HOW TIME PASSES

On Conceiving Time as a Process

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1. Real Change and Temporal Change

Time is a basic ingredient of the universe. It is the dimension of change. Change has two meanings, however. There is *real change* in the sense that world states differing in date also differ in structure or function; and there is *temporal change* in the sense that states having been future become present and then past. In physics, only real change is acknowledged. Accordingly, time in physics exclusively is the dimension of real change.

In experience, real change and temporal change are unified. We cannot help assuming the viewpoint of the now when undergoing experience. That is, we experience real change by being presented one state of the world after another. It was not until the advent of relativity theory that real change and temporal change were clearly distinguished. Relativity theory denies the possibility of universal simultaneity and thus the possibility of a universal now.[1] Without the now, there is no borderline separating past and future. Removing this borderline amounts to constructing a static universe, a universe in which the states we experience sequentially are given as one block. When given as one block, reality presents itself as assumed to appear in God's eye.

In the block universe, time does not pass. In this universe, time is reduced to a dimension of extension. The block extends in four dimensions. The four-dimensional block contains all the (states of) processes of real change. It does not contain the process of temporal change, however.[2] If one proceeds from the block universe, temporal change appears as something additional: as a process *supervening* on spacetime.

The conjecture that temporal change supervenes on spacetime agrees with the assumption that the now is subjective. For us, as conscious beings, the now is indistinguishable from the presence of our own consciousness. Consciousness conceived as mental presence supervenes on spacetime as traditionally understood. It is, nevertheless, related to processes going on in the brain. Those are processes of real

[1] On the exclusion of the now from physics see [2], especially p. 149, and [5].

[2] Hence, strictly speaking, there are no 'things' and 'events' in four-dimensional spacetime. The objects we experience as things and events are separated from their temporal environment in the sense that the states which are past and future are suppressed. Since, in spacetime, the difference between past, present and future does not exist as a difference in the mode of existing, there are no such qualities as 'thing-ness' or 'event-ness'. There are only four-dimensional trajectories encompassing the totality of states assumed by objects during their lifetime.

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change. In order to re-connect temporal change with real change, let us consider narrowing down the view of God's eye to that of human experience.[3]

2. Clock Time t and Duration t

The now, for us, is not a razor's edge. It is a 'specious present', spanning intervals in clock time on at least two levels (see [9]). There are lower-threshold *eigentimes* in the range of 10 to 30 milliseconds, and there is another threshold in the range of 1 to 3 seconds (see Atmanspacher and Filk, this volume). The lower thresholds have to do with the limited temporal resolution and sequencing faculty of our senses. The upper threshold is the interval spanned by mental presence. Since God's mental presence should be without inner centre and outer circumscription, the now of God's view should cover all time simultaneously. Narrowing down the scope of the now means slicing time into sections Δt, only one of which is *'presenced'*. The now thus selects a time slice of spacetime (i.e., a 3D + Δt hypermembrane) for being raised to presence while suppressing the *'presentification'*[4] of the rest. The section that is presenced would always remain the same if narrowing down the scope of the now were not connected with the initiation of a process. In fact, the viewpoint of human experience is constantly shifting along the axis where the time slices are arranged according to the relations of earlier and later.[5] Being thus put into motion, the lifetime of the narrow now is kept coextensive with the divine now even though the span covered simultaneously is reduced to the limit of perceptibility.

When the scope of presence is narrowed this way, what emerges is the image of a wave of actualisation rolling through an ocean of world states. This wave image combines a number of features characteristic of our experience of time. The image accounts for the impression that the now persists while the world states, including the inner (i.e., intentional) states of consciousness, come and go. That is, the image accounts for the impression that the now is in relative motion. It even expresses the feeling that the now is moving at a certain speed. Furthermore, the image helps us to understand why conceptualisation of temporal change is a notorious source of confusion. Both the impression that it is the now which moves and the impression that the now persists while travelling are inherently ambiguous. The impression that it is the now which moves is ambiguous since motion is relative: the now may be looked at as moving while the block is at rest, or it may be looked at as being immobile while the block is in motion [3]. The impression that the now persists while changing position is ambiguous since it is hard to distinguish this impression from an impression of continuous coming forth and vanishing of individual nows. Hence, the process compensating for the limited scope may be viewed in a confusing variety of ways.

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[3] The ideas that follow were inspired by [11].

