

Just an extra dimension...

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Before studying a phenomenon, whatever it may be, science requires it to be tidily put in a carefully labeled drawer. The reluctance to acknowledge the reality of Near Death Experiences (NDE) in both medical and scientific worlds is linked to both their complexity and their spiritual aspect, as well as to some recurring oddities that do not square with the consensual knowledge corpus by which they could be classified one way or another.

The use of accounts for media - or sometimes ideological –purposes neither helps to put minds at rest nor allows for a calm approach to the issue at hand, and the first victims of this are of course the experiencers themselves, who often dare not evoke their experience for fear of being misunderstood, or sometimes even treated for psychiatric problems.

If these experiences are to become honorable research subjects, then they must be considered in a first stage without any reference to mystical connotations -- a source of potential confusion and rejection.

By putting forward the issue of the possible survival of the soul or consciousness, these experiences have been promoted by the Media in such a way as to attract maximum public attention. It may yet be a while until we can find the solution to this issue and contemplate it with any certainty, nevertheless, the accumulation of accounts and the coherence of their contents raises questions about the relationship between brain and consciousness, whose continued existence in conditions where cerebral functions are for the least altered – if not impossible – is in my opinion one of the major questions of this study.

The variety of viewpoints expressed in the *Journal of Near Death Studies* as well as the work produced by the team of IANDS -France (to be found in the collective volume *La mort transfigurée*, published by Mercier E-S, 1992 and in the association's *Cahiers Scientifiques*) have shown that there are numerous ways of seeing these experiences, that possible interpretations abound and that the questions overwhelmingly outnumber the certainties.

The possibility -- and necessity -- of dealing with these experiences from the standpoints of many different fields and specialties have resulted in the segmentation of the subject, thus barring the way to a necessary overview of it.

However, for the time-being it is obvious that the experience taken as a whole, the search for its signification and for its existential, philosophical and transcendental implications cannot be studied with the same apparatus or concepts as its characteristics – triggering off, similarities and differences with other experiences of the same type, perceptive and emotional characteristics, ability to think and decide, awareness of the experience, of oneself, of the environment, secondary effects, etc. – which all are indications of the ‘behavior’ of the consciousness in anomalous conditions and which, as we will see further on, can lead to implications going well beyond the ‘mere’ scope of NDE.

One of these perceptive particularities is distinctly interesting, in spite of the experiencer's difficulty in explaining it: that is the simultaneous perception of a scene from several viewpoints.

Numerous accounts include the notion of 360° vision: among such cases, one person reports having simultaneously “seen” forward, backward, above and below as well as left and right. Our visual field is indeed limited by the optical characteristics of our eyes, however, the present case being that of perception without their aid, it may be understandable that perception should cover all spatial directions, even if this causes interpretive difficulties regarding the cerebral areas concerned.

Yet there is a fundamental difference in the case we are interested in here, in which everything happens as though perception were coming from all spatial directions simultaneously. Let’s take an example: in the case of a ‘360°’ perception, the experiencer will describe everything around him, in all directions including towards floor and ceiling, in what may be called a spherical panorama view.

In the second case, he will, for example, describe the bed on which his body is lying, but simultaneously seen from several points in space... if trying to draw a picture of the scene, the only possibility for him will be to draw several sketches, to include front and side-on views as well as views from above, below, etc.

It is precisely as I was hearing the account of a experiencer who was trying to make me understand how he had been able to see himself from all directions in space that the initial idea of this article occurred to me.

A few necessary precautions...

In order to offset the somewhat unorthodox content of the following lines (and in the interest of public health !), I would like to make a few preliminary remarks that strike me as necessary when dealing with such a subject.

First of all, the word ‘consciousness’ will no doubt recur in the following lines, so I shall immediately give a personal definition of it in relation to our present preoccupation. I first contemplated ‘what is and is aware of being’, but being aware without possible interaction surely must turn out quite monotonous in the long run. I therefore chose the following definition, more closely related to the content of this article: ‘what perceives and is aware of perceiving’.

Any scientific research must be based on the most solid ground possible, which is no easy task as far as these experiences are concerned. Therefore making progress in this matter requires caution and wherever possible the use of clearly defined concepts in order to dissect, as it were, NDEs from every angle our present knowledge allows, and finally present an overview of it.

This is not to say that these experiences should at all find their explanation within the scope of today’s ‘acknowledged science’. It may well be admitted one day that they do indeed overstep that scope – which is precisely what makes them interesting -- and are no less honorable a research subject for all that, however, the promotion of wider research must be based on the most solid foundations possible.

Nevertheless, in order to further our understanding of NDEs, speculation must be allowed –not to say recommended – that is provided one is aware of doing so and respects the dividing line between what can be demonstrated and proven, what can reasonably be inferred and may yet become demonstrable, and lastly, what can be conjectured or even envisaged despite the current absence of definite proof.

So it is essential to carefully discriminate between the various aspects of the experience, and to know which standpoint one speaks from so as to allow for research on what is already within our grasp and to permit speculation on what is presently beyond our understanding. Doing so should avoid the problem of ‘ initiate circles’ where everyone talks

around the same thing in a common jargon that generally includes rather vague and widely accepted concepts, thus readily suggesting one is dealing with exact scientific facts rather than a mere consensus, hence leaving the door open to all sorts of misconceptions

Such a risk should be avoided by the repeated use of ‘everything happens as though...’ or any other similar phrase in unlimited quantity.

In order to report as many facts as can be drawn from the testimonies, I will attempt for the time-being to sketch an oversimplified theoretical framework which should help produce the overview mentioned above. Indeed these accounts often include disturbing and currently unexplainable facts as well as equally peculiar perceptive characteristics that obviously belong to NDEs and cannot be ignored.

On the one hand, the usual mystical or paranormal interpretations bring nothing new to the matter except a few additional labels. On the other hand, there are as many psychological or psychoanalytical interpretations as there are schools, none of which in any case seems to consider these facts as real but as the result of mistaken interpretation or as the restitution of unconscious phenomena or mechanisms by the ‘consciousness’.

Let me clearly state that the model I will present here is of speculative nature and must be understood as such. However, it allows me to build a coherent, non-reductive and above all non-restrictive framework within which NDEs – and altered states of consciousness in general – may be studied from the widest possible angle as it is conceived to bring together a certain number of facts and incomprehensible characteristics within the current scope of knowledge. Should it prove worthwhile, I shall endeavor to develop it so that it can be validated or not by ulterior research.

