making meaning. In the domain of the NPC, the equivalents of the meanings absence and being stand apart. There is no homenculus in the NPC that distinguishes.

The ability to distinguish is given by undergoing the force of the tension caused by curvature of the 'spring'. (I will substantiate the realism of the equation of this force with imaginary light in section 2.4). It is the intake of the predicate presence and this tension (imaginary light) that make a cosmic subject appear on the scene: the subject of the predicate presence. Because the result of the 'event in phase' 1 derives a state of (primordial) being because it is an emergence from an 'event', perception of perception is an 'are at what is'. To be subject is 'are at what is'. [4] It is not the reality of, say, a stone, an 'are as what is', a 'being in being'. The result of the 'event in phase'2 can be understood as the origin of mind, a force that allows one to experience its own 'comings and goings'. That the 'event in phase' 2 results in consciousness, the cosmic subject's ability of imagination, may be assumed because the result corresponds to the ability of signaling

[4] To be conscious is to be subject in a world of predicates. This makes the subject-predicate distinction not only linguistic.

(making the presence known). The ability of signaling does not arise unconditionally in the mental system of the cosmic subject. I will discuss this further on.

Being subject includes here nothing but 'perception of perception'. This is not to say that in the resulting consciousness in 'phase' 2 the identity given by 'perception of perception' was already experienced as 'I'. The I experience is figured by the mental system itself. It does not belong inseparably to the subject experience. It's an add-on. The subject experience is not primarily the I-experience. Primarily it is 'being subject of predicates': be as perception of perception. [5] Thus (apart from the I experience), the consciousness of a subject is conceived by Nagel as something it is like to be that subject (Nagel, 1974). 'Something it is like to be' does not mean 'be what it is' or 'be as it is'. Rather, the expression covers that of 'be at/pre being'. The same can be said about Chalmers' designation of consciousness as 'phenomenal experience'.

In his making a distinction between awareness and consciousness as being two concepts of mind, he writes: "While one can see how the methods of experimental psychology might lead to an understanding of the various kinds of awareness, it is not easy to see how they could explain phenomenal experience". (Chalmers, 1996, p. 31) The identification in experimental psychology of perception with consciousness does not explain phenomenal experience, which is a perception of perception. Of this identification the Van Dale dictionary also attests in its giving the meanings of understanding and insight to the word perception. In the human mental system, a reflection of a perception is not always given. The phenomenon of perception deafness, the inability to take in what has been 'heard', allows the meaning of perception to be understood as not unavoidable related to consciousness.

It certainly does not always presuppose consciousness. Neither does the meaning of perception as 'taking in'. Perception by itself is, unlike the dictionary suggests, not a knowing in the sense of understanding, insight. Therefore, I consider it permissible hereafter to refer to 'intake of intake' as 'perception of perception'. Signalising is undergoing the intake of predicates given by the elements of a representation. Consciousness, phenomenal experience, is being subject of predicates and therefore a 'living' in meanings. Intake of intake does not give phenomenal experience if the intake does not involve meanings. We can build into a calculator an algorithm that makes characters of numbers and even detects the generation of these characters. Intake and detection of intake does not lead to phenomenal experience here because these intakes involve electronic signals which like stone are a 'being in being' and not a number, which is a meaning, a 'be at' and not a 'be as'.

[5] Descartes' dictum 'I think, therefore I am' clearly states that the 'I' experience is an add-on because in thinking, being the subject of predicates is already contained. Descartes dictum applies to the awake state of consciousness, a state that the consciousness of the cosmic subject initially had not yet. The dictum applies to the self-reflexive state of mind (which is primarily 'being subject of predicates'), a state in which perceptions return as though they were an echo. The echo brings the awake state of consciousness. I would be dreaming if I did not realize that a fantasy that comes up in my mind exists only in my imagination. I would then accept the fantasy as a reality that exists independently of my imagination. In Descartes dictum the 'I' experience makes undergoing signaling to understanding.

