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Near Death Experiences and the 5th Dimensional Spatio-Temporal Perspective

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Abstract

The cognitive and perceptive characteristics of 70 cases of Near Death Experiences have been studied. The detailed analysis of the unusual modes and characteristics of spatial and temporal perception during these experiences reveals a “hidden” logic for which I propose a model where the point of perception would be in an extra dimension. The appropriateness of such a model is analyzed and shown to be consistent with the NDE accounts in the study. In contrast, those interpretations of such perceptions as being purely hallucinatory are undermined. Whatever its meaning, the underlying logic shown in this study suggests that NDEs seem to follow precise rules. Since these experiences can be viewed as an unusual but consistent behavior of consciousness, they deserve further pluridisciplinary study.

KEY WORDS: NDEs; consciousness; perception; information; modelling; large extra dimensions; 5D; space-time.

1. Introduction

The perceptions we are going to study here come from persons who, having survived a cardiac arrest or some other life-threatening circumstances, report a Near-Death-Experience (NDE). Although they were totally unconscious for any witness around them, these patients frequently report clear memories and can describe accurately their vicinity, including details that can be checked afterwards and scenes that allow clarifying the “moment” of the experience, all that seemingly perceived from a point external to their body.

The number of NDE cases with objective perceptions is far from anecdotal: of the 70 cases included in this study, 48 (68.5%) involve what one calls an “Out of Body” (OBE) stage (at the very least, all declare having “seen” their bodies and the surrounding activity from a perspective outside the body). Of these 48 cases, 23 (47.9%) report precise perceptions corresponding to verified details in the environment and/or to scenes which took place just as described, thus giving a precise idea of *when* the actual experience occurred.

Many cases of this type (Sabom 1993-1998, Ring, 1980, Ring & Valarino 1997, Van Lommel 2001, Jourdan 2006) have been reported, and two recent cases have been the subject of thorough investigations (Sartori and Al., 2008). These *apparently nonphysical veridical NDE perceptions* (AVPs) are extensively discussed in (Holden and Al. 2009, Holden 2009).

An important point needs to be specified here: despite a superficial similarity, these experiences have to be properly differentiated from well known and explained phenomena like sleep paralysis or lucid dreams (Jourdan 2006).

A classical NDE comprises several stages (OBE stage, tunnel, perception of a brilliant light, life review, encountering a “being of light” and/or deceased relatives, feeling of a limit not to be trespassed...), the majority of which, although very similar within different accounts, are for the time being beyond the reach of objective study. Only, the OBE stage shows some apparently objective elements, and is therefore a good candidate for a scientific investigation.

But sometimes, as we are about to see, research in a specific field may have surprising results.

2. A Strange Account

In the late 90s, while he was telling me his experience, he stressed how his consciousness had “seen” his surroundings while it was happening:

“I was able to see the sofa and my body simultaneously from all directions. I saw my body through the sofa, I could see the top of my head and in the same time I saw my left and right sides and the sofa from below and from above, and all the room like that, I was everywhere at the same time!”

Dashing off several sketches, front and side-on views as well as views from above, below, etc., he repeated “I saw all that <= ” i= ”>”.

Trying to schematize a perception “from everywhere”, I drew a circle around a person lying on a sofa and mused aloud: “in fact, it’s as if you had “seen” simultaneously from all points of a sphere surrounding the scene”. At that moment, I realized that the drawing allowed me to see the couch as well as the body from all angles simultaneously. Moreover, the back of the sofa did not need to be transparent to allow seeing the left side of the body lying on it ... Essentially, I was looking at a two-dimensional universe (the drawing) from the third dimension, which allowed me to perceive simultaneously everything in it.

Nothing magic about all that, but was it that simple? Even if we do not go further than Euclidian geometry, considering only spatial dimensions for the time being, the scene described by the experiencer was three-dimensional. Everything happened as though during his NDE he had perceived from a point external to our universe, thus logically... from a fourth dimension! Of course, this interpretation seemed somewhat speculative (!) but nevertheless seemed compatible with some old accounts I had not paid attention to, thinking they were just curiosities. Going back to these latter, I found some similar evidences which persuaded me to investigate in detail the perceptual particularities in NDEs.

