Title

Detecting deviations from random activity as indications of consciousness beyond the brain

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Summary

Our hypothesis is that when the consciousness of a person or group experiences a significant change in state, disturbances in the environment become measurable as detectable non-local correlates. We predict that in such periods all processes in the shared environment of the consciousness of the participating people show a significantly higher degree of non-local synchronicity and coherence. In initial research experiments we detected and quantified these synchronicities by finding common patterns in the data streams of at least one pair of Random Event Generators (REGs). Since a shared environment of consciousness goes beyond physicalist theories, a theory explaining the observations is proposed.

Our hypothesis is providing a breakthrough from the contemporary mainstream idea and belief that consciousness is "nothing but" brain activity (Dennett, 1991; Koch & Crick, 1990). Instead we propose that consciousness permeates and transcends space and time much like a "field". This is not an ordinary field but a field with implicit information that unfolds explicitly non-locally and synchronistically. Connected with the physical world, it manifests in, but it is not contained by, space-time. It is the carrier of meaning and relationships beyond and through local senses and awareness.

A description of the hypothesis

The context and the idea in brief

The definition of "consciousness" mainly focuses on the subjective sense of being aware of oneself and the environment. In some sense, it is the recognition of identity, or of the internal individual being, as compared to external reality.

Many ideas (hypotheses) have been proposed to explain the human perception of something that is difficult to communicate between different communities and cultures through a common accepted terminology. Thoughts, dreams and a diversity of personal experiences struggle to be framed within a theory that embraces many disciplines that are asked to contribute in a coherent manner.

Psychology, neurology, physics, biology, chemistry, theology, anthropology are just a few of the scientific domains that directly or indirectly approach a theory of consciousness from different points of view.

In this context, proposals for explaining the nature of consciousness are difficult to be tested scientifically.

The main reason is that when dealing with consciousness, the internal individual human dimension is involved and needs to be considered. The two main aspects that we have to take into account are 1) measurements of parameters of the human body and the external environment and 2) reports from humans that describe their feelings, thoughts or memories. The first aspect implies a neutral and objective detection of variables that the "hard science" community can embed in well accepted methodology and laws. The second aspect addresses a much lower confidence in demonstrating the

objectivity of the facts and usually is based on statistics or common characteristics of the reports. This is the case for many phenomena that often are referred to as paranormal, e.g. out-of-body experiences, remote viewing, precognition or near death experiences.

We can distinguish two main types of theories addressing consciousness.

A "materialistic" approach, mainly proposing consciousness as a "product" of the brain functioning, that is an emerging property of the complex interaction of the huge interconnection of signals within the skull. This approach is largely anthropocentric and based on different studies on the human brain functioning and theories of complexity. Some ideas invoke quantum mechanics to interpret characteristics of thoughts, language and perceptions of oneself (Hameroff, Penrose, 1996). We have to remind ourselves that there is no mathematical formulation of complex systems. Models of brain functioning are still struggling with a comprehensive interpretation of the emergence of thoughts, and that most of the proposals refer to advances in research results that will possibly come in the future. We are dealing therefore with speculations that are based on fundamental assumptions/hypotheses: consciousness is a direct by-product of chemical-physical processes acting in the brain, each individual consciousness is independent from other ones, there is no direct connection between different individuals' consciousnesses except for the communication through language (that includes all the involved senses). These hypotheses depend on possible future discoveries of yet unknown ways of communication to explain the evidence from a diversity of experiments dealing with the mental dimensions (e.g. OBE, NDE) and the validation of their theory.

The approach we propose is different.

We in fact start from different assumptions/hypotheses: **Consciousness is a dimension that is not dependent on time and space, each human body is acting as a sort of filter or – to use a more fitting analogy, since it is not about cutting away but more about selective reception from a field - as a tuner to access this dimension. When accessing the "one consciousness" we gradually gain access to delocalized information, and when we interact with the external reality through**

our senses we localize our identity in time and space (hic and nunc!). This implies that the brain is a part of the "human machine" acting as a tuner *to* and not the source *of* consciousness. This also implies that all living organisms are tuners at "different frequencies" and that the main variable we deal with is information and not time and space.

In this context, we identified experiments to detect the delocalization of the individual consciousness, enabling our theory to be practical and testable.

A scientific approach to identifying aspects supporting the idea

Reality in today's physics cannot be contained in space time and matter only. Nonlocality and contextuality in both quantum and classical physics prove essential for eventually establishing a new kind of s*cience,* that will consider wholeness as the foundation of reality.

This emerging new kind of science calls for a reappraisal of the limits of materialist reductionism. The study of nature ought to be complemented by the study of the nature of our study, bringing self-reflectivity (subjective consciousness) back to its equally fundamental role along with objectivity in nature. Breakthroughs in physics point way beyond its conceptual framework and sooner or later influence science as a whole. Ideas and paradigms can be both useful and a hindrance, which is why it is very important to remember and reflect on our assumptions and suppositions.

Radioactivity was such a major breakthrough 127 years ago, when Henri Becquerel made one of the most serendipitous discoveries in modern physics. Starting from a misconception about uranium phosphorescence (the ability of some materials to glow when exposed to sunlight) he accidentally discovered one of the most fruitful phenomena for the development of quantum mechanics in the century to come.

This anomalous phenomenon defied the then known laws of physics, as it was acausal, probabilistic and could not fit into any theoretical or conceptual framework at the time, nor could it provide any clues as to how it could be contained. Radioactivity was proven quickly to be the purest source of randomness. Nobody could tell, and still can't, when the next click will come exactly. Causality became probabilistic causality. The famous acausal quantum jump and the subsequent articulations of the Uncertainty Principle have become commonplace ideas by now.

Interestingly enough, it was radioactivity that was used as the source of pure randomness in the early Rhine experiments that aimed at establishing telekinesis as a legitimate scientific fact. Of course, progress was made and the dangerous radioactive processes gave way to other, easier to handle, quantum effects that guarantee pure randomness. As such they are not affected by outside environmental influences such as temperature, humidity and electromagnetic radiation.