2.3 The spatial dimension of the natural abstractum

Etymologically, the Latin word 'abstractum' is the past participle of abstrahere (to pull away): 'abs' = away, 'trahere' = pull (Van Dale, 1997, etymological dictionary). The word ‘abstrahere’ is a product of ascribing spatiality to an abstraction (meaning). Based on the etymological origin, it can only be concluded that a meaning has a methaphorical spatial dimension. What can be said about a spatial dimension of the natural abstractum? The natural abstractum equivalently to the meaning of absence of being consists of two contradictory elements which, because of their contradiction, can be said to harbor mutually repulsive forces. A force in physical nature that tends to repel is not yet a force that creates space. Why might this be different for a natural abstractum? For now I find only one decisive argument that leads one to conclude that the natural abstractum has a spatial dimension.

The natural abstractum could not exist if the elements of which it is composed would not be separable on the basis of difference. Difference in meaning insurmountably has a spatial dimension in the metaphorical sense of physical space. Assuming proof of proposition 1, it may be assumed that the metaphorical spatiality which we recognize in distinguishing the meanings of absence and being has an equivalent in the domain of the NPC. I will refer to this spatiality below by naming it ‘metaphorical space’. Even though the same space is involved, I refer to the spatiality that we recognize in distinguishing meanings with the expression 'imaginary space' because with the emergence of the cosmic subject, metaphorical space is divided into two domains.

2.4 Representation and meaning

Just as the difference of meanings has insurmountable a (metaphorical) spatial dimension, a representation is insurmountably spatial. [6] Meanings are derived from representations. Hence the meaning of abstracting, isolating in thought, is that of drawing away from the concrete, which is to say ‘deriving from the form of a representation’. Derivation here implies a transition from the concrete (form) to the abstract. This transition gives rise to the thought that meanings on their own have a spatial dimension. For if a meaning by derivation leaves behind the imaginary space of its origin (a representation) and would thereby be deprived of spatiality, then what gives a meaning spatiality when it is transformed into a representation? Designating an intermediary here would amount to a conception of the NPC as homenculus.

May it be assumed that, as suggested above, an ability to make meaning already exists at the emergence of a cosmic subject? Does the science of semantics allow the emergence of a meaning

[6] In his summary of Kant’s philosophy, Störig writes about Kant’s understanding of space: "I can 'waive' (abstract) all the empirical, when I want to. I can think away from the rose its smell, its color and further properties. One thing, however, I cannot think away without making the representation itself disappear: its extensiveness in space. . . Space is thus the pure aprioristic representation of our outer senses." (Störig, 1972, p. 21-22, translated by author of this paper) Additionally, it can be noted that a representation also disappears when light is thought away. A form cannot be recognized without variations of light intensity, either physical or imaginary in kind.

here, since thinking in language is not yet an issue? The ability to make meaning can exist on condition that the cosmic subject has capacity of imagination. Speaks also discusses so-called non-mentalist theories of meaning, regarding language-independent meanings, including the theory of acceptance regularity. (Speaks, 2019) Assuming the theory of acceptance regularity, the emergence of a meaning need not always depend on a linguistic transformation of experience. An example clarifying this position in semantics is the statement that the meaning of the color red is already given in visual experience.

The meaning red is an acceptance, a direct adoption into the mental system of that which is concretely given in the representation. In the emergent consciousness the initial given imaginary representation can't lead to the phenomenal experience of empty space (the experience 'there is nothing') but only to that of 'nothing is'. (In section 1.5, I will substantiate this statement). Following the acceptance regularity theory the latter phenomenal experience does not have to lead here through meaning *making* to the emergence of the meaning 'nothing is'. Here the experience of the representation given is the meaning of it. This is not to say that meanings always arise in a direct sense from adoption of the content of a representation. A representation of two dots may lead to the meanings of unit and multiplicity if attention is first shifted from both dots to one of the dots and then again to both dots.

Abstracting/meaning making here involves an actual narrowing or expansion of the focal area within the imaginary space of the representation. A representation provides limited opportunities for meaning-making. For example, the representation of two dots cannot lead to the meaning of allness in the sense of the whole of what is given. The difference between one and two dots is that of more units and not of all units. New meanings can arise from new representations. In the next section I will elaborate what the efficacy of the NPC might be in the initial meaning-making by the cosmic subject.