Without making any assumptions as to the reality of these paradoxical perceptions, be it as it may it was interesting as a first step to define their modalities by asking the patients to specify how they perceived things during the experience.

One could have expected to find various eccentric features, they could have described only more or less vague outlines, black and white, fanciful, soft or garish colours, distorted shapes, imaginary details or scenes, etc. But none of this was to be found in their answers. All that they described was perfectly banal considering the circumstances. All, except for the way they perceived the environment! Apart from those who were unable to give precisions, the answers were quite strange, while remaining confined in several precise categories.

3. Overview: Out of Body Multi-Dimensional Consciousness

An overview of the testimonies and extracts cited in this paper (recorded at the IANDSFrance association and are taken from Jourdan 2000, 2001 and 2006).

I was surprised that I could see at an angle of 360°, I could see in front and behind, I could see underneath, from far, I could see up close and also transparently. I remember seeing a stick of lipstick in one of the nurses’ pockets. If I wanted to see inside the lamp which illuminated the room, I

would manage to, and all of this instantly, as soon as I wanted to. I could say how people were dressed, I could see the sandstone wall, and also the stone slabs of the floor. I was able to verify their presence in a photograph later on since I thought it strange and anachronistic to have such slabs in an operating room. It was surprising and I could see, all at once, a green plaque with white letters saying “Manufacture de Saint Etienne”. The plaque was under the edge of the operating table, covered up by the sheet I was lying on. I could see with multiple axes of vision, from many places at once. This is the reason why I saw this plaque under the operating table, from a completely different angle, since I was up there by the ceiling and I still managed to see this plaque located under the table, itself covered by a sheet. When I wanted to check this, we realized the plaque really was there and read “Manufacture d’armes de Saint Etienne”. (J.M.).

Table 1. The most frequently reported perceptual features are summarized in Table.

Perceptual features	Out of 48	
Global perception	17	35,4%
360°spherical perception	15	31,3%
Perception “from everywhere”	12	25%
Perception by transparency	18	37,5%
Zoom/ instantaneous displacement	15	31,3%

4. Establishing a Model

Rather than a theory, what I will now propose is a model that allows to understand every seemingly irrational feature we have just outlined. We will now try to understand how the perception of a n-dimensional universe from a vantage point situated in an n+1 universe differs from its usual perception from “inside”.

If we are able to see everything in the plan above, looking at it as a whole or focusing our attention on each of its details, it is because our point of perception is situated away from it. This “global perception” obviously disappears when the vantage point belongs to the observed universe, as is the case with an imaginary being who lives in the diagram: Tweedee (he only possesses Two Dimensions and is visible in his bedroom). In his universe, he is subject to the same limitations as us. He can only see what is within his visual field, he cannot cross the walls neither see inside or through them. In short, all that is quite normal.

Yet you and I see his house in its entirety at a glance, we do not need to

move around to see the damaged car in the garage or his step-mother in front of the fridge. We see all the stools simultaneously, as we do the paintings -even the hidden one-, without the need to turn around or see through the walls. Which is also normal... Depending on the spot from where we perceive, these two totally different viewpoints are both equally logical. Comparing them will allow us to understand the apparently irrational perceptions described in the NDEs.