[4] "Presentification" is the way Husserl's term *Gegenwärtigung*, a neologism, is translated into English in [6]. The English neologism is to denote "being made to appear in presence", or "being raised to presence"; this precise nuance is not rendered by the English word "presentation".

[5] Sequential order according to the relations of "earlier than" and "later than" has to be clearly distinguished from the sequence according to the properties of past, present and future. The relational order is stable in time whereas ordering according to temporal properties is continuously changing. The relational order is the B series, the temporal order is the A series according to McTaggart's classification. See [8], ch. 33. The temporal order is addressed when the term *temporal time* is used in the following. On this term see [4].

Nevertheless, the image is highly instructive with respect to the re-connection of real change with temporal change. The *eigentimes* involved in the specious present are intervals of clock time, Δt. They are intervals during which "nothing happens" for the system of which they are characteristic. These 'a-temporal zones' [9] or 'temporal non-localities' (Atmanspacher and Filk, this volume), as they are called, are brought forth by processes of real change presumably occurring in the physical brain. Atmanspacher and Filk hypothesise that this temporal kind of non-locality emerges in connection with the symmetry between the two directions of time being broken up.[6] According to this hypothesis, the experience of temporal change has two components that are accessible by empirical methods. The first one is the so-called arrow of time, the second one is segmentation of the block of states into discrete units. What is needed for the two components to become constituents of temporal change is a process by which one such unit after another is raised to, or highlighted by, presence.

Before proceeding further we should note that we are facing yet another source of confusion. Presence, for us as conscious beings, is the mode in which we are consciously aware. As mode of being consciously aware, presence is bound to the perspective of the first person. It would be premature, however, to conclude that presence is something brought forth by the individual brain. Just as well, presence could be a collective mode of existence in which individual consciousness is participating only (see Pavsic, this volume). We, as conscious beings, could be collectively surfing on the same wave of nowness[7] rolling through the ocean of states. If presence is something produced by the individual brain, it should be possible to detect a mechanism synchronising the individual processes of presentification. So far, no such mechanism is known. Therefore, the best approach to conceiving time as a process will be to find out how those empirical components can be combined with a first-person account of what happens when time goes by.[8]

It is here that the wave image proves helpful. It shows the now in its relative motion. Relative motion implies speed. In fact, we do have the impression that time passes at a certain speed. The dimension of speed is distance divided by time. The distance travelled by the now is distance as measured by a clock. The '*time*' that this travelling consumes cannot be of the same nature. Saying that it takes the now one hour to proceed one hour in clock time does not express speed. But is there a measure of time, τ, that is distinct from clock time t, yet capable of being related to it?

In fact, there is one. It is the *duration* we sense subjectively when we have impressions such as that the hour just passed was over swiftly or seemed to be never

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[6] On this point also see Antoniou and Suchanecki, this volume.

[7] I use nowness and presence interchangeably, thus underlining that presence is tied to the now, not to the here.

[8] In combining empirical findings with a first-person account of temporal change, the approach presented in this paper resembles that of Varela [10]. However, the approaches differ basically in focus as well as in the conception of temporal change. Varela focuses on the upper–threshold eigentime of the specious present, which is left out of consideration in the present context. Also, Varela does not distinguish between temporal change and real change. He assumes, or seems to assume - for he is not very clear on this point - that physical time is "an arrow of infinitesimal moments, which flows in a constant stream" (p. 112). He criticises this concept as inappropriate, his criticism relates to the "point-by-point, linear time depiction" (p. 134) of the flow of time, not to the fact that physics is ignorant of what we experience as flow. Accordingly, his suggestion is "to introduce, not points and lines, but flows, *dynamical* trends" (p. 134). Necessary as it may be to follow Varela's suggestion, this is secondary compared to making a basic distinction between real change and temporal change. Therefore, the approach presented here and that of Varela, although closely related in spirit, do not have much in common materially.

ending. One hour, as a measure of distance, is always the same by definition. What changes is the duration that it took the hour to pass. Yet, this duration is understood, more often than not, as just an imprecise measure of what is reliably metered by clocks. Clocks, however, measure processes of real change. By definition, the concept of a clock does not refer to the now. It only seems to us, as beings bound to the viewpoint of the now, that clocks are instruments metering the passage of time. Clocks do not measure the passage of time but translate distances in time into distances in space [1]. Duration, in contrast, does refer to the now. Our sense of duration is the sense that the now endures while the time slices being raised to presence come and go.