2.5 What does the efficacy of the NPC consist of?

The concept of consciousness I derived from my analysis so far is that of a mental system. This system is, I will clarify, the workspace of the NPC. The purpose of my plea on this is to substantiate the assumption that the human mental system is also a workspace of the NPC. Making this assumption plausible requires a clear and correct understanding of the efficacy of the NPC. In the activity of human thinking, the principle of consistency seems to be an accessory of the mental system, an ingredient that can be picked up as a tool from the mental system's toolbox. When making a decision, this tool, as if it were a homunculus, seems to warn about inconsistent thinking or the threat of it. The NPC is not a homunculus nor does it belong to the equipment of a mental system. It does not act as a homunculus nor does it possess either imagination or a viewpoint from which it surveys the aspects of a representation and shifts our focus of attention from one aspect to another. Nevertheless, the principle of consistent thinking guides events in a mental system. But how? So for what other than a homunculus does the NPC

stand?

Better than as intermediary or homunculus, the efficacy of the NPC can be understood, in a comparative sense, as the lighting of pictures in a celluloid film. The pictures are not run in their order but selectively lighted. Light represents in this comparison the force of repulsion or attraction emanating from the natural abstractum. The content of a representation consists of the display of components of the natural abstractum, stored in the domain of the NPC as spatial gestalts. The components of the natural abstractum given in a representation are equivalents of already established meanings and representations, insofar as triggered by the NPC based on inconsistency or coherence of previous events in the mental system. Only 'pictures' that rhyme or contradict the content of an earlier thought or phenomenal experience are lighted in the imaginary space by the force of inconsistency or by that of coherence. We perceive these 'pictures' imaginatively and undergo their force. They represent our memory and the combination of 'pictures' given in a representation, may lead to a shift of focus of attention.

Unlike in the domain of the NPC, time plays a role in a mental system. Representations follow one another. Events experienced, events which would definitely be consumed by time if not stored, remain in the purely spatial domain of the NPC. If there were no storage and time would be an instantaneous transition from past to future, neither a present (a now) nor the experience of events could exist. Nor could the NPC be expected to predominate if an instantaneous transition from past to future would apply in its domain. In explaining consciousness, therefore, the phenomenon of time should not remain undiscussed. I elaborate on the meaning of time in section 2.2. My conception of time supports the idea that consciousness for its memory cannot do without 'nourishment' from the purely spatial domain of the NPC. The storage of events experienced differs from storing photographs in an album. Each 'picture' of an experience does not deviate from the phenomenal experience by the mental system of the event itself.

The difference between a photograph and a 'picture' of an event in the domain of the NPC, is that the 'pictures' are stored as gestalts. We remember an event because of the appearance of these 'pictures', gestalts, in our representation, insofar as they are 'lighted' by the NPC. We cannot extract from these gestalts, unlike we can from photographs, any information about things that were not addressed during the experience of the event. Based on photographs we took of the Colosseum, we could count its pillars. That is not how it works with a memory of the Colosseum because 'pictures' of events are stored in the domain of the NPC as the events were experienced. Unless we counted the pillars during our seeing of the Colosseum, we cannot ascertain the number of pillars from our memory of seeing the Colosseum. That the experience of time underlies the lack of information in memories, i.e. in the appearance of gestalts in the representation, I substantiate in section 2.2.

The 'pictures' stored in the NPC's domain after 'phase' 2 are: 1. the 'event' of perception/intake (the role reversal of subject and predicate of absence of being) 2. the predicate presence (result

acquired in ‘phase’ 1) 3. the ‘event’ perception of perception 4. The phenomenal experience 'nothing is' (result acquired in ‘phase’ 2). These ‘pictures’ do not relate consistently. In the domain of the NPC, the ‘picture’ of the experience 'nothing is', a meaning created by direct adoption of a representation, reflects only the ‘event in phase' 1 because this event, apart from the result had no being. So the ‘pictures’ 1. and 4. are consistent with each other. The ‘pictures’ 2., 3. and 4. do not relate consistently because in the experience ‘nothing is’ the predicate presence and ‘perception of perception’ are not traced as beings.