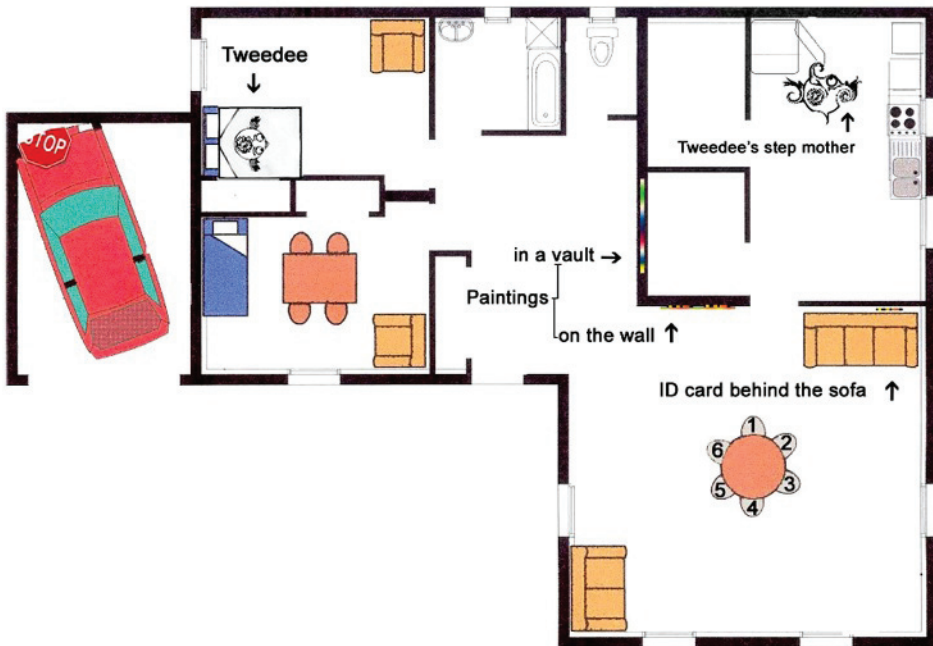


Figure 1. Tweedee's house.

For that, let us suppose that Tweedee suffers a cardiac arrest and “lives” an NDE. We will now assume that *for the duration of his experience his perception will be similar to ours*. But what is perfectly normal and common for us is not for him. When he returns, how will he manage to describe the particular features of this perception, which is all but ordinary for him?

Here is an example that describes perceiving a scene or the environment in a way that is unusual, but nevertheless frequent during a NDE:

I was at ceiling level in the emergency room, above my head. I could see myself lying down on the bed. A (male) doctor was working the resuscitation machines on my left. There was ringing everywhere. It was quite surreal. A nurse was close to me, adjusting perfusions and other tubes. Another nurse was running back and forth between the doctor and my bed, leaving the room and then coming back, running, all the time The nurse next to me was talking to me, “Stay with us, this isn't the time to leave”. I

saw her slapping me. I was fine. I no longer felt pain. I said, “Why do you want me to come back, when it’s not hurting for once.” Then I added, “Oh all right,” but I really wasn’t happy about it. What could be verified was the number of people in the room and what they were doing and saying.

Jourdan: “*Did the notions of up and down, left and right make any sense?*”

Yes. For the resuscitation scene I was at the top of the room at ceiling level. It is a notion of the orientation of things, in relation to each other. Not a real geographical, physical, position. It’s hard to explain.

Jourdan: “*Is there a difference (or a contradiction) between what you perceive (things stay in their usual positions with respect to one another) and the fact that the scene is perceived in a global way, which means that the position of objects in relation to where you are is impossible to define?*”

No, for me there is no contradiction. People and things are properly oriented in respect to one another in three dimensions. However, we see the scene globally, by this I mean in its entirety. It’s difficult to explain. For example, if you have a person on the ground placed in front of an object, you do not see this object. To see it you need to move. In this instance, it’s different. The person is really in front of the object. The way things are oriented stays the same. Despite this, you can still see the object. You don’t need to move. You see the entire scene. On the ground, you need to move, to change your angle of vision to see everything. There, you see everything without having to move. But people and things are placed normally in respect to one another.

Jourdan: “*Did you have the impression of having a larger angle of vision, to see in front and behind you simultaneously?*”

Yes. Total, instant vision.

Jourdan: “*Did you have the impression you were seeing an object or scene from multiple locations at once?*”

Yes, absolutely. This is what I meant before when speaking of an orientation but not of a real physical location. Once again, a total, instantaneous vision. (C.P.)

Tweedee is accustomed to live within a 2D plane but is now watching it from our vantage point. Although this could sound completely surrealistic, the patient describes exactly what this latter could say: *not a real geographical location*. Indeed, his point of perception cannot be located anywhere inside what he perceives. He “*sees the scene globally*”, which is not easy to explain. Tweedee’s step-mother is really in front of the fridge but she cannot hide it

from him. Indeed, he has no need to move or change his angle of vision in order to “see” anything in his house.

This perception of his universe is as natural for us as it is strange for him! Let us now detail some peculiarities.