A first step towards describing time as a process will be to relate duration τ to *eigentimes* Δt.[9] Since those *eigentimes*, let us call them t_i, i = 1, …, n, mean that t, though seemingly continuous, is perceptually discrete, τ needs to be discretised as well. How to segment the now into discrete units, however?

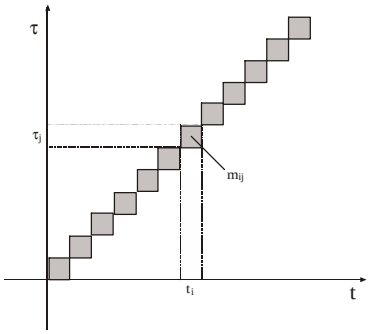

Figure 1a. The sequence of moments m_{ij} synthesising *eigentimes* t_i and quanta of nowness τ_j

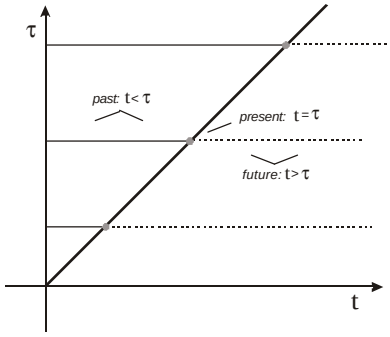

Figure 1b. The orders of past and future sweeping a plane and tracing the trajectory of the now

One way of performing this segmentation suggests itself by recalling one of the ambiguities mentioned above. The shifting of the now along the axis t is indistinguishable from a constant coming forth and vanishing of individual nows. This non-distinguishability has been noted since Aristotle (see Evangeliou, this volume). It means that the now may be viewed either way. The now may be viewed as the entity N that persists or as the sequence of quanta $\Delta\tau$ that is only giving the impression of a persisting now. In the latter view, there are individual nows, τ_j (j = 1, …, n) capable of being correlated to the *eigentimes* t_i. These quanta of nowness, though seemingly instantaneous, add up, when integrated, to the impression that the now endures. The metrics of $\Delta\tau$ is related to, but not to be confused with, the metrics of Δt. It is related in that some kind of biological clock is involved, but it is different in two respects: First, it allows the duration of an hour to be longer or shorter. Second, it cannot be compared inter-subjectively. Since for us, as conscious beings, the now is indistinguishable from mental presence, duration is also tied to the perspective of the first person. Duration, for

[9] In order to keep the argument as simple as possible let us define Δt as the lowest threshold, the fusion threshold. See Atmanspacher and Filk, this volume.

us, is a *quale* (i.e. a quality that only comes forth in the consciousness of the subject sensing it). I do not know and I cannot know whether the average duration of your hour is approximately the same as the average duration of an hour in my experience.

Whatever the metrics involved in our sense of duration may be, there are quanta of nowness capable of being ordered in an ordinal way according to the relations of earlier and later. This sequencing is sufficient for correlating τ and t as shown in figure 1a. To each interval of clock time t_i capable of being distinguished perceptually, a quantum of duration, τ_j, can be co-ordinated during which this interval is in contact with, or even interacting with, mental presence. The shaded moments m_{ij} are composed of the *eigentimes* t_i and the quanta τ_j fulfilling the condition $i = j$.

Equality of i and j means, in a term coined by A. N. Whitehead, presentational immediacy. It means, in terms of experience, that awareness is restricted to perception. Perception of what presents itself in the present is not enough for perceiving time, however. A conscious being aware of the present but without a memory cannot experience the passage of time. It just gets a notion of what is. Realising that the highlighted state is never the same requires some outside observer. The universal outside observer is God. Still we, as humans, do experience that time goes by. How do we, whose mental presence is restricted to the present, obtain the notion of temporal change?

3. Time Perception and the Constitution of Past and Future

The answer lies in the ability of distinguishing t_i from τ_j. The distinction need not be material in order to be effective. It is sufficient that a distinction in terms of time is established. Distinguishing t_i from τ_j in terms of time means escaping the restriction imposed by $i = j$. The equality $i = j$ can be escaped by leaving the present in one's imagination.

Leaving the present in one's imagination can be used for colonising the regions of time lying outside the present. Imagining what is non-present is the attitude we use when we interpret information available at present as witness of what is non-present. Recollection and anticipation are mental activities rooted in the present regarding the component τ_j, but roaming in the non-present regarding the component t_i. Recollection means that $i < j$, anticipation means that $i > j$.