But they are beings by virtue of the result of the ‘event in phase’ 1 through which absence acquired a being. This gives not only the predicate presence but also the event ‘perception of perception’ (the intake of the predicate presence) a state of being. If the initional phenomenal experience were consistent then its meaning should be: 'presence and the subject experience (perception of perception) are'. The capacity of the mental system of the cosmic subject does not yet extend to the point where this can be grasped. The phenomenal experience here (‘nothing is’) is not yet a signaling, a making the presence known of the real existence of empty imaginary space. Although the subject experience is there, it is not recognized, which prevents the recognition of the real existence of empty imaginary space.

Assuming this inconsistency in the interrelation of the ‘pictures’ may be expected, assuming proof of proposition 1, that because of the force this inconsistency represents, the ‘pictures’ of the predicate presence and perception of perception are ‘lighted’ and exposed in the imaginary space. The ‘picture’ of the meaning/ phenomenal experience ‘nothing is’ is also ‘lighted’ although it does not appear as concreteness in the representation. This exposure replaces the original representation, which was perceived as ‘nothing is’, with a new representation. Since here the subject experience and the predicate presence in the domain of the NPC are formless in themselves, the imaginary light in the new representation can’t involve more than that of two faint lights. For the sake of convenience, I refer to them further on as ‘dots’.

Starting from the representation of two dots, what might do shift attention to one dot (which could result in the emergence of the meaning unit) and then what might do shift attention to both dots, which could result in the meaning multiplicity? From what can be inferred that the efficacy of the NPC is the trigger that shifts the focus of attention here? The dots in the representation give the cosmic subject for the first time the experience of presence as a ‘being outside’. As a result, due to a loss of force of inconsistency in the domain of the NPC, a loss of force due to signaling by the cosmic subject of the dots (the identification by the cosmic subject of presence as being) the dot representing the component of the predicate presence is placed in the background in the representation due to a weaker exposure. From the representation of the two dots, the meaning unit could not have arisen if one of the dots was nullified. The meaning of unit could not have arisen without the phenomenal experience of the presence of more than one dot. When calculating seven minus four, things are no different. We then do not nullify the count of four, but spare it, set it aside.

The NPC triggered the shifting of the focus of attention here. The transformation of inconsistency here leads to a shift in the focus of attention to one of the dots presented, an experience that gives the meaning unit through direct adoption of the experience. The emergence of this meaning, however, reawakens the force of inconsistency. For unlike what is recognized in the mental system, in the domain of the NPC presence is the oneness of subject (the cosmic subject) and predicate and is not a unit. In the mental system, therefore, the dot which represents the predicate presence lights up again. The expanding of the focal area within the imaginary space of the representation that this entails, leads to the emergence of the meaning of multiplicity. Just as the meaning of unit arose by signaling a difference between two dots and one dot, so here the difference between one dot and two dots gives meaning, even if not in language.

Once meanings have been given to the representation of the dots, which was a contiguous event, the 'subject being' will for the first time be recognized as 'I' because the cosmic subject experiences giving meaning to the representation. The recognition of subjecthood cannot possibly have been instilled in the mental system at the initial representation because imaginary space was not recognized as real existing emptiness. In a representation only form can make space experienced as reality in a physical or imaginary sense. So the experience to percept could not yet be recognized. Only the signaling of a concreteness, a form given in a representation, may have led here to the experience to percept, the experience of an I. Subject being, however, is not consistently experienced here. 'I' is experienced here as a unit, whereas in fact subjecthood is the oneness of subject and predicate of presence, the oneness of 'perception of perception'.

Therefore, in the existing representation of two dots, a third dot will have appeared. A dot representing the component of the natural abstraction equivalent to the I-experience. The representation of the addition of a third dot, thus given to the mental system of the cosmic subject, gives here, just because of its addition, the meaning of allness. The addition of this third dot does not lead to the meaning of oneness. The NPC is, as it were, not well understood here. Its efficacy should therefore not be understood in a mechanical sense.

3. The mental system in fysical nature

Unlike in a human mental system, in the domain of the NPC 'events' are not consumed by time. Seen in this light, physical storage of mental events in the brain would bring with it double storage. Another issue that deserves attention regarding the human mental system is that the accumulation of phenomenal experience of the cosmic subject may have been such that rules were designed to which the NPC conforms in its operation in a human mental system. One of these rules could be: in the conversion of light waves into physiological processes by the visual system of the brain, the subjective quality of the experience is that of the color yellow if the frequency of the waves is between x and y. The idea of the existence of such a rule presupposes

that the subjective quality of experience of the color yellow was already stored in the domain of the NPC. The quality of experience must then come from a world of experience that existed prior to the emergence of physical nature. In the next sections, I will address whether this option has sense of reality.