Here, then, is a summary of problematic facts:

- Perception of an environment, in the broad sense of the word, manifestly without the help of the sensory organs—numerous accounts could be corroborated according to which the experiencer was physically unable to have perceived what he reported.
- Similarly, unexplainable factual reports –the most prosaic example of this being the story of the shoe in the hospital gutter, but there are others, for instance the cases Michael Sabom specifically studied (Sabom, 1982) who reported having witnessed their own resuscitation and were able to describe the movements of the intensive care unit staff and even the operation process of a defibrillator.

Many experiencers have been able to give an account of what they perceived during their experience, and in most cases their story has been confirmed afterward. Of course skeptics can object that there is always a possibility that they could have heard what was going on.

But one of the most disturbing clues of the actuality of perceptions during a NDE is the fact of learning something during the experience, something for example as complicated as a surgical intervention, as in the following example ...

In 1965, abortion was prohibited and strictly repressed in France. During a clandestine surgical abortion, Mrs. C. had an experience that changed her life:

“I felt myself hovering five feet above my body... I had a global perception of everything that was going on, I was able to hear and see everything.(...) It was at that point that my experience became very interesting, as everything was explained to me. I was very interested by the surgeon’s practice. It was quite unintentional, but I learnt the way he conducted the anesthesia and the curettage, the curettes and other instruments he used ; I learnt his own way of working. (...) I am catholic but a poor church-goer, and I knew that the Vatican was against abortion, nevertheless I felt that God was supporting me. I had this feeling that God accepted abortion, and that women needed some help. (...) And now I know how to practice a curettage, I know it’s possible to make it in an apartment, I know that God is not against it. (...)

After that experience, a woman asked me to help her, then another one, and during a certain period of my life I practiced several hundreds of curettages in exactly the same way I had seen during my experience, without the smallest problem. I always did it with the purpose of helping women”..

- Unilateral or bilateral communication –again, in the broad sense of the word – without the help of the organs normally used for this purpose.

- Recurrent cases of perceptive specificities :

Non-visual ‘global’ perception, identification with the object or the environment observed, 360° perception, the impression that the observed objects are seen in their entirety by transparency, simultaneous perception of a scene from several viewpoints, lighting which defies optical laws, non-verbal communication, perception of sounds without an operational auditory system, confirmed perception of the participants’ thoughts, etc.

A little while ago, I wrote about an experiencer who was lying on a bed when he lived a NDE-like experience (he was just doing relaxation, and wasn’t in a near death situation).

He tried to explain to me:

“It’s very difficult to explain, but I was able to see the bed and my body simultaneously from all directions. I could see the top of my head and in the same time I saw my left and right sides, and the bed from below and from above, and all the room like that, I was everywhere at the same time, you see? ”.

As I had some difficulties to “see”, he dashed off several sketches, front and side-on views as well as views from above, below, etc.

Another experiencer, who was comatose when he was admitted in the hospital by night, so he wasn’t able to see anything at that time, told me:

“ I was surprised to have a 360° vision. I could see at the same time in front of and behind me, my sight was simultaneously a distant and close one.(...) I was able to see through objects. I could see all the operating room, and in the same time under the operating table, where I found an inscription: “Manufacture d’armes de Saint Etienne”.(...)Behind the wall, I have seen a bicycle garage, and outside a vast garden. Another surprising fact was that I could “read” the thoughts of people. I heard their words before they pronounced them. (...) Someone passed out and I knew that before she would fall down”.

All these facts have been verified afterward and confirmed.

When answering to the questionnaire I gave him, to the question :”did you have the impression of seeing an object or a scene from several viewpoints simultaneously ?”, he wrote:

“Yes, and it is the fact of completing this questionnaire that made me remember that, although I had forgotten it. I was able to see simultaneously from the ceiling and from the floor”.

Perhaps another fact could be of some interest : The first time he has been interviewed for the french television, the emission was scheduled exactly the very day and hour when his experience took place 51 years before....

- Disturbed notions of time and space, which seem inadequate or wholly different, in any case difficult to describe.

- Access to a kind of universal or unlimited store of knowledge, as reported by numerous experiencers.

- Diverse experiences of seeing one’s life unfold: in sequences, reliving important or key events, life unfolding entirely in a few moments or without any notion of time or duration, etc. Seeing one’s life flash before one’s eyes seems different from a standard memory in that it is often seen from an external viewpoint, ‘in perspective’. Many elements

that do not belong to a normal type of remembrance are associated to it, such as the experiencer's emotions but also those of the other protagonists, the perception and understanding of the ins and outs of every act or decision as well as the perception of their effect on the people involved. Everything happens as though the experiencers perceived their life not from their personal viewpoint but from one that takes in the context and those present.

- Access to future events in one's personal life during or after the experience and later confirmed. This is to be distinguished from 'prophetic visions' concerning the future of humanity, which do not appear to belong to the same category.

- Frequent synchronicity following the experience --Jung defines the concept as follows: 'Synchronicity first means simultaneity of a certain psychic state with one or more external events which appear as significant parallel elements in relation to the subjective state at a given time and, possibly, vice-versa.' To put it plainly, there is synchronicity when similar events share a coincidence in time and are linked to the subject's preoccupation with their signification, without being causally related. We shall see some examples of this further on.

If the frame doesn't fit...

How strange this all is! What is Science to make of such accounts? It is obvious that these curiosities do not fit in the usual framework, so should they be stored away in the 'supernatural' drawer-- along with alien abductions, trivial conversations with a deceased uncle via a Ouija board and the Loch Ness monster – which may later provide us with the delicious shiver of the unknown and of unsolved mysteries that help us bear the cruelty of the world while hoping that one day things will change ?

Or shall we produce bad science – i.e. scientism – in which case the easiest thing would be to ignore every disturbing and unwelcome fact so as to conscientiously go on studying the neat and respectable ones, each from their very own narrow viewpoint?

Another possibility would be to examine these things one by one –for they are after all both frequent and troublesome – and with sufficient intellectual contortions finally produce a reasonable and scientifically acceptable explanation for them like cerebral disturbances, hallucinations, reconstruction of reality, protection of the self, and so on and so forth.

We can also – yet how naïve! – adopt the theory that if hundreds of people tell the same story, there just may be some truth in it! Perhaps even all of it may be true, who knows? But then, why doesn't it fit in the darned – and by all means coherent -- framework, or paradigm if you prefer big words?

99% of the technological gadgets in use today didn't exist 50 years ago and would undoubtedly have appeared magical or supernatural then. I deliberately used the word 'naïve' above, because I will now consider that all these phenomena that threaten the neat organization of our vision of the world are indeed real, even though no frame has yet been found in which they would be coherent.

Here is not the place to expatiate on the progress we've made in our knowledge of the universe -- from the infinitely small to the infinitely big -- but you have to admit it truly has evolved somewhat in recent years! We could consider that what is strange today may well be integrated in the wider vision of tomorrow's world.