Recollection and anticipation are not enough, however, to bring forth the experience that time goes by. A subject recognising things experienced earlier or anticipating things that are still to come can do so without perceiving time. In order to perceive time, recognition and anticipation have to be supplemented by (1) a constant record of the states lived through, (2) integration of the individual nows τ_j into a persisting now N, and (3) reference to the off-diagonal regions of the locus of possibility spanned by the axes t and τ.

(1) Beings who navigate through the ocean of world states perceive the passage of time by drawing cognitive maps of the regions through which they have travelled. Drawing a cognitive map of a temporal region means that the sequence of states lived through is recorded. It means, in addition, that those records are kept in order both with respect to the relations of earlier and later and with regard to the properties of past, present and future. Keeping the records in this kind of order results in a map that itself is in motion. The map, when updated appropriately, shows that each moment the totality of states still to come is moving closer to the present, whereas the totality of the states lived through are receding away from it. By being aware of this auto-movement, we

internalise the viewpoint of the outside observer of temporal change. The map re-presencing the past and pre-presencing the future exists in present imagination. Awareness of the movement of this map is the working substitute of the view from outside for beings whose viewpoint is bound to the now.

(2) The object constituted by realising this auto-movement is called stream of consciousness. In order to synthesise experiences scattered in time into a stream of consciousness, the quanta of presence belonging to the states experienced have to be turned into subdivisions of one and the same instance of mental presence. This synthesis, when accomplished, has two effects. First, the quanta of nowness that are coming and going melt into a permanent now that is moving relatively to the experiences made. Second, the experiences thus related to the now turn into constituents of the biography of a subject maintaining her or his identity as a conscious being.

(3) An event coming forth in a moment m_{ij} with $i > j$ is future, an event coming forth in a moment m_{ij} with $i < j$ is past. Since, for us, past and future do not exist except in present imagination events that are past or future bear two dates. They bear the date of their immediate occurrence in clock time, and they bear the index of the element of presence that is used for re- or, respectively, pre-presencing them. Events bearing two dates cannot be ordered in a single dimension of time. In order to maintain both the consistency of the biography and the identity of the subject, the states adding up to the stream of consciousness have to be arranged in sequence along t as well as along τ. Sequencing must take into account that each place in clock time t_i may be part of the past, present or future, respectively, of as many historical orders as there are quanta of nowness τ_j. Conversely, there is an individual order of past and future for each individual τ_j. Each of those orders is characterised by a unique division of time into past, present and future. Being themselves coextensive with clock time, these orders are arranged along the axis τ, sweeping a plane that extends in both t and τ (see figure1b).

We thus see that the constitution of time perception, the constitution of past and future, and the self-constitution of the subject maintaining its identity while itself undergoing change, are all different aspects of one and the same activity.[10]

4. Duration t: Another Dimension of Time?

The locus spanned by t and τ accounts for both the process of time perception and for its characteristic ambiguities. The plane contains the trajectory marking the progression of the now. This trajectory represents temporal change as a steady kind of relative motion taking place at a certain speed. The distance travelled by the now is in t, the "time" used for travelling is τ. The speed at which time passes is $\Delta t/\Delta\tau$, or, since duration varies locally, $\Delta t/\tau_j$.

The ambiguities this representation accounts for are the following. First, when temporal change is represented by a trajectory it becomes a question of resolution, i.e., of detail, whether the progression of the now appears to be continuous or discrete. Second, when setting up the co-ordinate system (t, τ), one has to decide how to represent the now. It may be represented by the origin of the system or as the entity shifting away from the origin. Third, although the plane containing the trajectory of the now is

[10] On the role of this self-identification in the constitution of the object realised in time perception see Vitiello, this volume, and Winkler, this volume.

two-dimensional, it helps us to understand why we take it for granted that time has one and only one dimension.

Transition from figure 1a to figure 1b means substituting the discrete case $\Delta t/\Delta\tau$ by the continuous case $dt/d\tau$. We have performed this transition when we are under the impression that the flow of time is continuous. We inadvertently switch back to the discrete case when we have the impression that the flow of time consists of a constant coming forth and vanishing of individual nows. Hence, the difference may be, at least in part, a question of scale. When focussing on the now microscopically, be it in introspection or experiment, the representation given in figure 1a is appropriate. When considering periods of time much longer than the intervals spanned by mental presence, figure 1b is representative.