3.1 The riddle of the origin of fysical order

Physicists and astronomers engaged in a lively debate several decades ago about whether physical nature arises from a state that nothing is. The debate is relevant for answering the questions whether the predominance of the NPC in the absence of being may be regarded as the foundation of nature and nature may be understood in a more broad sense than physical nature.

The physical universe starts from a state called singularity because the laws of fysical nature cannot be applied to it. This singularity must have had an (extremely) high order but the order this singularity harbors cannot be interpreted by fysics. Nevertheless, it is believed that the singularity which preceded the start of the physical universe had structure, order. Where did this order come from? This question is evaded when it is stated that the physical universe was created from nothing and its origin is explained entirely by inflation theory. This opinion is challenged in the debate. "For, even if the total energy *cost* of the universe is zero, this does not imply that the universe 'starts' from an absolute void. After the initial singularity and before the inflationary expansion, there was a fluctuating and expanding vacuum field. Even if the average energy content of the field is zero, there is still a field with all its quantum fluctuations. A vacuum field may not be much, but it is something. This point is made with some force by Grunbaum, who is reacting to a claim, by the astronomer Bernard Lovell, that inflation theory allows us to say that the universe was created out of nothing". (Ray, 1991, p. 208; Grunbaum, 1989, p. 389-93).

The issue of where the original order of the physical universe came from is a mystery to physicists because fysical nature chooses to reduce order. Boslough quotes Stephen Hawking who phrased the riddle as follows: "If the universe is a place that is like a watch slowly running down, how, in the face of this natural tendency, did it get wound up in the first place? In defiance of the second law of thermodynamics, order has risen out of chaos". (Boslough, 1985, p. 102).

Physical order cannot just appear out of the blue. Hawking's riddle, it seems, can only be solved by explaining how the singularity, conceived as a nature that precedes physical nature, might have built order. A nature that starts with high order presupposes a nature that builds order. This prior nature cannot be physical because physical nature as we know it, breaks down the total of existing order. The physical nature we know can create order localy, however, only at the expense of the totally existing order. This leaves as a conclusion that our physical nature is preceded by a non-physical nature. After all, physicists cannot explain the origin of physical nature in a physical sense.

3.2 Time

The possibility that a non-physical nature preceded physical nature cannot be denied on the assumption that the phenomenon of time emerged after the Big Bang. Denbigh's philosophy on the phenomenon of time calls into question whether time is an exclusively physical phenomenon. Denbigh distinguished three types of time. Two of them can be characterized as properties of physical nature: cosmological and entropic time. Cosmological time is related to the expansion of the physical universe. The cosmological time direction reverses when the universe would shrink. The entropic time direction, the time direction in which the total order in the universe decreases, is not reversible and that also applies to the psychological time direction. Should the universe shrink there will be no firewood emerging from ashes and the psychological direction of time will not reverse either. Mental processes such as pronouncing an understandable sentence are not reversible. (Denbigh, 1981).

Therefore, time should not be understood unilaterally as cosmological or entropic time. Psychological time stands as a candidate for the origin of time in a non-physical nature because in this nature there can be no question of cosmological or entropic time. This raises the question of how psychological time can be explained. An answer to this question can be drawn from the experience of time. If we move a cup on the table, it can only be in the old place in our imagination, thanks to our memory. If in our memory the image of the cup in the old place were as powerful as seeing the cup in the new place, we would not experience time. We would see the cup in all the places over which it shifted.