...let's widen it!

From my spotty teenage years I remember a certain apparently insoluble math's problem the half smiling teacher once gave for us to solve. He obviously intended to teach us something, but what?

When after a few minutes' reflection the anxious face of the class's smart brain started relaxing, his features enlightened by a sudden gust of understanding, nobody else felt reassured. 'He's just had a bit more phosphor than usual for breakfast', the class's collective unconscious thought as we saw him hastily scribbling down the solution and then looking perfectly bored, waiting for us ignoramuses to admit our defeat after half an hour of pointless cogitation.

It turned out that the solution was in fact quite simple, so we understood when the teacher asked Charles-Edouard to go to the blackboard. 'It is really child's play', he said with an ever so slightly patronizing look as he proceeded to write down the terms in light chalk strokes. 'Taken as it is you can hardly find any solution to it', he went on, 'but if you just change the frame of references everything gets simple.' The first curve he had drawn had looked like an advanced stage of pregnancy with a pointy bit on the upper left-hand side but it now became merely parabolic, centered on the y-axis.

Child's play, indeed.

During the first period of my work with IANDS, I tried to understand what phenomena could trigger NDEs (Jourdan, 1994). By looking for common points with other similar experiences that may be called transcendental and can be found in all mystical traditions, I realized that practically all these traditions used specific psycho-physiological techniques in order to trigger off such states. Many of these techniques relied on breath control, on the use of rhythmical sounds or on certain types of dance, and all shared the same goal, that is to restrain the field of perception and to turn consciousness inward rather than outward, while reducing conscious mental activity as much as possible. Meditation and other similar techniques have the same aim and though they use different means, their results are often analogous.

The point all these techniques have in common on the neuro-physiological level is that they can probably induce a specific rhythm on the cerebral level – especially on the hippocampus level, a key zone for the transmission of sensory information—that is a specific rhythm liable to bar the way to sensory information (Jourdan, 1994).

It so happens that a certain number of experiments carried out with a dissociative anesthetic called Ketamine whose effects disconnect the sensory paths without fully putting the patient to sleep, have led to experiences that have several things in common with NDEs (Collier, 1972, Korramzadeh & Lofty, 1973).

Karl Jansen presented another important point in his hypothesis about the release of endopsychosins by way of cerebral protection (Jansen, 1990). Indeed, if for any reason cerebral anoxia occurs there ensues a high risk of massive release of glutamate, a neural mediator allowing a quick passing of information, which is very useful for sensory information.. Unfortunately, this neural mediator becomes toxic if released in too big a quantity, destroying its target neurons in case of "overdose". Endopsychosins could prevent it from affecting the neurons by connecting with the glutamate receptors (NMDA), but also collaterally blocking all transmission of information, somewhat like the wrong key can jam a lock.

Jansen thought he could explain the life review so frequent in NDEs thus, as according to him, sensory disconnection allowed memories to come back to the forefront of consciousness. I believe it goes much further than that and I even think that sensory disconnection is in fact the *primum mobile* of NDEs, in which a high risk of cerebral anoxia logically triggers off neural protection mechanisms. Such a mechanism most probably lies at the origin of similar reported experiences (Lempert T. & al, 1994) with loss of consciousness due to either vagal

syncope during which brain irrigation is seriously reduced or loss of consciousness during acceleration in the cases of fighter pilots.

So we are faced with a series of experiences that have features in common with NDEs, whether they be spontaneous as in the last example mentioned or triggered off by psycho-physiological techniques as in mystical traditions or by a drug such as ketamine or by an organic reaction to extreme physiological conditions.

What really matters is that they all have something in common. They seem to be made possible by the disconnection of sensory information and more generally speaking by the fact that conscience is cut off from its interaction with the physical world. That is the first important point. It has not been irrefutably proved and it is not intended to explain NDEs but simply to account for the phenomena that allow them to take place. We can now speculate on its logical implications.

First of all, the multitude of accounts given seem to agree on one point. Indeed, accounts of experiences in extremely varied circumstances tally:

- Diverse accidents, cardiac arrests, drowning, etc. in which one may presume that the brain suffers from hypoxia (lack of oxygen) and hypercapnia (excess of carbon dioxide)
- Also cardio-circulatory accidents taking place during surgical intervention when the brain is not only in hypoxia and hypercapnia but also saturated with diverse drugs and anesthetics
- Finally what are often known as Fear Death Experiences, i.e. similar experiences to NDEs but caused by fright or by a real and imminent risk, without actual trauma – for instance when a seemingly inevitable accident is narrowly avoided.

Hence, this logically brings us to consider a few hypotheses :

Somewhere in the brain might exist a zone that is totally protected from anoxia and any toxic influence and that remains functional whatever the circumstances. In this zone the condemned self could therefore live out its very last short-lived fantasies. Logically this zone should be able not only to generate fantasies, but also to allow the subject to be aware of them and to memorize them – these two functions being for the least complex and requiring a certain ability in processing. In any case, this could only be a wholly ‘inner’ experience and could not account for the unexplainable contribution and memorization of information demonstrated by all the relevant accounts. Not to mention the way accounts match almost regardless of the culture, religion, gender or age of the experiencers, which would imply something like genetic – not cultural – transmission of fantasies.

- We may wish to open our eyes to the following facts :

While the triggering off of these experiences may seemingly be attributed to a phenomenon of isolation of the consciousness from the cerebral structures that usually allow it to interact with the ‘external’ world, **their process and contents remain similar in extremely varied conditions of cerebral functioning.**

So if these experiences do not depend on the physiological and functional state of the brain, everything happens as though NDEs do not take place in the brain.

- Then again, things could well be even more complicated than that... But please be patient and we will see about that later!

If you can hear music even though the batteries of your radio are flat, the chances are the sound is coming from elsewhere— as far as the notions of here and elsewhere have any meaning in these circumstances, a point we shall consider later.

We are mammals and our brain comprises a number of sensors (i.e., the sensory organs) that also act as filters – we have no need to hear ultrasounds or to see in infrared or ultraviolet – as information processing networks (primary and secondary cerebral areas), as cerebral areas dedicated to the various forms of memory, as areas encompassing all the previously mentioned functions as well as what allows us to act, that is in short, all the motor areas. Our brain is designed to allow us to live and survive in the known physical world and for this purpose its functions are both necessary and sufficient.

In order to proceed with this argument we must accept that everything happens as though the brain could be seen as **a necessary interface for the conscience to interact with the physical universe.**

In any case it is noteworthy that this hypothesis poses no problem and prejudices neither the nature of consciousness nor its possible center, nor indeed its autonomy or dependence for the time being.