For today's applications we use the effects of quantum tunnelling as sources of 'pure randomness'. For these quantum-based "Random Event Generators" (REGs) it has been repeatedly and significantly established that the only factor we can show that influences their behaviour can be (human) consciousness. Consciousness in all its forms has been shown to have an influence on REG data, but the influence is most significant when attention, intention and/or strong feelings are involved

The key for a successful measurement is a meaningful relationship or bonding between the REGs, the experimenter and the experiment. (details in the experimental section).

From Radio-activity to Random-activity we are now coming face to face with a new breakthrough that could well revolutionize our scientific framework once again.

This new paradigm shift has already been heralded by Rhine, PEAR (now ICRL) and the Global Consciousness Project. With extensive and prolonged experiments using quantum-based REGs, their results testify to the fact that consciousness manifests and influences matter from a source outside of space and time, beyond the material realm. They show that consciousness is real but not physical and its realm or emanation is via the objective and subjective realities at the same time.

So from radioactivity to "randomactivity" we have important evidence in breaking through accepted, and therefore often unquestioned, misconceptions and normative superstitions.

We regard consciousness as the source, the "field", and the glue that binds all things together. These bonds create plurality from a deep unity that brings forth all processes and even the "here and now". Therefore, changes in consciousness, in the tuner that projects it as an individual, would necessarily be affecting physical reality. Then, by using REGs which serve as detectors of this deeper unity's manifestations, randomactivity can be observed.

When we look at the evidence for events that can be related to consciousness (experiencing a feeling of connectedness, NDE, OBE, reincarnation), most of them are in the form of "reports", that is "stories". These stories are reported by people of all ages, ethnic groups, religions, cultures and in different historical periods. The surprising stability of content suggests considering those stories as non-exclusively subjective aspects of self-contained blocks of events related to certain processes in the state of consciousness. In some cases, the emotions and perceptions were reported by patients who were well monitored in equipped hospital rooms, and sometimes patients reported real events while their brain functions were diagnosed as absent and vital functions were assisted by machines. Other phenomena can take advantage of experiments in controlled conditions, where we can extract similar features suggesting access to de-localization of information (e.g. premonition and remote

viewing, Targ et al., 2002; Utts, 1991). With breathing techniques (Trivellato, 2017) and concentration or intake of substances (Sheldrake et al., 2001), some are also able to trigger this type of phenomena, including detachment from the body.

These results tend to be ignored or denied by "Western hard science", not considering that what is paranormal in one era might well be perfectly normal in another, like radioactivity and X-rays (Horgan, 2012; Durrani, 2000).

In this context, the study of the functioning of the brain has seen remarkable results that can contribute to addressing consciousness. During states of absence of consciousness, a decrease in activity of the so-called brain default network is usually observed (Raichle, 2015; DiNicola & Buckner, 2019). The default network is the network of connections that is activated when the brain interacts and acquires data from the external environment. It is the system that shows the presence of interaction and analysis of the brain through the senses. When the brain, voluntarily or not, "stops" receiving signals from the outside or processing them, it is unable to place itself at that moment and in that place. In practice, it loses its space time localization. The brain default network therefore seems to provide a measure of our state of self-consciousness located in time and space.

Our mind, composed of brain and senses, is a part of the process contributing to consciousness but is not the "machine" producing it. The human machine, depending on the different levels of the individual consciousnesses, is therefore capable of enabling a gateway to a dimension without space and time – the global consciousness field.

The hypothesis in more detail

Let's recall our main hypothesis in other words: **any identity (individual consciousness) in its condition of prevalence of mass and sensing the external material environment is localized in**

space and time and therefore blocked from accessing a spiritual reality (unified consciousness, that is beyond space and time). Consciousness is therefore not produced by the brain but the brain is contributing to accessing it. REGS can detect, via the deviation from randomness, the delocalization of individual or collective consciousness.

We need to introduce some definitions to make the hypothesis clearer. We define identity as the property of a series of connections between particles that allows a living being to operate in the material world in order intentionally to modify it. Therefore, identity is not a material object, defined by culture or humans, and positioned in a measurable place. We speak instead of living beings, capable of acting on the material world and capable of free will.

We have many material particles that are linked together through long-range correlations. When a living organism is generated, the genetic code as an initial algorithm begins its construction of the "identity" through interaction with the environment. The particles, with mass and therefore localized, have a link between them that defines their identity. This bond is described by a waveform integrated between all the particles, as is the case in entanglement, for example. This bond has an energy and correlations that characterize its configuration which we will call “identity energy”. Identity therefore could be described by a ‘waveform’ or via some wave function. Its binding energy and correlations do not have a material existence (Figure A). In principle, this identity cannot be measured directly through tools or models developed for the material world. We can only detect and measure the interaction of it with the external world.

The first implication of this model is that there is matter with "meaning". A living organism therefore has a sort of “network" of energy and correlations that establishes its identity as a concept of creation and invention, linked to the ability to influence the space-time distribution of mass through a massless quantity.

We therefore assume that there is a sort of energy that describes the order in matter, such as the energy that is needed to tie many tree trunks together to make a raft and therefore change its function. In

classical philosophy's terms that would be the efficient and final cause, responsible for meaning and agency, ostracized by science since Galileo's times (Basios, 2005; Goff, 2019).