4. Instantaneous Moving and Zoom

Some NDErs report having explored their surroundings. A curious feature appears when one asks them to be more specific about *the way* they moved around: in fact, most of them hesitate between a displacement and a zooming sensation:

What must also be understood is that it works like a zoom and a displacement all at once. When we take an interest in something, it’s as if we zoomed in. It is the displacement and perception occurring simultaneously which allows this to happen. It is hard to separate them, in the sense that there is no notion of time, thus no time spent moving. However, there is a certain notion of space, but not of space with limits and boundaries like in usual space. In the same way there is no compartmentalization or delineated directions, the notion of time and space aren’t compartmentalized. It’s hard to explain. (A.S.)

Jourdan: *“How did this displacement happen? Instantly or not, sensation of moving, sense of speed, more of a zooming sensation without real displacement?”*

This displacement was instantaneous - but the question “More of a zooming sensation without real displacement” bothers me - and it seems more or less that this is how it happened...What (maybe) makes me understand why, is a PC game that I’ve enjoyed recently where the hero “Predator” often used this “Zoom” function to move about. Every time I pressed the “Zoom” button I was both disturbed and happy to use this function...which in fact reminded me of this state. Maybe this is why I felt so light... (maybe I wasn’t moving about after all, maybe it was my highly developed vision which gave me the feeling of moving about...). (F.E.)

In everyday life, we unconsciously associate being in a spot with perceiving from it. If Tweedee’s attention is attracted to a detail, he will focus on it, just as our gaze can instantly switch from the step-mother to the garage where it will be rapidly attracted to the incongruous “STOP” sign.

The only thing which has changed is the direction of our gaze, but for Tweedee, who is accustomed to see his universe from within, the feeling is that of being able to move instantly and/or to “zoom” on to a detail:

My displacements were subject to my will with instantaneous effect. Instant zooming of my vision, without any displacement on my part. When I was on the outside in the park at tree level, I remember experiencing this zoom effect very clearly since I could see inside a tree without having moved. (J.M.)

I see everywhere at once, except when I target an object towards which I am “hurled” at great speed, as if I was zooming onto it. (...) It is like a rapid zoom to be there where I am looking. Like a very fast zoom, I cannot recall if it really is a displacement, or simply a zoom, but I was where I was aiming at, so there is a displacement...actually I don't know but it is very pleasant and fun. (Be.N.)

My consciousness, like a beam of light, can move around very fast, nearly instantly. This gaze, just like thought, can in addition move about very rapidly from points that are distant to one another. (P.C.)

Moving around is done as if time does not exist anymore (or nearly). We “think” about where we wish to be and we make a volitional effort and we get there instantaneously (or nearly, since there is a sensation of movement, but very fast). (D.U.) A sort of sliding, moving by zooming. (J-Y.C.) Feeling of displacement, but ultrafast. (M.L.) Displacement: in one go (F.U.)

5. Crossing the Walls

Many NDErs claim having been capable to pass through walls or ceilings:

Everything was like in reality, exactly in the same place, with the same appearance except that I could see the elements of matter and pass through it.(D.U.)

Usually, Tweedee is of course unable to cross any wall and is used to pass through the doors. But if we move our gaze from the garage to the kitchen quite slowly, paying attention to everything we can see between them, our look will pass through several 2D walls without any difficulty. These latter, which are for us only black lines, are usually perfectly real for him. How will Tweedee interpret that?

At some point, I told myself “I know this surgery but as I didn't know the rest of it, I would like to look a little more”, then I went through the wall, I wonder how I moved and then I looked, but the next room was dark and black. (C-A.D.)

That's to say that during my transfer to A. Hospital in the fire-fighters' vehicle I felt my mind off from my body and hear the conversations of these

people. Then, realizing this faculty of elevation I got out of the cabin of the vehicle through the ceiling ... (R.H.)

A sudden upward attraction seized me up, making me go through all the physical structures of the building, without the slightest difficulty, neither any jolt.(F.I.)

I went through the ceiling of my room, through the roof, without pain (I was very surprised ...) (Cl.N.)

(...) Since I passed through the wall.(H.C.)

7. “360°” Perception Without Limiting the Field of Vision

A “360° spherical” perception is very common during NDEs:

I was surprised that I could see at an angle of 360°, I could see in front, I could see behind, I could see underneath... (J.M.)

I had a 360° spherical-like vision. (X.S.) I had a 360° angle of vision. ... (N.D.)