A question of dimensions...

Everything happens, then, as though this interface, which is perfectly adapted to this universe comprised of four dimensions including three for space and one for time, limited consciousness and perceptive abilities to these very dimensions.

So far so good, there's nothing extraordinary about that. However, experiences such as NDEs tend to make things rather more complicated. Indeed, in these specific states, everything happens as though the filter were less efficient or even disconnected without affecting – let alone switching off -- the conscious, thus allowing it a certain liberty concerning its usual limits, i.e. perception in four (3+1) dimensions.

The theme we are now getting on to requires some preliminary precisions, and may the true mathematicians and physicians forgive me some approximations!

A point has no dimension, as mathematically speaking it is infinitely small.

A straight line possesses one spatial dimension (roughly, its length), a plane possesses two (length \times width) and a volume is defined by three (length \times width \times height). But an instantaneous line or cone, i.e. without duration, would hardly be any use. Therefore, an extra dimension – of the temporal type -- must be added to their space dimensions, so that they can 'last'

A straight line (one dimension) is made of an infinite number of points. A plane (two dimensions) contains an infinite number of lines. A volume comprises an infinite number of planes.

All this allows us to define the apparent geometry of the universe in which we live and which-- to us at least-- possesses three spatial dimensions that we master plus one temporal dimension that we are inexorably subjected to. This is a **four**-dimensional universe (3 + 1).

Another characteristic must be well understood before we go any further, that is in this hierarchy each dimension may be conceived as perpendicular to all others.

Length is perpendicular to width and height is perpendicular to both length and width. Roughly speaking, one can measure a displacement in the (N+1) dimension in relation to the (N) dimension by measuring the length of the displacement in a perpendicular direction to the (N) dimension that is the defining axis of the (N+1) dimension.

For example, you are reading this printed text on a sheet of paper, i.e. on a plane that comprises two dimensions – this is of course approximate as the sheet has a certain thickness.

Your eyes are at a certain distance from the sheet and this distance can be measured in a third dimension perpendicular to the plane of the sheet.

Let's now try and understand how a dimension that is perpendicular to our three spatial ones can exist.

We have seen that the three spatial dimensions are not sufficient to define our universe, but that there exists a well-known fourth one, i.e. time. As the latter is a dimension like the others – although of a particular type – logically, it must also be situated at a 'right angle' to the three spatial dimensions, which is rather difficult to visualize. Let's try anyway:

When you move the sheet you are reading, for instance by bringing it closer to your eyes, all the points of the sheet simultaneously move in the same direction, which we know is the axis of a third dimension perpendicular to the sheet. Well, when time goes by, everything that belongs to the three spatial dimensions moves in the same way on the time axis, at the same speed and in the same direction, i.e. from the past towards the future. So, this axis is indeed perpendicular to our three spatial dimensions.

The point on which we stand on the time axis is the present moment. All points of an object stand at exactly the same temporal distance from the object it was one hour before, that is at 3600 seconds. If this was not the case, your head might not move at the same speed as your shoulders – an interesting concept for psychiatrists – or the bottom of the glass you are filling might be somewhat late thus engendering bizarre effects, not to mention the laundry bill.

A little liberty is required in order to illustrate our demonstration, and so we shall follow the adventures of a caterpillar. The caterpillar is not of course a two-dimensional animal, no more than its habitual universe. But let's imagine an infinitely flat caterpillar living on a two-dimensional plane-- its universe being approximately limited to two dimensions for demonstration purposes-- and which will discover the surface it is crawling on millimeter by millimeter. Our caterpillar holds no perspective that would allow it to see either where it has just crawled from or where it is going.

Because we possess a vertical dimension, the ability to see the caterpillar's whole plane at a glance is natural to us and there certainly is nothing supernatural about knowing the obstacles it will encounter and where it will find a leaf to nibble, long before it does. We can simply see its universe from a dimension that encompasses it, a third dimension that prosaically happens to be height. The plane on which the caterpillar evolves is entirely included in the volume within which we stand and from any exterior point to the plane we can hold a global view of it and everything on it, from an angle – if we lie flat on the ground we can't see any better than the caterpillar itself!

To go further, a little mental exercise will be necessary to transpose this passage from an (N) dimension to an (N+1) dimension. Most of the examples I will give have to do with the differences between two and three dimensions, so a little effort will be required to imagine what may result from the access to a fifth dimension from our (3+1)-dimensional universe.

So, everything happens as though **access to a (N+1) dimension – in this case height – allowed a global view of what belongs to the (N) dimension.**

This remark will simply allow us to 'widen the frame' by putting forward a theory:

The brain, being a perfectly material and terrestrial organ as well as being the interface between consciousness and our universe, holds consciousness flat on the ground, as it were. It allows us to be present, to perceive and to act in the universe we know. But, we have seen that during an NDE the interface is disconnected, as we have absolutely no possibility of interacting with the physical world – which is generally the case when in a coma. However, as numerous accounts suggest that consciousness can persist, nothing prevents it from 'rising again' – or levitating if you prefer a more mystical term – and to assume a certain 'height' or distance from the ordinary universe.

During an NDE, if consciousness does acquire a certain liberty by accessing a fifth dimension so to speak, the apparent consequence of this is a global perception of everything that belongs to our four-dimensional universe.

In this perspective the notion of locating consciousness seems utter nonsense to me, as it may no more lie at a particular point in our universe than a cube may lie in its own shadow.

In spite of appearances, all this is far from being crazy. There currently exists a theory – the superstrings theory – born from an urgent need for unification as physics encounters more and more forces and particles defying any possible comprehensive and coherent understanding within our four-dimensional universe. According to this theory, the universe comprises ten dimensions. From the latest available research I quote: ‘recently, research on superstrings in the eleventh dimension has seen overwhelming activity. Edward Witten, Princeton Institute for Advanced Study and Paul Townsend, University of Cambridge, have shown that many mysteries in the superstrings theory become transparent if we reformulate the theory in eleven dimensions’. (Kaku, 1999)

So I shall have no complex contenting myself with a fifth dimension in which, as we shall see, a number of preoccupying mysteries also become transparent!

Everything happens as though – and there’s no shortage of examples – perceptions in such a state transcended space and time, and hence were not limited by the characteristics of the sensory captors or of the cerebral filter.

If this proves to be more or less right, **then many things become clear.**

To start with, let’s imagine our two-dimensional being moving about on a plane and meeting with what we can immediately identify as a triangle. We are not to forget that the triangle remains opaque to the caterpillar that can only simultaneously perceive two of its sides at best, whereas we can at once perceive the three segments. Indeed, the caterpillar’s viewpoint belongs to the same plane as the triangle, because by definition it lives in a two-dimensional plane/world and so has no way of perceiving the object from any greater height for the time-being. In order to become aware of the shape it has just met with, it will have to go round it. Similarly for us, a solid three-dimensional object will always keep a hidden side and we have to go round it to discern it in its entirety.