The macroscopic view is relevant when we identify ourselves with recollected or anticipated states. This self-identification means that the states, though differing in clock time, are treated as presenced by one and the same instance of presence. By this identification, the series of τ_j melts into the identical now N. As soon as the now is identified as persisting, another ambiguity results. As an entity maintaining its identity while changing position in clock time, the now may be represented as shifting away from the origin of the co-ordinate system (t, τ), or it may be represented as the origin itself. In the first view the now appears to be moving while the block of states is immobile. In the second view the now appears to be the resting pole while the block is in motion. This ambiguity corresponds to the classical dualism of world views. When we proceed from an immobile block of states, a world view suggests itself in which temporal change changes nothing except the subjective impression of being in a certain state.[11] When taking the now as the resting pole, reality presents itself as a continuous process of creation and annihilation. In this view, each moment a state of the world is created anew only to vanish, thus giving way to the next act of creation. The first view is the Parmenidian one, adopted by natural science. The latter view is Heraclitian, characteristic of the humanities (see [3]).

The plane containing the trajectory of the now can be reduced to a single dimension in two ways. It can be reduced to the axis t by setting all components τ_j to zero; or it can be reduced to τ by setting all t_i's to zero. By reducing the plane to t, the historical orders representing past and future collapse into what they are supposed to refer to: the states making up spacetime. By reducing the plane to τ, everything capable of being localised in clock time is abstracted away. The axis τ, when taken as such, represents nowness as such: presence less the things and events presenced. Both of these reductions are highly significant. Reduction of τ to zero is the way in which the scientific world view is extracted from vivid experience. Reducing t to zero amounts to reducing the stream of consciousness to the pure state of awareness that plays such a prominent role in the eastern philosophy of Being [3]. A locus spanned by axes thus shown to be orthogonal is two-dimensional by definition.[12]

Both t and τ are static when taken in isolation. There is no passage of time before the states ordered in t are brought into contact with the presence represented by τ. Hence,

[11] The reason is that the concept of the block implies that it is determined in its entirety. Accordingly, it should be possible to eliminate τ without disturbing the block. By showing that it is possible to abstract from the now and yet leaving 4D spacetime perfectly intact, temporal change is shown to be an epiphenomenon. As an epiphenonenon the passage of time is a subjective impression to which nothing corresponds except itself.

[12] For additional arguments in favour of the two-dimensionality of temporal time see [4].

why should we not conclude that the difference between physical time and temporal time must lie in that the latter is two- instead of only one-dimensional?

The reason making us hesitate to draw this conclusion may be illustrated as follows. If temporal change is two-dimensional, the trajectory of the now, not only the plane containing past and future, should reveal itself to be two-dimensional. A test of the dimensionality of an object lies in scaling it. An object of dimension d should be divided into n^d parts if scaled by a factor n.[13] If we apply this test to the sequence of moments as depicted in figure 1a we see that scaling the process by a factor n renders n, i.e., n^1 parts again.[14] According to this test, temporal change is one-dimensional. The reason is that, as long as past and future are disregarded, only the elements m_{ij} with i = j are involved.

The off-diagonal elements m_{ij} with $i \neq j$ only begin to be filled when recollection or anticipation are colonising the plane. Recollection and anticipation are intentional acts, however. They are acts rooted in the present while referring to things and events that are non-present. Since past and future do not exist except in present imagination, the question arises whether τ, as a dimension, also exists only through being deployed in somebody's imagination.

5. Nowness and Consciousness

We are back to the question whether the now is objective or subjective. The existence of τ will be confined to the realm of imagination if the now itself is a subjective phenomenon. If the now is a subjective phenomenon, the temporal present and the presence of phenomenal consciousness are one. Accordingly, the process experienced in time perception and the process of perceiving time are one and the same. The wave of nowness, experienced by us as the passage of time, then is a way of phenomenal consciousness experiencing itself. Accordingly, τ then is the dimension that consciousness inadvertently makes use of or, rather, deploys when recognising itself in, or identifying itself with, states it recollects or anticipates.

What, if the now is objective? If the now is objective, τ expresses that it is always now, whether or not a conscious being is in the state of mental presence. Then, a time slice, i.e., a 3D simultaneity hypersurface (or hypermembrane if the positive diameter Δt matters) exists that is to be distinguished from the slices making up the block. It would be this distinct *actuality slice*, then, which moves through 4D spacetime. By virtue of this movement, each moment another *real slice* of spacetime is highlighted. In addition to the fact that it is always now, the dimension τ would account for the specific degree of freedom that this movement of a higher order is making use of.