Tweedee is usually as limited as we are : he can only see what is in front of him. If he looks at the painting on the living room’s wall, the table and the stools surrounding it are behind him, therefore out of his visual field. If he now moves to our own external visual perspective, he will “see” everything around him –or more precisely around his point of projectionwithout any movement. This “360°” perception can be interpreted as a “centrifugal” global perception where the subject is interested in what surrounds him:

It is not like the view from here, which is limited in its field of vision and acuity, which is dazzled or impressed by different things such as light or darkness. The vision is only focused when we move, as if we were aiming at target. Otherwise, we see everywhere.

Jourdan: *“Did you have the impression you had a bigger angle of vision, that you were seeing in front and behind you simultaneously?”*

Yes, without physically turning around, I could see everywhere. (Be.N.)

I had a global perception of the room, like a sphere. My field of vision was larger than usual. Global vision without the need to turn my head left/right or even to turn around. I did not need all of this. (F.E.)

In addition, we can notice the perspective that “changes a little” while the vision remains complete. This is exactly what happens when we watch the layout from a close and moving point of view.

I could see the whole room under me despite this position, and in particular a physical body lying on the bed, detached from me, far away, which I knew was my body, but which I wasn't inhabiting at that moment (...) It was then that I noticed I could move around in space voluntarily. This was interesting, new, and so I made a few trial movements. It seems to me that although my view of the room was always complete, panoramic, that the perspective changed a little according to my movements and my position in that space. (F.I.)

8. Perception “From Everywhere Simultaneously”

Our visual perception usually originates in a single vantage point. Obviously, this restriction disappears during many NDEs:

I visited various places I managed to identify afterwards. I remember a window in a village, a building with very white plaster, sand-carved windows. My curiosity was attracted to details. This is quite important, since we cannot do this normally, like seeing inside and outside at the same time, an impression of a quasi holographic vision... Not a panoramic view, but seeing in front, behind, all details simultaneously which is completely different from ordinary sight. It is very rich. (A.S.)

Tweedee's attention is now attracted by his own body, his point of perception being at a few centimeters from the plan. He will obviously be surprised to simultaneously “see” both his hands, the back of his head as well as the tip of his nose. It is a “centripetal” global perception now. For him, the sole way of understanding that will be the impression of “seeing” from everywhere at once:

I could see from above, 360° and from all sides, all at once. I see/am/feel this matter with my “sight from above” I see/am/feel this matter from underneath, I see/am/feel this matter which fills the room more and more, I see/am sideways, in profile, underneath, in front, behind, from everywhere, I am the spectator/actor/scene. I had a 360° spherical-like vision. I saw everything and had different points of observation: above, sideways, from the front, underneath, it was really extraordinary to see and be all of it at the same time. When I saw the sofa, the furniture and the room in which I was, I was simultaneously above, sideways, from profile, facing forwards... it was very clear. (X.S.)

I noticed : “we see everything from all sides simultaneously!”, I could see everywhere. (N.D.)

As the distance between him and the observed universe is increasing, he can also, just as we do, “see” simultaneously different places:

And then I realized that I was both in that space and out of my body. I saw myself lifeless on the bed, I felt my body very heavy, I (my mind? my soul?) got to float around the room. On the one hand, I saw my friends who had gone to play cards, on the other I saw the basement window that attracted me. (K.E.)

Remembering that our vantage point is usually confused with the place we find ourselves in allows us to understand the NDErs who claim having “been” everywhere, J.M.P. who reports having seen an entire clinic and having “been” everywhere at once, and finally A.L. who describes an “enlarged vision” and “was” simultaneously at home and at her grand mother’s:

Here you see this, then elsewhere you see something else, you know everything, from one place to another from the spot where you are. For example, if I want to go to the window, I have to move. But there you don’t move, you’re everywhere. Unbelievable, but it’s great! (J-M.W.)

...because I found myself above, on the bottom, everywhere all at once in the clinic... I told you earlier on that I was in the bedroom or more precisely in Mrs.E’s bathroom. So, to tell you whether I used the stairs or not, no, I think not; hmm... This displacement cannot be explained since I was downstairs and upstairs, and everywhere all at once actually. (J.M.P.)