Let’s imagine that the caterpillar first comes across the basis of the triangle, which we will name BC, so that it can’t see the vertex A. From its viewpoint, the caterpillar can only see segment BC, but if it goes round the triangle it will successively see segments CA, then AB and BC again.

Let’s now imagine that it can have access to a third dimension, perpendicular to its usual plane/world. If its viewpoint is raised by no more than one millimeter above the plane, it will now be able to perceive point A just behind segment BC that until now obstructed the view, as well as the other two segments. It won’t change much for the caterpillar, as the basis of the triangle will still take up most of its view, but it will have perceived the rest of the triangle although much flattened. In fact it will seem as though segments AC and AB are perceived by transparency! Well, after all the caterpillar’s nervous system is designed to integrate visual information in keeping with its two-dimensional world. It may then have a notion of transparency given that the limits of certain objects are not fully opaque, but it can have no notion of three-dimensional perspective.

As for us, if we wish to simultaneously see an object from all its angles within our three spatial dimensions, it must present a certain degree of transparency... except during the first stages of an NDE, when the impression that the people and objects observed are indeed transparent is a common feature.

Let's take the experiment a little further: imagine our 2D caterpillar's viewpoint is raised by about the size of the triangle. The transparency-effect interpretation becomes impossible. For the first time in its life, the caterpillar sees a triangle in its entirety and this at one glance. As it is used to seeing the object from one side at a time, it can only translate this sight as the impression of simultaneously observing the object from all possible angles. How then will the caterpillar represent its impression if asked to draw it? Don't forget that while in our 3D world we can draw on sheets of paper or computer screens, i.e. on planes, the caterpillar, in its 2D world, can only draw on a straight line. It will simply have to make several drawings of the triangle from the front, the back, the sides, and so on, explaining that is what it saw, only simultaneously! On hearing this story, good old Dr Flatbug is very likely to start scratching the appendice which is widely believed to fulfil the duties generally attributed to the head...

Thus, the accounts of vision "from everywhere at once" become logical. To the caterpillar a stone must look like a wall but from your height you can see it whole without having to go round it and the same goes if we transpose this difference of perception due to the access to an 'extra' dimension. Perception from a hypothetical fifth dimension must give the exact same impression of perceiving things simultaneously from all angles.

If we leave aside the difficulty of taking in such extremely unusual perceptions and especially in explaining them with inadequate words and concepts, then the different types of perception mentioned in the accounts make sense:

- In the case of a very slight displacement into the fifth dimension the person will report an impression of having seen objects from the inside as well as having seen their usually hidden sides and what is behind them, including the impression of having seen through walls and ceiling.

I have seen my body on the operating table. I was above, and I could see everything, everywhere, even through the surgeon. I was able to see through objects, and I passed through the walls.(H.B.)

My sight was very large, even through the walls.(K.D.)

I could see everything around me, and I saw the inside of my body.(M.G.)

I felt myself like a soap bubble with eyes, floating near the ceiling, in a space that seemed a little "closer" than normal space. In the emergency ward a woman was dying. I could see the instruments, the gestures of the doctors, their conversations, I could see through the curtain that lined the glass wall.(J-P.K.)

It was an overall sight, I could see everything simultaneously, the wrong side and the right side, and seeing showing through. Something like being inside my eyes.(J-M.L.)

- - In the case of a more substantial displacement, there will again be the notion of being at once in front of, behind, above and under the observed scene, which is a very difficult impression to describe, a fact that may account for the relative rarity of such accounts. (We will deal with the importance of noting down as precise a record of accounts as possible further on.). In fact, everything happens as though perceptions were coming simultaneously from all the points of a sphere embracing the scene (and indeed, as mentioned above, this sphere, considered in its wholeness, is actually perpendicular to the three dimensions of our "usual" space). This is a very difficult impression to describe, a fact that may account for the relative rarity of such accounts. But this difficulty exists only in the case of a perception focused on a particular object or scene. If the experiencer simply "sees" the whole place he "flies over", his feeling will be that of a "360°" perception, including

everything around him, in all directions, which is also a very common feature in NDE accounts.

I could see behind me , from several sides simultaneously, and through objects. I was able to see what was going on in the room and in the corridor, behind the wall.(M.K.)

When I looked at the sofa, the furniture and the room, I could see from above, from below, from the right, from the left, etc., simultaneously and at the same time on 360°, in a "spherical" way. I could see my body from all sides, I could see through the back of the sofa, in the same way I looked through my physical body.(X.R.)

- In some accounts, the feeling is the one of being everywhere simultaneously, which fits with a greater distance in the extra dimension :

I told you that I was in the operating ward seeing all that was going on, and I found myself in the bathroom of Mrs. E.. In fact, I didn't take the stairs, I don't think so... That moving can't be explained, as I found myself on the first floor and at the same time in the bathroom which is on the second one. As a matter of fact, I was everywhere at once. (J.M.O.)

My sight was very particular. I don't know how to describe it : I saw everything with a total sight : the lake, the mountain, people along the banks of Evian, the texture of their clothes. I could see in the boats, in the houses , little animals in their burrows, the roots, the blades of grass, I saw all that simultaneously and if I focused on something I could see it through any obstacle and with every minute detail, from its surface to the organization of its atoms. Really a detailed and overall vision.(M.K.)

- When the distance from our universe is even greater, we may reasonably suppose that as our brain is not designed for this purpose, it will be ill adapted to the assimilation of such perceptions. Let's not forget that time is part of our usual four dimensions, which are apparently perceived during such experiences. So, if the displacement into the fifth dimension is significant enough, the quantity of information perceived becomes absolutely phenomenal because it is not only concerned with a little portion of space and time but allows for 'instantaneous' vision of a spatial and temporal field that is proportional to the displacement, practically up to infinity.

I imagine that the impression given by such an experience is that of having unlimited access to an absolute knowledge, which is often reported in the accounts at my disposition.