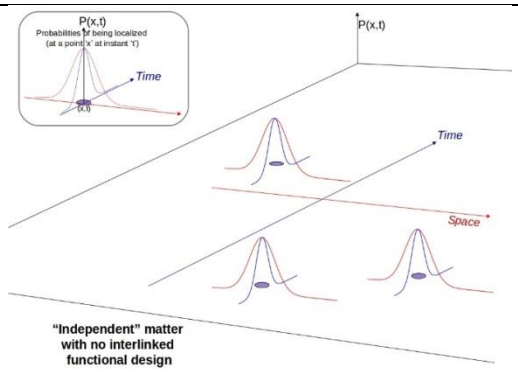

Figure A1

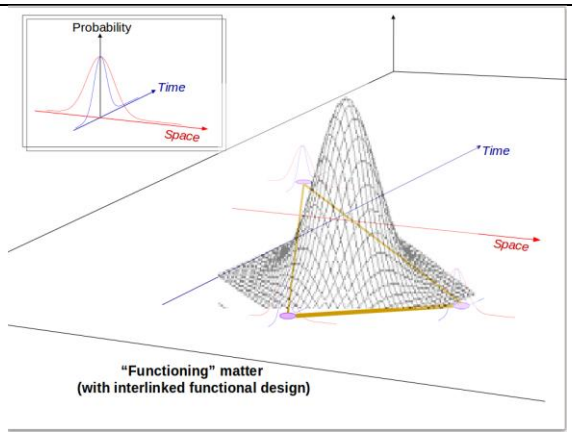

Figure A2

Figure A: each particle (purple circle) with mass has a probability, i.e. likelihood, of being located at a certain time and in a certain place, represented with blue (time axis, labelling the "when") and red (space axis, labelling the "where") bell-curves respectively. If there is no functional link between different particles, each one behaves independently (Fig.A1). If, on the other hand, their common genesis is underpinned by a design, a form, a "bond", or a function, the particles are linked by a functional "energy" that describes their identity (Fig.A2).

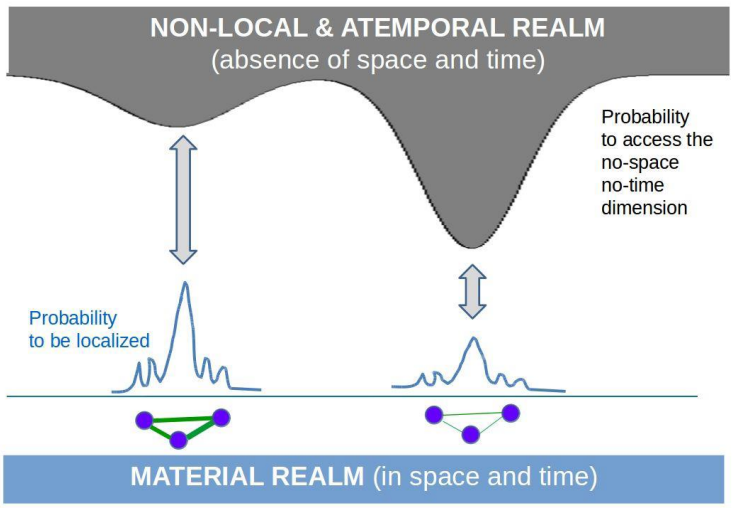

Figure B: Different components of matter (purpleballs) are linked by energy and correlations (green lines) which describe the underlying design for their functioning (entelechy). These links define the identity associated with a probability of localization in space and time (blue curves). When the energy of the bonds is reduced, this results in a change of the closeness of the localized structure which causes the probability of localization also decreases and that of being able to access the dimensions of reality without and beyond space and time increases (the black region). This provides access to more, or all, information beyond and leads to an increase of non-local phenomena.

Now, let's move on to reflect on phenomena/events such as NDEs, OBE, meditation, premonition, remote vision, hypnosis, death, and take figure B as graphic support.

Our atoms are structured together to make our body, and the whole system that composes it, including the brain, contributes to having self-awareness, thinking and interacting with the outside world. The external material world exists for us in a certain place and time. The internal world, on the other hand, can range. We have assumed this ordering structure of matter is associated with a form of energy that establishes the role, function or meaning of the design.

When the interaction with the external environment is high, that is, our senses and cognitive system are active in picking up external signals and processing them, we are fully present and localized. When the coordination energy of interactions with the environment decreases, e.g. during meditation or after death, our cognitive capacity expands (Lin et al., 2017). The individual "part" accesses the "whole". In practice, the less we know, in the sense of acquiring details, the more we know, in a similar way with which, in quantum mechanics, we reduce (or 'collapse') the extent of possible states when we observe (von Neumann, 1955).

As we loosen our identity embedded in matter, we access dimensions without and beyond space and time. Accessing these dimensions can result in a change of the material structure into the direction of a transformed order of self-organisation. This internal change has been often reported as leading to a restoration of balance e.g. in healing or spiritual transformation. Any essential change of this tuner results in a corresponding change of entropy which can be detected as deviation from randomness by REGs connected to the experiment. This connection can be established either by the intention of the experimenter(s) or by the closeness enveloping individual consciousness(es) and the REGs within the local context. In a simplified way, we can represent symbolically these material and immaterial realms through the projections (or shadows) of an object on different planes (see Figure C) signifying the application of different observation / description-filters to the object (Kostmo, 2010).

The death of a living being translates as the lack of the possibility of re-establishing the binding energy and correlation that makes the material structure localized in time and space. Death results in the impossibility of interacting with the material world "directly", thus we predict a drastic change of the tuner during the process of dying. We predict further that a similar magnitude of change in the tuners can occur if a group of people simultaneously and synchronistically experience a significant change in the state of consciousness.

Beside the death process, there is always a link between the material and the immaterial dimensions at every moment (Bohm & Hiley, 1995; Nadeau & Kafatos, 2001). What we consider identities

associated with our bodies are the projections in one time and one place of a wider simultaneous and ubiquitous unity.