The funny thing is that we have a greatly enlarged vision of things. It was as if I was in many places at once. After their shower my children went to the village, to my grandmother’s who lived in a house opposite ours. It was on the other side of a big valley about 800 meters away. She often watched what was happening at our place with her binoculars. So, at the same time, I also found myself at my grandmother’s, who was saying: “Oh, something must have happened over at the parents’ place because the ambulance is there...” She was watching with her binoculars, the children watched with her through the window and I, was behind them! It is a very strange impression, everything I saw was very luminous, very clear and my senses were sharpened, a much sharper perception of things, I saw and heard everything, all the while being pretty much in a coma. (A.L.)

9. Perception by Transparency

The cases of perception by transparency are recurrent in NDE accounts:

I could see everything at once and if I focused on one thing, I could see this thing through any obstacle and in every detail, from its surface to how its

atoms were organized, truly a global and detailed vision. (M.L.)

I could see in front and behind oneself simultaneously, through objects, a holographic view. (A.R.)

This means that I did see the entire accident, I left the car and could see myself from above, thus the car's roof was transparent. (P.F.)

When I left my body, I could see through all objects. (C.C.) A very wide vision, through the walls if I wanted to. (K.E.)

This seemingly strange perceptual feature becomes easily understandable within our extra-dimensional model. Indeed, could Tweedee hide anything from our eyes?

Let us return to his house, in which there are at least two things he cannot usually see: a masterpiece painting in a vault placed inside the wall separating the hall and kitchen, and the identity card he has been looking for several days lying behind the couch.

Just like X.S who had the impression of seeing through the couch, so Tweedee will also have the impression of seeing the front and back of the sofa, his ID card, the two sides of the wall and the painting hidden within it, all at once. In our world as much as in his, when we can see both the front and the back of an object as well as that which stands behind it, it simply means that this object is transparent:

I also saw everything that was happening around me. It was in a tent and thus very dark. I went out of the tent very quickly, but the funny thing was that everything was transparent to me. It was very fast because I was rising rapidly, and I saw through the tent. (P.T.)

I was in a global vision, I could see as if I were using my eyes, with clarity, I saw everything at once, I could see everything at once, the impression of seeing backwards and transparently. Sometimes as if I was inside my own eyes. (J-M.M.)

I saw myself exit, since I saw my body on the operating table. I was above and could see everything, everywhere, even through the surgeon. We see everything. -Could you see behind yourself or through objects ? Yes, through objects. (H.C.)

If the NDER's attention is attracted to a detail, this latter will be perceived without anything being able to hide it. In fact, anything which could stand as an obstacle for normal vision such as a pocket, a curtain, a vault or a wall, is not so anymore:

From the memory of where my bed was placed -in the old people's ward- and of how it was situated in the corner of the room : the door and the

coming and going of the personnel were to the right of my head... Also, I think my normal sight should have been cut off and limited due to the wall stopping at my bed. This wall should have limited my visual capacity - and I feel troubled remembering that... (F.E.)

I felt like a soap bubble with eyes strolling about above at ceiling level, in a space which seemed a little “closer” than real space. Behind a wall was a woman dying in the resuscitation room. I saw the instruments, the doctors’ gestures and their conversation, I could see through the curtains which hung in front of the glass partition. (J-P-L.)

I could see up close and also transparently. I remember seeing a stick of lipstick in one of the nurses’ pockets. If I wanted to see inside the lamp which illuminated the room, I’d manage, and all of this instantly, as soon as I wanted to. (J.M.)

If we look closely at Tweedee and his step-mother, we will see a spiral pattern representing their internal organs, which, for them, are usually as hidden as ours. But now that Tweedee perceives his own body from our vantage point, he is able to “see” inside or through his body... exactly like NDErs do:

I saw all around me, I saw the inside of my body. (M.H.)

After a while I see my “hand made out of crystal” and I tell myself, “There I can see all the small blood-vessels, but how can it be, there I see all the small blood-vessels in my hand?”. It amused me, nothing more. (D.J.)

When I was at ceiling level I could see through myself. (Be.N.)