Both alternatives are highly relevant for the study of consciousness. The *hard problem* confronting the study of consciousness is not how the brain is processing information, but how the phenomenon of mental presence comes about. This phenomenon has escaped scientific explanation so far. Why this is so appears in a new light as soon as mental presence is related to the temporal present. Both in the case that

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[13] To illustrate this: A point scaled by a factor n is divided into $1 = n^0$ parts; a line scaled by a factor n is divided into $n = n^1$ parts; a square scaled by this factor is divided into n^2, a cube is divided into n^3 parts, and so forth. A point is thus 0-dimensional, a line 1-dimensional, a square 2-dimensional, a cube 3-dimensional, and so forth.

[14] The test can be applied to the sequence of moments only. Since both the t_I and the τ_j are atomic, scaling the moments m_{ij} themselves would be illegal.

the now is subjective and in the case that it is objective there are phenomena related to presence that seem to be hopelessly inaccessible to scientific methods.

Assuming that the now is subjective means heralding an intellectual revolution. If it is consciousness, and consciousness alone, that makes time to go by, we must totally revise our view of subjectivity. In this case, subjectivity is far from being without factual power. On the contrary, phenomenal consciousness then is the most powerful thing there is. Compared with the force governing temporal change, the laws governing real change are mild. In contrast to the inexorability of the laws of nature, the inexorability of the spontaneous passage of time is not mitigated by advances in knowledge and technology. Whatever it may be that makes time go by, its rule is plainly overwhelming for beings who are subject to the experience of time.[15]

If the now is subjective, psychology has missed its main object until today. If, on the other hand, the now is objective, the notion of macroscopic reality awaits revision.[16] The simultaneity hypersurface moving through spacetime is of an *actuality* differing from the *reality* of the states making up the block. Or, expressed in other words, if there is a hypersurface separating the regions called past and future, there must be another distinct state, with a unique mode of existence. If the now is objective, both actuality and reality are objective modes of existence. In this case, consciousness is the ability of brains to participate in a mode of existence objectively supervening on spacetime.

Both the power of making time to go by and a mode of existence objectively supervening on spacetime have so far been out of reach for scientific explanation. It is therefore all the more remarkable that an account of a distinct simultaneity hypersurface moving through spacetime is put forward in the present proceedings. By means of an extended geometrical framework, Matej Pavsic explores the possibility of reversing the exclusion of the now from relativistic spacetime.

Whatever the mathematical intricacies involved, this reversal is a daring endeavour. It means envisioning the unification of the Parmenidian block with Heraclitian flux. Nevertheless, this unification is the format a theory would have to assume in order to

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[15] In the case that the now is purely subjective, even reality, understood as a collection of "res" (meaning things), then is subjective to an alarming extent. The things making up our common surroundings are constituted by presencing one particular state of the 4D trajectory and by suppressing the presentification of the rest. If this *cut of nowness* is purely subjective, 'thing-ness' and 'event-ness' are qualia like colour, sound, taste and - duration.

[16] It is tempting to speculate about a connection between the process of presentification and the process of measurement as understood in terms of quantum theory. According to quantum theory, the measurement process is the process suppressing, or minimising, non-local correlations to the effect that objects are separated from disentangled observers plus environment [1]. Non-local correlations are what so-called *entangled* states are made of. Entangled states are holistic; they lack the kind of separateness and distinctiveness basic to the existence of macroscopic, distinct objects with a particular location in space and time. Non-local correlations must first be suppressed before local objects and thus the things making up our common surroundings can come forth. Suppression of non-local correlations to the effect that local objects are constituted is what quantum theory conceives to be *measurement*. The cut singling out local objects by suppressing non-local correlations is metaphorically called "Heisenberg cut" [1]. It resembles the cut of nowness too closely for being left out of consideration when looking for an objective counterpart of the process we experience as temporal change. Even though the Heisenberg cut is primarily associated with the suppression of non-local correlations in space, there are indications that non-local correlations exist in time as well [7]. Is it thus conceivable that on-going measurement processes and the process of presentification are different aspects of one and the same holo-process? Might it be that the translation of entangled states into the things making up our common surroundings is bound to the now? In order to materialise, these speculations would have to identify a mechanism capable of sequentially actualising the measurements constituting the sequence of local states which we experience as the process of temporal change. So far, no such mechanism is known.

account for the presence of phenomenal consciousness. A theory venturing upon such an account will have to be bold indeed: it will have to be a theory of how it comes that time passes.

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