We do not remember the cup passing all the places because we were only giving meaning to the shifting of the cup and paid no attention to all the locations it visited along the way. In the memory, because of this loss of information, the representation of the event is vaguer than what actually occurred when the cup was shifted. The difference in quality of what actually occurred and how it was experienced can therefore be understood as a cause of the experience of time. For the question of the origin of time, insight into our experience of time might provide more of an answer than we might expect from our understanding of the two kinds of time that can be derived from physical nature. The explanation given above of shifting of the focus of attention supports this idea. Shifting of the focus of attention is an event experienced in time. If the focus of attention shifts to one of the two dots presented, it is at the expense of attention to the complete representation. Not all attention can then be focused on one dot because both dots remain in the representation. The dot that receives less attention is overshadowed in attention. It does not disappear but is vaguer, weaker, which explains that shifting attention involves the experience of time.

3.3 Why did physical nature arise?

The initial arising consciousness, the cosmic subject, is not embedded in a physical nature. Regarding human consciousness, this embeddedness cannot be denied. A human being

experiences its body as belonging to him or her and spends on earth its whole life with it in a physical world. If consciousness arises originally from a non-physical nature then it is not self-evident that consciousness is produced by processes in the brain. On the other hand, the content of human experience depends at least partly on neurophysiological 'signals' and indirectly on the physical environment. These signals themselves do not produce phenomenal experience if it is so that the NPC by virtue of rules converts these signals into subjective qualities of experience. Rules that determine by which signals which phenomenal experiences are prompted.

That this is actually so would be proven by demonstrating that the emergence of physical nature is a consequence of the establishment of order within the domain of the cosmic subject. The line of thougt here implies that, with the emergence of a physical nature, the NPC could have become, as it were, subject to the will of the cosmic subject: in case X do this, in case Y do that. When we design a calculating machine we don't do otherwise and the machine will work if there are no inconsistencies in the design. The question here is what in the developmental course of experiences of the cosmic subject may have given rise to the urge for creation of the physical nature.

Should the mental system of the initially arised cosmic subject develop thinking capability then it is not to be ruled out, rather to be expected, that over time, when experience shows that thoughts only lead to circular reasoning, they give only 'old wine in new bags', the inspiration to incorporate representations into thinking may begin to lack. This lethargy might have caused that the stramine of a mental event, a stramine that cannot be interrupted here by a physical cause, was not fully followed, that is, the mental system came to rest before the threat of inconsistency was removed. If the NPC in its workspace (the mental system of the cosmic subject) cannot transform an inconsistency into consistency then a new workspace will be created because the NPC does not endure inconsistency.

In this case, the creation of a new workspace cannot be realized in the absence of being. This makes the new workspace part of the world of the cosmic subject. By the cosmic subject the new workspace will be perceived as a curious creature because it cannot interpret it as emanating from its own thinking and experience. Moreover, it cannot 'see into the head' of this creature, because it does not receive the presentations that the NPC imparts to this new creature. If the same fate of lethargy were to befall this creature, or to several emerged creatures, because inconsistencies cannot be removed in its or their mental system either, then a third generation of cosmic creatures could emerge. The creatures of the second generation can experience the existence and actions of the creatures of the third generation because they originate in their domain. For the initially emerged cosmic subject, the creatures of the third generation would be completely out of sight.

Seeing this drama coming may have led the cosmic subject and creatures of the second generation to create for the foreseeable third generation of creatures, a rules-based world that

blocks the emergence of inconsistencies. To protect a third generation of beings from inconsistency due to lethargy, a world could have been designed for them that protects against lethargy. Invoking the phenomenon of bodily mortality, as well as that of REM sleep, might have been intended goals in this design. REM sleep gives the NPC a free passage to have its presentations processed in the human mental system. The processing of presentations in REM sleep is not hindered by the perception of these presentations as 'perception', as is the case in awake consciousness. Therefore, representations during REM sleep might well be intended to inspire the mind, keep the mind going.

3.4 Einstein's formula $e=mc^2$

Mass harbors energy. The amount of energy can be calculated by multiplying the amount of mass by the square of the speed of light. Sunlight is given by mass. Mass is curvature of space. Does the relationship of the elements in Einstein's formula reflect the reality that arose from the inconsistency of absence of being? The natural abstractum equivalently to this inconsistency consisted of two components that are contradictory. The conception of this contradiction as repulsion gives this natural abstractum its spatial dimension, named above as metaphorical space. The natural abstractum also contains a force that inclines the two components of this natural abstractum to coalesce, a force that can be understood as a force of attraction. This force transformed the two components into a reality. Well, the metaphorical space encompassing the two components can only enable this transformation by curving, because coherence here can only arise by linking these contradictory components, i.e. linking the subject (being) to the predicate (absence). Only this linking gives the possibility of role reversal of subject and predicate.