During the excision of a vesicle in September 1972 and during the anesthesia I found myself...well, floating on the left of the ceiling and looking down on the people operating. I was surrounded by medical personnel, at least 6 people who seemed to be working on my body. I had the time to see, to see...well...I had a very sharp vision and saw through a section of the table. I saw through the operating cloth which is around the operation... the shoes of...of one of the resuscitation team probably...One of them had untied shoe laces. Well, I went through the fabric and so...I came to the conclusion that they were actually resuscitating me. I therefore had the time to realize that it was my body and off I went into the tunnel. (F.U.)

10. Dynamic Perspective Effects

Until now, we have detailed only “static” effects. But it seems that in some cases the point of perception is likely to move, that translates as some new “dynamic perspective” effects.

Let us remember that Tweedee has only notions of moving along length and width, but not at all in height. How can he interpret his perceptions when the distance between his point of perception and his body gradually increases in a third dimension? Going up “perpendicularly”, he moves away from his body and everything in its vicinity, while remaining above it. M.M. uses a nice expression to describe this feeling of moving away from her body in a direction perpendicular to our universe:

After the crash, I left my body in a “geographically total “ manner. I was everywhere at once, with a panoramic view. (M.M)

Here is another way to describe the same perception:

After what I call the familiarization with the “walking around” state, I “went away” while I’m sure I stayed at the same place, I would say that my “sight” got “wider”. (K.E.)

As Tweedee can see (and then “be”) everywhere while being nowhere in his own universe, he can also describe this perceptual conflict as being “everywhere and nowhere at once”:

I spoke again to the people involved and they were very surprised that I knew exactly what they told me during these times. Like the nurse to which I gave the names of those who came to see me, who thought that someone had told me ... It’s as if all my senses were magnified. I could “feel” the people, “guess” them (something that still often happens to me). My vision seemed wider, I could have heard, understood and followed several conversations without difficulty if I wanted ... It was very strange because I seemed to be “everywhere and nowhere at once “ and with such clarity ... (M.Q.)

If he goes up even higher, he will see his body getting smaller and smaller. In his own universe, a thing will look smaller only if he moves away from it, but at a certain point the walls will prevent him to move back farther. Here is another perceptual conflict : considering the long distance from which he perceives now, he obviously ought to have crossed a wall, which then “seems to move back with him” :

Very slow moving, diagonally to the ceiling, upwards from the table that was there, as if I was there. But the ceiling seemed extremely high, it seemed that as far as I went upwards to this spot, the ceiling went up the same time as me. (C.F.)

Another way of describing the conflict is to “see through the concrete, and at the same time it is not the same thing” :

First, I watched all this bustle. Then I realized there was a body. I did not say, but when I say “up” is not a sight from two to three meters. I was much higher, much higher. I had a perception, an overview. I was not at three meters up. It was a holistic, panoramic view into the room. But from very

high as if I could have seen through the concrete and at the same time it is not the same thing. I would rather say that I was in another dimension of space where I had another vision capability as if I were both very close and very far because I could see very fine details, every detail. I saw this body and at first I did not realize it was my body. (P.B.)

11. Peculiarities of Time Perception

Until now, we have considered the perception of a 2D universe from a third dimension that allowed us to understand the particularities reported by the NDErs. These latter seem extremely similar to those which would appear when a 3D space is perceived from an external vantage point, thus situated in an additional spatial dimension.

This notion of a fourth dimension is far from new. As a purely spatial extension, it has been evoked in the 19th (Bork 1964) and early 20th century as mathematical and geometric speculations (Bragdon 1913, Manning 1914, Durrel 1938, Rucker 1977, 1984), within metaphysics (Willink 1893, Zollner 1901, Gardner 1981), philosophy (Kant 1783) as well (remember some paintings from Picasso showing a model seen from several different places simultaneously!) in fine arts (Dalrymple Henderson 1983).

As it concerns for the moment only the perception of space, the modelling I have set out until now can be considered as a purely geometrical analogy in an Euclidian affine extended space. A similar hypothesis has been proposed independently in 2003 by another NDE researcher (Brumblay 2003). But is it sufficient? Since Minkowski, Einstein and Poincaré's works, it is well known that we live in a four-dimensional world, in which space and time are closely linked within a spatio-temporal continuum. Thus there already exists a fourth time-like dimension and if we want to be rigorous we have now to talk at least of a fifth dimension.