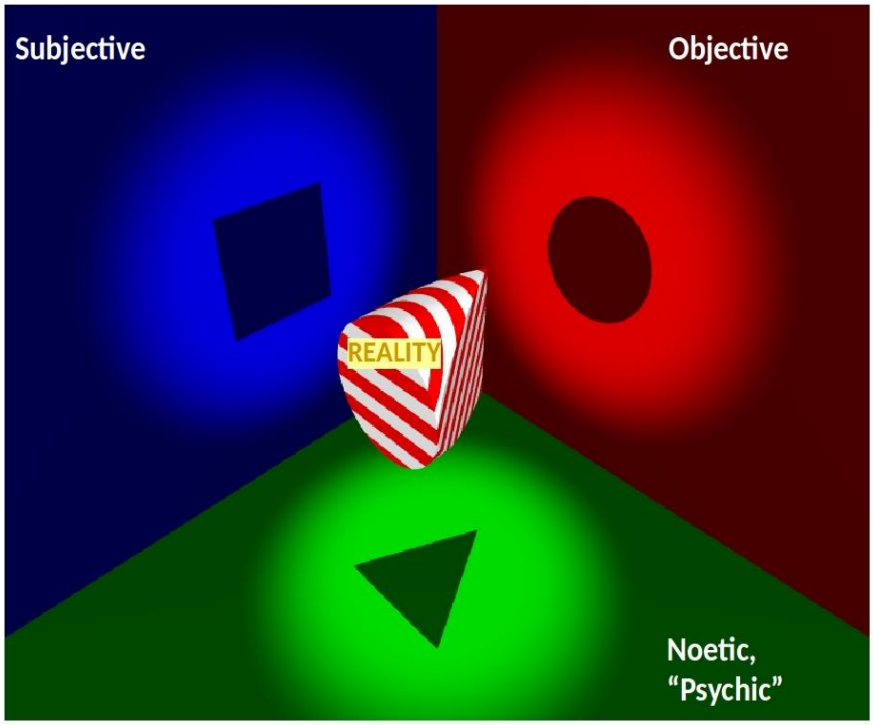

Figure C: A symbolic representation of the descriptions of reality (the three dimensional solid) according to the activation of different filters. The "reality" is projected on the different planes and shows its different aspects symbolized as shapes (information, out of time and space).

REGs, framed in the objective realm, usually show random distributions caused by phenomena ruled by the pure materially localized dimension. When the identity's energies and therefore the tuners of living organisms are changed, the capability to bridge with the other realms and access a delocalized reality is modified. As described above, such changes of states will be detected by REG's linked to these events, by showing a deviation from their typical behaviour. Our approach of using at least one pair of REG's allows us to extract correlations of non-local properties of consciousness. We introduced the usage of pairs of REG's, because only a pair enables observation of correlated patterns without introducing unwanted dilution effects. This setup has proven to be effective, which is why

we kept it. The additional information derived from correlated patterns enables us to precisely detect such changes of states as a sort of correlation of random activity.

Relevance of the hypothesis to the call

Our hypothesis is mainly proposing brain and body as emerging properties of the complex structuring of matter, resulting in the material part of a localized identity in space and time. This part is not only capable of projecting an individual conscious identity from the global consciousness field, but also has a capacity to widen or narrow its tuning to the global consciousness field. In other words, the identity is the projection of the consciousness field into the localized world as well as a tuner which is selecting a part of the full spectrum of "frequencies". If multiple tuners are involved, the degree of overlapping "frequencies" gradually allowing a common access to the consciousness field can be interpreted as "closeness" or distance inside the noetic space of consciousness. This "closeness" does not necessarily correspond to close distance in space-time.

Our hypothesis predicts that the greater the number of frequencies an identity can access or the emergent "closeness" makes accessible, the higher the number of non-local properties of the field of consciousness that appear. We leave it open how and to which extent this access can feedback to and direct the physical and mental processes of the localized identity itself. However, intention, meditation, ecstasy and death all change the structure of an identity and therefore the tuning of its filter of the unity. This widening or narrowing corresponds to an ephemeral change in entropy (information) to which REGs or multistable processes in general are sensitive. This makes the field of consciousness visible and detectable via an increased occurrence of its non-local properties.

We suppose that this effect is especially strong either when the filter is irreversibly widening during the process of dying or when it is amplified by a group of individuals, collectively and simultaneously changing the bandwidth of their own tuner, resulting in a collective gateway to the global consciousness.

Our hypothesis therefore proposes an interconnected noetic space as a non-local field of consciousness that can be accessed through the localized brain and body. If proven, then it is clear that the materialistic viewpoint of 'human as machine' needs to be abandoned or even turned upside

down. It is rather consciousness that is projected to the ‘machine’ in relating *to* and experiencing *the* material world in space-time (Jahn & Dunne, 1986, 2005; Radin & Nelson, 1989, Radin 2011, 2009). It remains interesting to further investigate the machine, but the great potential of research is to go beyond the brain and investigate this parallel ‘space’ and ‘field’ of consciousness (Wahbeh et al., 2022).

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The experimental proposal

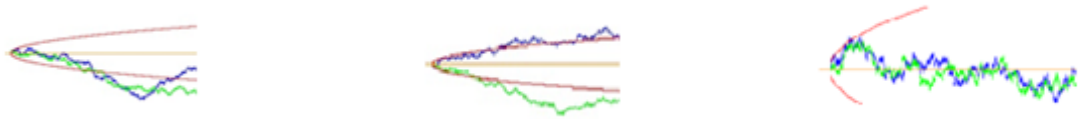
The rationale

As consciousness normally acts through our brain and body, it is not possible to clearly differentiate the environment of consciousness from the environment of the body in space-time using any classical or quantum measurements that detect purely local properties (Bennett et al., 2009; Durrani, 2000; Nadeau & Kafatos, 2001; Radin, 2009, 2011). However, it is possible to demonstrate the difference between these two by focusing on the non-local correlating property which is measurable by paired Random Event Generators (REGs) and varying the analysis to capture different types of correlations.

A clear, significant and repeatable non-local effect is the appearance of synchronous patterns representing different types of correlations in the novel setup of two separated and independent REG's that we use. Our hypothesis is that the statistical value of the significance of such patterns depends - beside the synchronicity and emotional intensity - on the relative closeness of the device in the noetic space of consciousness, not in the physical space of the participating parties.