In our normal state of being – that of reasoning bipeds - our consciousness perceives and acts through the brain, so that it seems to lie approximately between the ears, however it may no more lie there than a picture does on the television screen... Hertzian waves are everywhere at once, conveying an infinite number of superposed data-loaded frequencies. Your TV set selects one of those and gives you a representation of it that you can understand. So although we may regard the brain as anchoring us in our universe, it seems that consciousness in its entirety can't be seen as localized. In fact, being in a dimension that comprises our usual (3+1) dimensions does allow us to acquire in-perspective perception and global knowledge of our whole environment, but the rest only depends on the "direction" in which we look. This has several consequences : first of all, the notions of space and direction may well become meaningless, a consequence which appears in numerous accounts. If you look at a photograph – i.e., a 2-D representation of something that normally has three dimensions– the notion of space disappears. It is recreated by the brain - the brain just knows that the tree stands in the foreground and that Fujiyama is in the background – but it doesn't physically exist on the plane of the paper sheet . You can instantly look from one point on the photo to another or look at the whole picture at once and there's absolutely nothing miraculous about that! Let's transpose this to our fifth dimension: from 'above' everything that belongs to the (3+1)-dimensional universe becomes immediately accessible and all notion

of distance disappears. Movements seem instantaneous, but in fact these movements are as much the movement of eyes over a page of writing as the movement from one point to another. Metaphorically speaking, we can say that the look moves, while the eyes on the other hand only slightly revolve around an axis. Thus, the accounts that report having acquired undeniable information -- and these accounts are frequently accompanied by an impression of identification -- become understandable, as the gaze' need only turn towards a direction and time span in order to be able to perceive all it is interested in, including the temporal unfolding of any scene or event.

I remember the story an experiencer told me of his visiting a cave during an NDE, although he was never interested in the subject either before or after his experience. As if by a sort of zooming in effect, he had *been* the cave and its mural paintings he had also been even the painters themselves and he was able to understand their reasons for drawing, their beliefs and the meaning they wanted their pictorial work to have. So much so that he could discuss the subject on an equal footing with a specialist of this cave at a conference on primitive art a few years later. After five minutes' conversation, the specialist started calling him 'my dear colleague' and even went as far as to ask him on which excavation site he had worked. He never dared explain to her how he had learned so much.

Another phenomenon seems susceptible to be partially explained within this framework, i.e. the concept of synchronicity much studied by C.G. Jung (Jung, 1952). Its link with NDE may seem doubtful, but numerous experiencers have reported the occurrence of such strange experiences following their NDE. These strange experiences involve events taking place that are interrelated by their meaning --either by their intrinsic meaning or by their significance for the experiencer -- without any cause to effect relationship.

In our familiar and reassuring world two or more events are linked either because they take place successively -- A engenders B which causes C -- or, if they happen simultaneously, because they share the same origin -- B and C occur at the same time and both are the consequences of A.

The occurrence of synchronistic events escapes this causal logic and they are often referred to as 'significant coincidences'. It is for instance a recurrent coincidental fact that regularly, as you are desperately looking for a reference, a book falls open precisely on the page you needed. The more or less unused word you happen to hear ten times in a day and never again for months is also a recurrent coincidental fact, as are fantastic stories that seem utterly weird, like that told by Camille Flammarion (1900), which I cannot resist quoting:

While he was still a child in Orléans, a certain M. Deschamps once received a small portion of plum pudding from a certain M. de Fontgibu. Ten years later he saw another pudding in a restaurant and ordered some. However it appeared the pudding had been reserved and by none other than M. de Fontgibu. Many years later, M. Deschamps was invited to eat a plum pudding, which was a rare event. As he was eating, he thought to himself that only M. de Fontgibu was now missing to complete the picture. At that very moment the door opened and a very old confused-looking man entered: it was M. de Fontgibu who had come to the wrong address and found himself at the gathering quite by mistake.

In order to understand how the frame we are defining can account for such coincidences, put yourself in the caterpillar's shoes, so to speak. With its ground level vision it thinks it is coming up against a wall on its right-hand side and another on its left-hand side. As it is in a hurry, it crawls between the walls that are absolutely unrelated as far as the caterpillar is concerned. If the obstacles happen to be your shoes, the link between them

exists, but only in the third dimension. And if the obstacles are a soldier's heels and he suddenly stands to attention, clicking his heels as he does so, the poor caterpillar will only just have time to realize in a final flash of understanding that some apparently unrelated things in its dimension can indeed be related in a higher dimension with a most tangible – and indeed definitive – effect at its own level.

Thus we could conceive that certain events that are significant for a given person but escape all causal law in our world may in fact be related, though only in a superior dimension.

Within this frame, visions of the future that turn out to be true become predictable and life reviews where everything seems almost simultaneous but nonetheless precise in every detail become perfectly clear. Let us keep in mind that seen from the fifth dimension, time becomes a dimension like any other – we may say it becomes 'spatialized': just like one can and get an overview of a plane by rising above it, one can also rise up to the fifth dimension and as it were fly over the others, including time, and see the latter in perspective. Imagine the – definitely antimilitarist -- caterpillar propelled to the third dimension where it meets its grandfather the butterfly who says 'Beware! Look behind the third leaf on the right, there's a praying mantis armed up to its teeth!' The caterpillar will find it hard to understand and yet if it looks back it will see all the way it has come, which should have brought it right between the fatal heels and if it goes back it may even find its childhood cocoon again! And if it rises high enough, it will see everything at a single glance and in an instant.

During the "life review", which is one of the most common characteristics of NDEs, a person can see again his whole life, being able to zoom in on key moments, often understanding the ins and outs of his actions.. Many persons say that, like the rest of the experience, it takes place "out of time" and has nothing to do with any memory recall. Here are some extracts which very well illustrates these points :

There was no more time, in fact. It was like a moment of eternity. (K.D.)

Not any track of time, nor limits. To my knowledge, there is no possibility of comparison between the time of matter and the one of that dimension. That whole makes up that space-time, a kind of totality, of a global nature. (R.G.)

I had the feeling of being able to fly over time.(J-M. L.)

They call that the past, it's because they reason within time. But there is no time out of the body. There is no past. Neither present nor future. Only an everlasting present.(P.L.)

The track of time we usually refer to was away from that story. All I can say, even if I'm unable to explain it, is that I existed in a kind of absolute timelessness. As that whole journey out of my body unfolded out of time. No body : no time. Then I ask myself whether our feeling of a time flow wouldn't be an enormous performance! (M.M.)

In many cases, the experiencers have seen their whole life in one eyesight, with the possibility of focusing or zooming on minute details, and it seems that time dimension is included in their vision :

Then, I saw my life backwards. I say "after" but there is no after. When you come into that state, there is no more past nor future. Here are some past and future, but they are part of an everlasting present. I can't explain that, there is nothing left but an absolute present... And everything is included in that present. At the same time I could see my 26 years unfolding, from now up to my birth, you see.. I was the spectator of my life which was there as a whole, because I was the result of my life, then at the same time, it's difficult to say, my life unfolded before me, with all its details. (N.D.)