Here the repulsive force of contradiction inherent in the inconsistency can be compared to spring force. The attracting force, the force that tends to bring coherence, can be compared to magnetic charge at both ends of a spring (read for 'spring': the metaphorical space of the natural abstractum equivalently to the meaning of absence of being) causing the spring to curve. The resistance to this warping, the tension it gives in the spring, is a force that did not exist before the 'magnetic charge' was given. What does the emergence of this tension stand for in this analogy to the warping of a spring? It represents the emergence of *imaginary light*, the light that gives consciousness the ability to discern and make meaning. Since perception of perception implies consciousness here (which presupposes imaginary space and imaginary light), in this analogy equating 'resistance to warping' with imaginary light is the only option if we assume that the forces of repulsion and attraction inherent in the natural abstractum represent the force of imagination of the cosmic subject. The tensile force remains constant once the ends of the spring are connected.

Although the background of Einstein's formula is much more complicated than that of spring force, the formula of spring force can be recognized in Einstein's formula. The question at issue

here ('Does the relationship of the elements in Einstein's formula reflect the reality that arose from the inconsistency of absence of being?'), can only be answered conclusively by showing that all the elements of Einstein's formula reflect in their relationship the primordial reality. To answer the question, evidence must be provided that the force emanating from the inconsistency of absence of being corresponds to that of spring force, and a relationship can be demonstrated with Einstein's $e=mc^2$. The work required to stretch a spring (w) can be calculated using the formula $w= ½ce^2$. Here c is the spring constant and e is the expansion: the length by which the spring is pulled out of its equilibrium state.

Thereby, c (the spring constant) represents the force of inconsistency of the natural equivalent of the meaning of 'absence of being'. The work expressed by the formula can be compared to the work in 'phase' 1, the work of reversal of subject and predicate of 'absence of being'. The work in 'phase' 2 cannot be quantitatively different from that in 'phase' 1 because it cannot entail anything other than undergoing the result of perception in 'phase' 1. The force at play in 'phase' 1 could not be transformed because perception in itself has no properties. So the force at play in 'phase' 2 stays the same, which gives a reason to assume that the amount of work in 'phase' 2 was as great as that in 'phase' 1. The work that the denting of the tennis ball represents is equal to the work of de-denting, the transformation into kinetic force. To distinguish the event in both phases, a difference in force can be noted here.

The difference is caused by the heat that the collision brings, so that the kinetic force that existed before the collision is less than the force after the de-denting of the tennis ball. In the transformation of the natural abstractum, no cause is evident for loss of force. So may we assume that the emergence of perception of perception and with it the ability of the mental system of the cosmic subject to make meaning, presupposes a duplication of the work in 'phase' 1. Energy is the ability to perform work. Therefore, the energy contained in the result 'perception of perception' is in analogy with spring force: $2 \times ½ ce^2 = ce^2$, a result that corresponds in structure to mc^2. [7]

This correspondence, suggesting that physical reality is a reflection of a nature preceding it, is supported by the fact that we easily recognizes in mass the concrete, form. In speed of light the factors of time and imaginary light can be recognized, factors associated with the ability of representation and signification. Signification brings with it the factor of time. These associations support the hypothesis that physical nature is a manifestation of a nature that precedes it. To my analysis, signification involves psychological time. The realism of Einstein's formula implies that the emergence of physical nature brought with it a physicalization of psychological time into cosmological and entropic time. Not only the associations with the factor c^2 do support the idea that physical reality arose by analogy to a preceding nature. So does the factor m. Curvature of

[7] The compression or bending of a spring can be caused by kinetic force. The formula for kinetic energy is $e=½ mv^2$ (e=energy, m=mass, v=velocity). Noteworthy here is that this formula brings the formula of spring force closer to that of Einsteins's $e=mc^2$ by introducing the element of velocity.

space gives mass and hence weight. Viewed this way, the work done in warping space is equally expressible by weight.