Our measurement method automatically analyzes the streams of paired REGs (which we call oREGano device or OREG). We developed an algorithm which translates different types of correlation patterns between single REG outputs into z-scores, representing the statistical probability that the pattern did not occur just by chance. From those, a graphical "signal curve"[i] is calculated. This enables us to compare the results from different places and events more quantitatively and objectively. The algorithm searches for three different patterns in the cumulated deviation (cumsum) plots of the data of two REG's, which are shown in Figure 1 below. As each pattern represents a different perspective on a possible synchronicity the patterns are called "channels". Channel 1 and channel 2 represent a significant deviation from randomness at the same time of both REG's either in the same (correlated) or in the opposite (anti-correlated) direction, whereby the border of significance (z-score of 1.65) is represented by the red parabolas. Channel 3 captures the mean

minimum distance between the cumsum plots, whereby the deviation from randomness occurs in this case by both REG's being "attached" to each other for a significantly long period of time. Because the output in this channel is calculated using the mean value, its respective maximum marks the end of a significant period of data. We want to point out that this deviation from randomness is only detectable by using at least two REGs, whereby increasing the number above two would result into the introduction of an unwanted dilution effect. In this context our preference of not using more than two REG's has shown to be useful. As channel 3 is statistically independent from channel 1, a synchronicity can also show via a combination of these two.



Channel 1:	**Channel 2:**	**Channel 3:**
Correlated deviation from randomness	*Anti-correlated deviation from randomness.*	*Mean of the minimum distance between the two REGs' cumsum plots deviates from randomness. Its maximum represents the end of a significant series of data.*

Figure 1*: Different types of correlation between the random data streams as channels (1-3) by which deviations from randomness can be categorized.*

As the shape and therefore the significance of the cumsum plots depend on the starting point (segmentation), the search algorithm searches through all possible starting points to identify a certain

pattern. Thus per channel, for each data point, a starting point is calculated leading to a channel-wise segmentation of the data. Periods of purely random data (baseline data) show variable starting points, whereas data points belonging to a significant pattern usually share one (or two very close) point(s) in time as starting points. This leads to segmentation of the whole plot, driven only by the structure of the data. Such segments are illustrated in figure 2c as dashed lines. For each channel, applying this algorithm to two random data streams is transforming the data into a new distribution, which then in a second step can be transformed into a normal distribution. From this a graphical plot of z- and p (odds against chance) scores against time can be drawn, visualizing the time period and strength of anomalies in the data.

From a more metaphorical viewpoint the selection of starting points can be related to the selection of one among multiple stories embedded in the data. If we document consecutive and coherent events in a certain time period, e.g. during a ritual, we document a self-contained block of events or, in more simple words, a story. A story has a certain starting point, (emotional) highlights and often a certain end point. If a found pattern of the "signal curve" shares the start and end points of such a story and has interesting graphical properties like turning points, maxima or minima during qualitative highlights of a story, then one can assume that the found pattern and the story are correlated. In this framing we can reformulate the starting point selection in the following way: a data point can be part of many stories each represented by its own starting point. By selecting one starting point, the algorithm selects the one story for the data point which is most likely to be an interesting one. If many data-points share the same starting point (as it is the case with significant patterns), they are all part of the same story. From this perspective, in the following graphs, the dashed lines before a significant peak or period represent the starting point of a story and the peak or period the story itself.

The experiments

Our first proposed test is based on a series of experiments we conducted in the past three years, involving groups of people sharing a ritual that is deeply meaningful to them. As the results of this series is the base of our first hypothesis test, we want to give a short overview of our findings. The graphs below were all recorded by devices placed in the main seminar room during group seminars lasting for five days, whereby the first three days were a preparation for a certain ritual which the people carried out on the 4th day. This event then marked the "highlight" of the whole seminar. The analysis results of the event shown in Figures 2 a-2c are from an OREG which recorded during a highly dynamic group event oriented around a western self experience setting, whereas the graphs presented in Figures 3 were recorded during a traditional Tantra ritual, whose structure and techniques are centuries old.

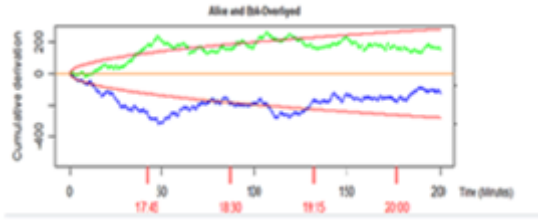


Figure 2a)*: Random data streams recorded during the event (cumsum graph) as segmented by the algorithm.*

Figure 2b): *Manual segmentation of cumsum graph.*

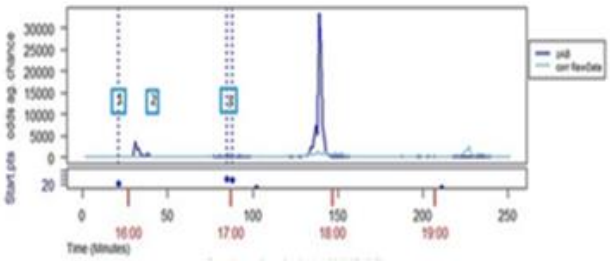


Figure 2c): *Qualitative analysis of peak deviations from randomness in channel-wise segmentation of the data streams (Channel 2 and Pearson correlation of random numbers). For channel 2 calculated starting points for segments represented as dashed lines.*

We will come to the latter in more detail later, when we present our proposed test in detail. The procedure of documenting stories during a seminar was always agreed with the group and the leaders of a seminar, and comprised taking written notes on program points and interesting moments by the documentation function of the software of the REG provider (Psyleron) and was done solely by the operator. A manual segmentation like the one shown in Figure 2b was done by the operator, whenever the leaders of the seminar announced the starting of a self-contained block of events. Picture 1a shows the output of the software for channel 2 (anti-correlated), before, during and after the main event of

this seminar. The height of the peaks represents the odds against chance value that both cumsum graphs of the raw data exceeded the parabola at the same time just by chance.Thus, in this case, the probability that the highest peak happened just by chance is approx 1:30.000. The three dashed lines represent the start of two stories. The first one belongs to the first small peak, and the second and the third one both belong to the main peak.