This 50 year-old man suffered from three consecutive cardiac arrests, and "lived" two strictly similar NDEs during which he could see his whole life as a "3-D thing", in a way that confirms that during these experiences, time seems to be "spatialized" and could be "seen" from some distance and angle, exactly like a spatial dimension.

(...) He thought : "there I'm dead.." and felt himself in a "gray, boundless universe, out of space and time, the atmosphere was soft", and then :

... ".I find, in front of me... my life. I look at that 3D thing which is my life and that doesn't unfold. Time is part of it, is integrated into it, it is not linear. I just have to change my angle of vision to see another part of this life.(...) I see again my life in full, three dimensional, in minute detail, people, situations. But in a time that doesn't unfold, life being a wholeness that one watches with this overall and universal intelligence. My life was a shape, under my very eyes, which contained all and that I consulted. Your own life is in 3-D and the fourth dimension is completely integrated in it. At that very moment, if I had looked at anybody, I could have known everything about him. His age, his height, his blood group, his family, the total amount of his taxes, his diseases, etc. etc. ALL in a whole concept."

This account seems to describe a whole life seen exactly as a Minkowski's diagram !

Here is another extract which includes precise details, a simultaneous perception from several angles and a curious reversed echo. This took place in 1949, this 29 year-old man was comatose when carried to the hospital. During surgery, he found himself out of his body :

"I could see the whole operating room, with a body that was undergoing surgery. I could even see the fibers of the material, I could be able to say how people were dressed, I could see the texture of the walls, and also the paving stones on the ground. Afterwards, I checked their presence on a photograph, while it seemed to me abnormal and anachronistic to find paving stones in an operating room.

I have seen the whole operation. I could see every gesture of the surgeon. I felt some events in advance : I felt the fainting of the nurse, I said to myself : " poor little thing, she won't be long to fall down", then she collapsed. She fell on her knees then rolled to the ground. At another moment, the surgeon was given a wrong instrument, I felt anger rising within him before he would show anything at all. I distinctly felt that before. There was also a delay between the moment I heard the words and the moment people pronounced them, like a reversed echo.

There was not the faintest notion of time, it didn't matter. I could not say how long the experience lasted.

At the same moment I could see the whole operating room from above, I was able to see under the table a green plate with white letters, which had this inscription : "Manufacture d'armes de Saint- Etienne". When I talked about that to the surgeon, he said : "let's check that together".. He knew nothing about the plate, that was indeed there, exactly like I had seen it.

Then I went through the wall, found a bicycle shed, and got over some other walls without the slightest discomfort. During this walk, I found myself in a huge dormitory, a ward some beds of which were occupied... Then I found myself at a water supply point in a corridor. When I woke up, I was dreadfully thirsty, but I had been forbidden to drink. I got up and went to drink to this place that I was sure to find there. When I went out of my bedroom, I knew that this water point stood two doors away and I went straight to it.."

The "reversed echo" described by this experiencer could be interpreted as a perception of time "seen" from some "height" in the 5th D : he can hear words in advance just as one can see in advance the stones and holes on a footpath, just because the eyes are at a certain height above the ground. The events felt in advance (and checked afterwards with the surgery team, as the bicycle shed and the ward) could be interpreted in the same way.

These are only a few examples among many others at my disposal. Almost all of them are consistent with this 5-D interpretation. Seeing objects or persons showing through, "360°" view, perception from multiple simultaneous points of view, perception of a spatialized time,

as the feeling of being at the same time “far and near”, or seeing simultaneously a whole scene and very minute details. etc. are frequent in the accounts I have gathered.

Thus we can understand that in many accounts we find this impression that time ‘has stopped’ or simply does not exist. Our sense of time is linked to the perception we have of duration, of time passing by, and in this dimension that seems to transcend it, consciousness must perceive time as one perceives the landscape from the top of a hill and no longer endure its relentless flight.

I lack the necessary time to go further into my analysis of the subject but it seems to me that perception in the physical sense of the word does not exist. I have the impression that somehow in this dimension ‘everything is in everything’ like the pearls in Indra’s sky where each pearl reflects all the others. If the same goes for what we call conscience, our individuality may be no more than an illusion. For the time-being I would like to avoid getting caught up in philosophical or mystical-cum-religious speculations, however if our consciousnesses become one in this hypothetical dimension, then many things become clear, especially the radical changes experiencers undergo regarding the meaning of life, their moral values, etc.

If one way or another they have ‘been’ more or less all their contemporaries – some even say the whole universe – we can understand that selfish and individualistic behavior gives way to more altruistic and somewhat higher values...

Things are not that simple...

So we have set up an overall hypothesis, a way of seeing things which seems to coherently account for a certain number of facts, simply by changing the frame of references.

We can now try and see how to develop it, but this is where things get complicated.

Like us, the caterpillar has sensory captors and means of processing information adapted to the universe in which it lives, in other words the 2D world it is condemned to crawl in. If, by raising it to the level of a human eye, we allow it to glance at a panoramic view of its world, a world in which it lives but is yet unaware of, what will the caterpillar see and what will it make of it?

We are indeed studying accounts of experiences that, one way or another, have been perceived. However, when experiencers tell about their experience, they do nothing but explore their memory and describe what is stored there. It is therefore essential to understand the progress and processing of that information from the moment of its acquisition to its restitution so as not to fall into a certain number of traps.

Before going any further I would like to give an example that illustrates the capacity of adaptation of our gray matter: in a recent experiment (Nishimura, 1999) the cerebral activity of people suffering from congenital deafness was recorded so as to localize the areas of the brain that allow these people to understand sign language. Indeed, the auditory areas of a person who has never been able to hear may well be undeveloped, as they have never been stimulated. A video of somebody using sign language was shown to the participants. Against all expectations, the simultaneous recording of cerebral activity showed no activation of the visual areas but superior temporal convolutions where the secondary auditory areas which are

used for decoding language, are situated. To put it more simply, though people who are deaf from birth communicate by means of their hands and eyes, perceptions concerning sign language are directly sent to the auditory centers that are therefore perfectly functional in spite of deafness. They simply receive information through an unusual channel. We can then consider that, at least as far as language is concerned, deaf people can hear even though they do not do so through their ears.

Besides, I am willing to bet that the day a similar experiment is carried out with congenitally blind people, we will find out that their sense of the environment, which for us is essentially visual, is also essentially processed by the secondary visual cortex. The latter must simply get its information via another channel – just like the secondary auditory cortex does for deaf people – i.e., touch, resonance and acoustic phase differences, smells and so on, so as to allow a blind person to locate themselves in space and acquire a representation of their environment.

If we transpose the caterpillar's experience to what happens during an NDE, we can ask the same question, which is as follows: If, during the experience and through unusual channels, we perceive a universe that is no longer limited by the dimensions of the physical world, what will our brain be able to do with it on our return, as the brain is essentially designed to process information limited / confined to what the sensory organs transmit to it?