Well, the expression ‘absence of being’ names the same thing as the expression ‘nothing is’. Swapping the roles of subject and predicate would give here the expression 'nothing *ís*'. The accent would then be placed on the phrase 'is'. To give an accent is to ‘give weight’. The components of the equivalent of the expression 'nothing is' share together the ‘weight' of the force of the inconsistency of the expression, the 'spring constant'. If they be brought together due to curvature of their metaphorical space, then 'is' goes to carry weight of 'nothing'. The reverse is then also true.

3.5 The GNW and the efficacy of the NPC

In the GNW’s theory, within the workspace created by physiological processes generating consciousness, down-top physiological processes regarding attention somehow lead to top-down physiological attentional processes in the brain. Do physiological processes cause a transformation here? Does the mental system have tools for that? A shifting of focus of attention within the GNW workspace cannot be enforced by intention. Nor can the mental system enforce memories, e.g. if someone's name is forgotten.The elaboration given above in section 1.5 contributes to an explanation of the cause of the change-over from down-top to top-down attentional processes in the brain.

The GNW model is described by de Sousa (briefly summarized here) as follows. The GNW workspace arises as a result of neurons that send and recieve projections to or from many distant areas in the brain through longrange axons. Due to the activity of these longrange axons, a workspace is assembled for five categories of neural circuits, functionally specialized systems. These circuits involve perception, motor skills, memory, evaluation and attention. Information can only become available in the neuronal workspace if some of these circuits exhibit synchrony. The minimum conditions for accessing this workspace are: 1. Neuronal activation 2. Neuronal synchrony 3. Top-down attentional processes 4. Dynamic mobilization and amplification of the activation 5. Minimum duration of neural activation. Active workspace neurons send top-down amplification signals that boost the currently active processor neurons, whose bottum-up signals in turn help maintain workspace activity. (Sousa, 2009, p. 149-159) “The role of attention is central in the GNW, since attention is required for information to enter into consciousness. Roughly speaking, attention defines *which content accesses* the GNW *by blocking automaticaly* other ones”. (p. 150).

“Qualia are not apart properties separate from the brain or of the GNW.” (p. 163) To clarify this statement, de Sousa refers to the operation of memory-evaluating systems. “The register in the memory is unique and singular”. (p. 176) “The way we experience them [the quality of representations] will depend on our background knowledge stored in the memory systems”. This background knowledge is then explained as “evolved in responce to environmental constraints”.

(p. 180-184) De Sousa here undertakes a traverse from neurophysiology to evolutionary theory but does not answer the question of what it is all about.

For example, it could well be true that we humans use the color red as a sign of danger because for our predecessors, apes, the red sun setting foreshadowed night and thus danger. This does not explain the origin of the phenomenal experience of the color red. Moreover, it does not answer the question of where a functionally specialized system in the brain might find our memories. How our memories can be stored in the brain is a mystery that may never be solved if they are stored elsewhere.

If the human mental system is workspace of the NPC, then it may be assumed that memory storage takes place in the domain of the NPC and shifting focus of attention is a result of the efficacy of the NPC. The theory of the GNW is weak in its explanation of phenomenal experience and in its explanation of memory storage in the brain. The theory given in this paper on the efficacy of the NPC in shifting focus of attention urges, insofar as its realism is recognized in empirical research, to supplement the theory of the GNW regarding its explanation of top-down attentional processes in the brain.

3.6 Arguments of evidence

The main research question in this paper ('How can phenomenal experience be conceptualized as a natural product?') leads to the conclusion that consciousness is produced by the efficacy of the NPC. This conclusion is mainly based on the following arguments: 1. Since the origin of order in physical nature cannot be understood in a physical sense, it may be assumed that physical nature is preceded by a non-physical nature. 2. In this non-physical nature, the NPC stands candidate as the cause of the creation of a primordial being because the course of events in nature is guided by consistency and consistency in itself therefore cannot be a derivative of nature. 3. Since the thought of absolute absence of being involves a true inconsistency, it may be expected that, because cognitive ability shares with physical nature the principle of consistency, this inconsistency had a natural equivalent when nature started. 4. The concept of force is a derivative of a system's urge to maintain the system consistent.

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