So from the pure data perspective, the story of the main peak starts at approx. 16:55 (4:55 pm) with its highest deviation from randomness around 17:55. The pattern of the raw data found with the average time of these starting points is presented in Figure 2a (cumsum graph). On the other hand, from a pure qualitative documentation perspective on the story of the seminar, three events were written down in this time period, presented as numbers in blue boxes in Figure 2c. At "1" a preparation practice for the main event started, at "2" the people took a break and at "3" the main event started. As these events had a fluent start and not a sharp starting action the width of the rectangles represent the uncertainty of the "real"starting time. Additional to these comments, a manual segmentaion was done at "1" and "3", wherby the latter one represented the segment for the main event. It can be immediately seen that the dashed lines representing the starting points of the "data story" are identical with the starting points of the "seminar story".For the main event, this easily can be verified by comparing the raw data pattern found by the algorithm (Figure 2a) with the pattern which showed up due to manual segmentation (Figure 2b). Also the heights of the peaks fit well to the scale of group synchronicity and emotional importance of the experience, which is expected to be much higher during the main event in comparison to a preparation practice. It is worth mentioning that during the whole 4 days period of the seminar, the main peak presented here was by far the most significant one. We were able to reproduce these findings at similar events.

Another interesting question shows up, if we think about the idea of a traditional ritual performed for a certain purpose. Traditional rituals follow a certain protocol to build up a very specific qualitative

experience which best fits its purpose. In other words, they try to reproduce a certain chain of qualitative events to build up an emotionally charged, deep and meaningful inner feeling which enables the participants to shift their tuner deeper into the global field of consciousness to achieve a certain purpose. In our framing, such rituals try to create a story as similar as possible over and over again by repeating certain fixed elements representing certain meanings or qualities. Thus we could explore if such similar stories lead to similar structures in the data even if the people and places differ. We were able to record the same ritual with different people in 2019 and 2022, wherby "same" means in this context that the structure and name of the ritual were the same.

In Figure 3 one can easily see that the similarities found in the data support the idea that similar stories reflect similar patterns in the data. Looking at the patterns we found, it can be seen that both show a significant correlated deviation from randomness (channel 1) as well as a significant small mean minimum distance (channel 3) (data not shown). If we take the perspective of the data story again, then both graphs show a long lasting and stable pattern, which is suddenly broken at the point marked by a blue arrow. It is exciting to look from the perspective of the ritual and explore if an action was performed at those times which ended a logical meaningful and consistent chain of actions. And indeed, exactly at the times to which the blue arrows are pointing there was the respective ending - in both rituals - each with a clear and short action.

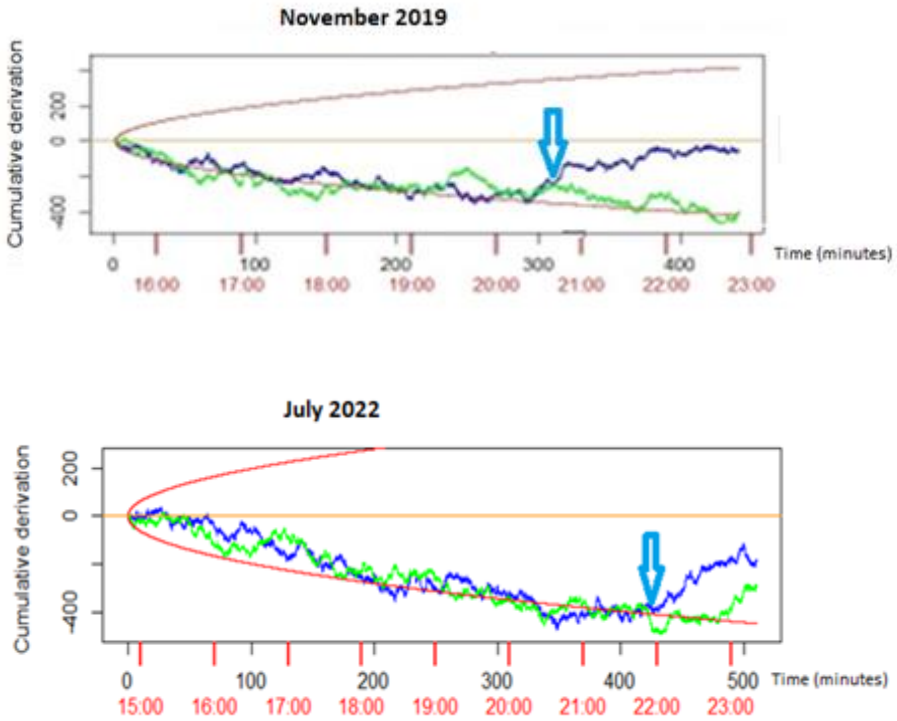


***Figure 2**: Random data streams recorded during two subsequently held strictly traditional Tantra rituals (according to ancient traditions) of the same type during two seminars in the years 2019 and 2022 (cumsum graphs as segmented by the algorithm). The blue arrows mark the ending point of each of the two rituals.*

Taking the points presented in Figures 2 and 3 together, we can assume that our method enables us to detect the starting time, the highlights and the end-time of emotionally charged, deeply, meaningful stories.

It is worth pointing out that the devices were always present locally in the seminar room, although the measurement method is purely non-local. Thus, it seems surprising at first glance that data correlated with a certain point in space-time were detected.

As in all our measurements the group was aware of and excited about the OREG, we hypothesize that the OREG was part of the direct environment of the group's consciousness. We predict that this produced a "second order (mental) locality", solely caused by the "closeness" of the device to the group's consciousness.