Well, despite their unusual origin, the brain will do its best to process and sort them into the most appropriate categories:

At the end of the day if we are not careful, on the experiencer's return the environment will essentially be described as a visual perception and all instance of communication will henceforth be described as having been perceived through the auditory channel or at least as the understanding of a language...

However, if asked to describe these perceptions as precisely as possible, some experiencers are actually able to discriminate between them and their usual perceptions. Here are a few examples:

'I think you can look or perceive with sharper and more refined abilities. Every sensation is richer; a somewhat over simplified example would be to compare a two-head VCR image of fifteen years ago with a four-head one of today...'

'When I was talked to, the words were in my head and not in my ears, whatever they may be... It is difficult to try and bring these differences of perception together. Sometimes you are a point of consciousness, sometimes a "whole being", whatever the meaning given to "whole being". "I" remain, but my perceptions widen.'

Another example:

'everybody was speaking to me without my hearing them, I felt filled with their thoughts.'

Yet another:

'the memories I have of these moments are not visual ones. They are inner impressions that I felt as strongly and clearly as any ordinary experience, but I cannot talk of images, shapes, etc.'

Oddly enough, while the functional state of the brain is generally abysmal during these experiences and despite the experiencers' perceptions being different, most reports agree on their constantly being clearer than usual perceptions, **thus further confirming the impression that the brain is above all a filter.**

On many occasions as I was listening to experiencers I tried to get them to give a more precise account of 'how' they had perceived their environment. It seems that most of the time optical laws were not respected – no more than acoustic laws were. We have analyzed this above : the scene seemed to be lit by itself and not by the reflection of an external light, some report having 'seen' at 360° without being able to explain it, others saw from multiple

viewpoints, yet another group, when thinking it over declared they did not really see but rather ‘perceived’ by identifying with the object of their attention.

These accounts ought to be compared with those reported by Kenneth Ring and Sharon Cooper (1997) who have studied accounts of NDEs and OBEs by blind people, some of whom are sure of having seen during their experience, which is bound to attract attention Media attention!

We are confronted with a paradoxical situation: congenitally blind people who can describe a scene or a landscape as though they had seen it and people with normal vision who are aware that the way they saw has very little to do with normal vision.

However, it merely appears to be a paradox and it is important not to be misled by language. Indeed, during an NDE perceptions are not conveyed by the sensory organs, therefore the blind and the ‘seers’ will be on an equal footing as will the deaf and the ‘hearer’s’. But, whereas a person who can see normally will be able to notice the difference, a blind person won’t because they lack the necessary elements of comparison. As they will have acquired much more information on a given scene than they would through touch and hearing, it is easily understandable they should think: ‘this is what seeing is like’.

Caution is therefore necessary when studying accounts, for things certainly are more complex than they seem. Moreover, everything I have said concerns NDEs of course, but also seems to apply to altered states of consciousness in general.

As a matter of fact, research in this field is essentially based on accounts. I believe it is fundamental to make sure we understand how perceptions are processed, since as we have seen, the brain has an annoying habit of organizing every new, unknown or unclassifiable thing in categories it can process – if one day you come across some metallic object that wasn’t in your cellar the day before, don’t just think ‘well, Daisy’s bought a new pressure-cooker...’ Despite appearances, it may well be that some terrorists put a state-of-the-art atomic bomb there, and the effect will be somewhat different!

Whether consciousness has access to a ‘fifth dimension’ during these experiences or whether reality is even more complicated, the ulterior processing of information and perceptions received during an NDE will automatically be simplified because of the brain’s way of functioning.

Therefore, I believe it is important to ask the right questions and to try and obtain as many precisions as possible when an account is given, because all subsequent research depends upon it.

For example, one should get experiencers to define their perceptions in the most precise manner possible, and ideally find experiencers who have abilities which make them specially qualified for a better observation of the phenomenon, but above all to have a certain awareness of their mode of perception:

- Painters, photographers – in fact, anyone with notions of optics and used to ‘looking’ with critical distance
- Musicians, sound engineers – and anyone with notions of acoustics
- Sportsmen and women, gymnasts, etc.
- People suffering from a handicap in the same fields (visual, auditory or physical).

NDEs have many implications. It seems very important not only to collect accounts in as comprehensive a way as possible, but also and above all to take all the elements into account. The minutest detail may be important and, as I wrote in the introduction, every oddity in an account can lead to an idea about the ‘behavior’ of conscience in unusual conditions.

Had I not a little for the fun of it and with a certain amount of naivety decided to ask myself ‘what if it were true?’ the perceptive particularities at the origin of this article could have been put down to cerebral disturbances or to the sheer impossibility of reporting and describing a wholly unusual perception. I hope to have shown that, in an appropriate frame of references, not only do these particularities become logical and understandable, but they can also help give us a better understanding of man, his consciousness and his place in the universe, perhaps even giving us an overall view of the structure of this universe.

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BIBLIOGRAPHY

Collier B., “Ketamine and the conscious mind”, *Anaesthesia*, Vol 27, N°2 (April 1972).

Cooper S., Ring K., “Near Death and Out of Body Experiences in the Blind: a study of apparent eyeless vision”, *Journal of Near Death Studies*, 16 (2) (1997) pp 101-147.

Flammarion C., *L’inconnu et les problèmes psychiques*,. Paris 1900, p.231.

Jansen K.L.R., “Neurosciences and the NDE: Roles for the NMDA-PCP receptor, the sigma receptor and the endopsychosins”, *Medical Hypotheses* 31 (1990) pp 25-29.

Jourdan J.P., “Near Death Experiences and Transcendental Experiences. Neurophysiological correlates and hypotheses”. *Journal of Near Death Studies*, 12 (3), pp 177-200 (1994).(Available in English and French by contact with the author)

Jung C.G., *Synchronizität als ein Prinzip akausaler Zusammenhänge* (1952). French translation in *Synchronicité et paracelsica*, Albin Michel (1988)

Kaku Michio, *Visions. How science will revolutionize the 21st century*.

Korramzadeh E., Lofty A.O.: “The use of Ketamine in psychiatry”, *Psychosomatics*, 14 (1973) p. 344.

Lempert T., Bauer M., Schmidt D., “Syncope and near-death experience”, *Lancet* (1994) pp 344- 830.

Mercier E.-S., *La Mort Transfigurée*, Belfond - L’âge du verseau (collective work, 1992).

Nishimura & al., *Nature*, vol. 397 (1999) p 116.

Sabom M., *Recollections of death*. Harpers and Row, N.Y. (1982).