Taking into consideration that an important part of our (un)conscious identity, at least for survival, needs to be in correlation with space time, this idea would suggest, that as long as locality in space time and "closeness" in the noetic space of consciousness are similar, we live in the illusion that both are the same. To separate these two, we base our first planned experiment series called "The ritual series" on these findings and plan to systematically introduce remote devices into same or similar rituals (details below).

Our second test addresses the dying process, undoubtedly one of the greatest changes in the state of human consciousness. We investigate the possibility of detecting non-local aspects of death in an Intensive Care Unit (ICU) and in a Hospice. In the ICU, OREG devices were placed under the supervision and ethical guidelines of a team of doctors at a University Hospital in Spain (Basios & Moretti, 2020).

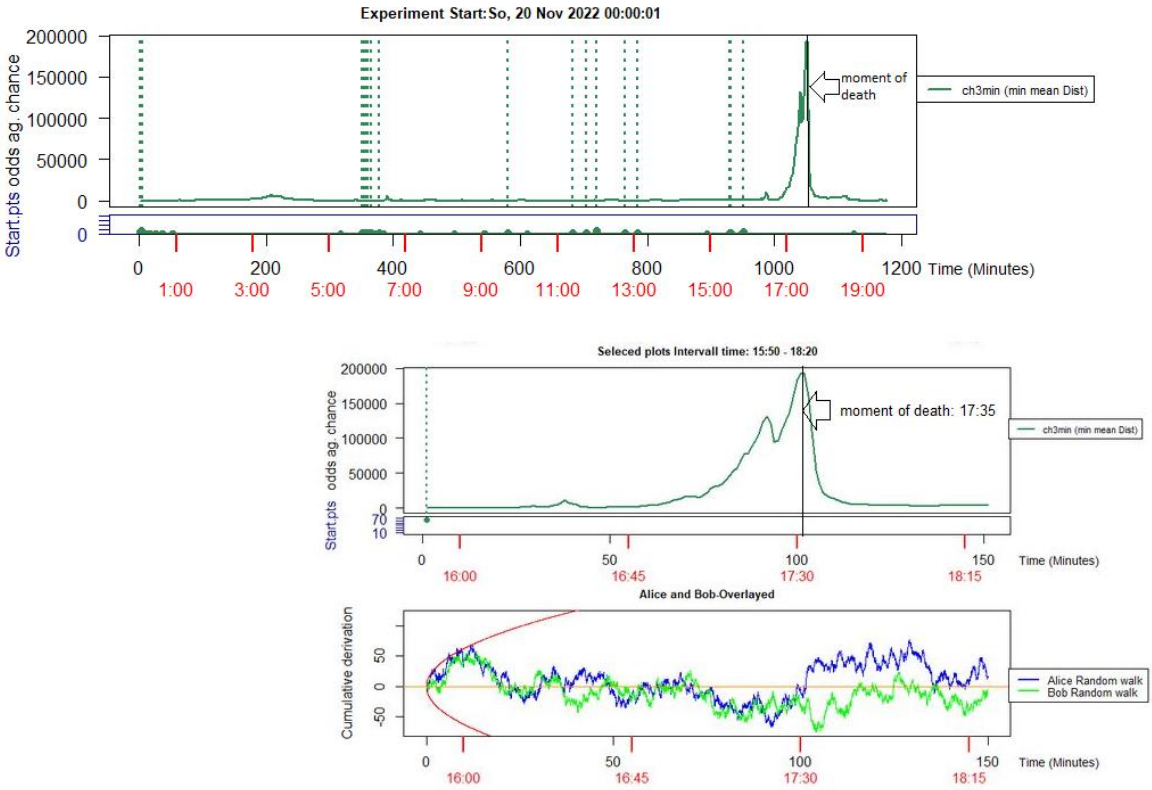


Figure 3*: Case of a death with strong "signal curve" from the cumsum graph. A strongly significant sign of an event in channel 3 occurred at the time when the moment of death was noted by the hospice personnel.*

For patients who were reaching the dying stage, an OREG device was placed in the same single room with the patient.

A second OREG was placed in an office room inside the same building without any relationship to the dying process and served as the baseline double-blind-control device. The patients themselves had no prior knowledge of the research, which excludes any influence coming from their intentions. However, to take part in this research series their relatives needed to sign a mutual agreement.

In the Hospice the OREG was placed in the circular central room, from which the rooms of the patients radiate in a hub and spoke formation. So far, the results from both places strongly support our hypothesis (an example of the Hospice is presented in Figure 4).

As in the example our OREGs detected the moment of death in nearly all cases with a time precision of one minute, which provides evidence - after approx. 30 cases - that death has a non-local purely consciousness related aspect. Here we predict that the connection between patient and device is caused by the “second order mental locality" driven by the doctors and nurses involved in the study.

The OREG’s response is quantifiable and repeatable, providing for the possibility of very detailed statistical and signal analysis studies that will shed further light on consciousness for scientific, post-materialist studies

Further steps

However, taking the ritual and ICU/Hospice data together, in both cases one could still argue that yet-to-be-discovered brain processes could produce non-local properties causing the effect. To exclude even this possibility and to further test our hypothesis, we propose a series of experiments involving OREGs that are hundreds of kilometers away but are brought via ‘connection rituals’ into different stages of ‘closeness’ to a ritual or a dying process.

To describe the connection rituals themselves we would like to use on the one hand the inner qualitative perspective and on the other hand the “surface” or outer perspective on the rituals.

It is in the nature of the subject, that for the success of a “connection ritual” the inner perspective capturing the phenomenology of the ritual is more relevant than the outer perspective describing solely its techniques and objects involved. However, to connect our idea of a “connection ritual” to published literature, we will start with the latter approach. Applying our model of a noetic space of consciousness permeating non-locally living organisms and enabling them to generate known phenomena e.g. in para-psychology, the first step of any effect involving a far-distant perception, communication or action is to close the distance between operator and object in the noetic space of

consciousness as well as possible. In the picture of our hypothesis this can be described as gaining as much overlapping “frequencies” of the involved tuners as possible. Only if this operation is successful can a connection be established and, as a second step, any kind of non-local action be performed. Thus, we hypothesize that practices like the well-known example of distance healing always comprise at least two steps, the first one being the “connection ritual”. (Dean Radin et. al, 2015)**.**

To create such a connection e.g. between healer and patient, it is a widespread practice that the operator uses objects like photographs, paintings or personal belongings related to a person or location. It is important to mention that the exact nature of such objects is not the important part of a successful connection, as it is just used as a representative symbol of the person or object which the operator seeks to connect to. The important part lies in the experience of the operator in knowing which kind of symbol works best for him or her to address the subsequent action to the right person or object. The time point of a successful connection is usually described qualitatively in terms like “I could feel the other person as if he/she were sitting next to me”, or “I become one with the person or object”, etc. We hypothesize that at the time that this “feeling” begins, what we call “an organizational closure” between operator and target is established and that the strength of this closure can be mapped inversely proportional to the distance (“closeness”) in the noetic space of consciousness. If such a connection should be established with an object like our OREG device, from an inner perspective, it is important to feel emotionally attracted by the object almost like to a person. To facilitate that, we will choose for each OREG device one out of a collection of different emotionally attractive emojis and colours and glue them to "subjectify" the devices. If not otherwise stated, in our setup we want to involve three different distant OREG devices sharing one location, whereby the device which will be connected to a ritual-or ICU/Hospice room will be chosen by throwing dice, and the other two will be taken as controls.

Using the logic of the second order locality described above, we assume that connecting the device with a room connects the device with any event going on in that room.

As described in more detail below, the “connection rituals” themselves will be performed by the operator of the experiment and in one case in the ritual series the group of participants will also be involved. In our team of scientists many have a long standing spiritual practice like meditation, traditional medicine or martial arts and therefore have the inner skills to perform such connection rituals. For the ritual series, we plan to involve two very advanced groups of practitioners of traditional Tantra, who already participated in past measurement series.

If a distant OREG device should measure events of a certain group, we assume that a group who is familiar and enthusiastic about our investigations, can together with the operator achieve an even smaller distance in the noetic space of consciousness than the operator alone. Thus, we expect a difference in the significance of the data between these two settings. As the operator cannot perform a “connection ritual” in the ICU/Hospice series on-site, it is necessary to slightly modify its protocol by reversing the direction of the establishment of the connection. Where in the ritual series the operator is “pulling” the distant OREG device into closeness with the ritual room, in the ICU/Hospice series the operator is “pushing” the device into closeness with the patient’s or Hospice room. This will be achieved by introducing a photograph of the ICU/Hospice room, where a local device is already present. The task of the operator, being in the same place as the OREG devices, is to connect a specific OREG device marked, as described above, by a specific emoji and color, to the ICU/Hospice room using similar inner techniques as in the ritual series. If our assumptions are correct, the distant and local OREG devices have after this “connection ritual” a similar distance in the noetic space of consciousness to the events in the patient’s room and should therefore respond with a comparable significance to the events there. The following combination of planned experimental setups should give a clear indication of whether our hypothesisis applicable or not:

A) Ritual series

We propose to measure the same type of ritual under three different conditions:

1. An OREG device is placed inside the ritual room, two control devices are measuring from far space-time distance. As in this case no connection ritual is performed, the far distant devices will run as control devices.
2. No OREG is in the ritual room, but the operator does a connection ritual to one of the 3 distant OREGs using a photograph of the device. The other two are running as control devices. All three remote devices will run at least 3 days before the ritual to collect control data, whereby the device which will be brought into "closeness" will be chosen by rolling the dice shortly before the "connection ritual".
3. No OREG is in the ritual room, but the whole group, including the operator, does a connection ritual to one of the 3 distant OREGs using a photograph of the device. The selecting and control run procedures are the same as described in setup2.

The 3 OREGs will have different emotionally attractive colors and emojis to make the connection easier.

We make the following predictions:

- Setups 1 and 3 will give similar results showing highly significant patterns following the events of the ritual. In particular, we expect to clearly see the starting and/or end times of rituals in these data.
- Setup 2 will show significant patterns, but to a lower extent than setups 1 and 3.
- In setups 2 and 3 the moment of the "connection" ritual will be visible in the data of the chosen device
- We expect for all setups that the control devices do not respond to any event in a ritual at all.

B) ICU/Hospice series

Besides the locally present OREG in the patient's or Hospice room a second device hundreds of kilometers away is brought into "closeness" to the patient's or Hospice room by a connection ritual of a remote operator, who shares the space time locality with the remote devices. The remote operator has a photograph of the patient's or Hospice room to facilitate the connection. The three remote devices will start to run at least three days before the connection ritual, and the device which will be brought into "closeness" to the events in the ICU or Hospice will be chosen shortly before the connection ritual by rolling the dice and the remaining two will serve as control devices throughout the whole experiment. In the case of the ICU a fourth device placed in a nearby office room can serve as a third control.

The 3 OREGs will have different emotionally attractive colours and emojis to make the connection easier.

We make the following predictions:

- Prior to the connection ritual, the data from the chosen remote device will show no synchronicities related to any of the events in the ICU or Hospice.
- The moment of the connection ritual will be visible in the data of the chosen device.
- After the connection ritual, the data of the chosen remote device will be synchronized with the processes in the ICU or Hospice and will show at least the moment of death of a patient with similar precision and significance as the device directly placed inside the patient's or the Hospice room.
- The two control devices will show no synchronicities with any of the ICU events or the connection ritual.

[i] Since there is almost certainly no classical signal-generating process involved, but the algorithm is translating the anormal correlations into z-score "signals" the curve generated from the z-scores is here called "signal curve". The name is chosen to distinguish the graphs drawn from data on anormal correlation as analyzed by the algorithm from the original cumsum graphs.

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