11.1. No time The NDErs' answers to questions about their perception of time during their experience led us to enlarge the 4D spatial model to a 5D spatio-temporal one. For a start, during a NDE the notions of time or of duration may disappear:

Feeling that time no longer existed. (S.D.)

In fact, there was no time, it was like a moment of eternity. (K.E)

Time did not exist. Now it's a real knowledge for me, time does not exist! (M.M.)

On the other side, time does not exist. One truly realizes it. Time is a completely mental concept. A thousand years may be instantaneous. (M-P.S.)

There I had the distinct impression of finding myself in a familiar place, a place I had known. As if I was gone for some time and then back home. Some time ... But what does it mean: "some time"? The concept of duration to which it usually refers was absent from this story. All I can say, even if I am unable to explain it, is that I existed in what might be called a kind of absolute timelessness. For this entire trip out of my body also unfolded outside of time. No body: no time! So I wonder whether our perception of temporal flow could not be an enormous performance, a joke. (M.N.)

Notion of time? No, I think we totally lose track of time. Maybe faster. But in reality I do not know, because it happens like flashes by, you see things, you hear, you see, it seems that everything happens at once. (A.L.)

11.2. An eternal present In other cases, a less drastic disappearance of time may be translated by various expressions. Many speak about an "eternal present", an "omnitime", or of a "time that no longer unfolds":

I could tell some facts that were going on at places where I was not supposed to be, since I was strapped to a bed in ICU. They checked, they found it surprising that this was true, as this seems surprising to some that I talk to them about what happened. About their lives. They call it the past because they reason in terms of time, but there is no time outside the body. There is no past. There is no present, no future. There is an eternal present. (P.M.)

I had a horrible feeling of eternity. I had an experience where time no longer unfolded. Furthermore, no past, no future, just an eternal present. I had the feeling that all that was real, the feeling of "living" in eternity. (I.H.)

Their experience led C.N. to study Einstein, and H.R. to speak spontaneously of space-time as a whole:

I had no notion of time during the experiment. It's just another time, in fact we are no longer in time, it's omnitime, that is to say, the eternal present ... One is truly in the eternal present. There is no more time. But having said that, after my return, I had a very very big problem with time, I was very obsessed by time, space-time, that is what made me study Einstein, the fourth dimension, etc. Because at the same time I was very anxious at the idea of having no time, no time enough to do what I had to do, it's funny; I had a very very big problem with time having been out of time gave me a problem with the chronological time that we live on earth. At least I know I was in that omnitime and omnispacetime. (C.N.) No notion of time and no limit. To my knowledge there is no possibility of comparing the earthly time and that of this dimension. The whole makes up this space-time, a form of totality, comprehensiveness. (H.R.)

There is an apparent contradiction in living “out of time”: to experience something, one must one way or another *last*. In fact, some expressions used by NDErs suggest that, during their experience, there remains at least a present allowing them to continue to exist, but it is also clear that this present of their own is no longer subject to the time arrow. Like an astronaut who is no longer submitted to gravity but who can watch the Earth with a telescope and see the fall of an apple, in their experience they “observe” a time which is no longer their own.

11.3. A second form of time We could consider a purely psycho-physiological explanation, as this “other form of time” might be a reconstruction by our brain, which is used to run sequentially, in particular with regard to memory, not to mention that the narrative of the experience can only be done sequentially too. But NDErs are adamant that, just like any of the other perceptual particularities we have reviewed so far, this second time was experienced during their NDE and is registered in their memory as well as the rest, as shown by some pertinent remarks:

It is a profound conviction that I do not explain, displacements are infinitely fast but there is still a before and an after, a chronology and a souvenir of the action that just took place, so there is a form time but I cannot explain it. (Be.N.)

All this took place “outside time” - or in a time that has no earthly reference. I had the impression of being outside of time, and yet there was some sort of time (it was another time). (A.T.)

As I said, in the absence of time there is still time. I know it sounds absurd, but I can not explain more. (J.X.)

The notion of time has nothing to do with ordinary life, that’s for sure. Physical, material time does not exist. Time does not flow. To say that there is another “time system”, I do not know. If there was a complete “timelessness,” all emotions would be simultaneous. For me, anyway, I had various feelings. Knowledge is complete and simultaneous. Emotions not. We react emotionally to what we see. In my opinion, there must exist another form of time, anyway.(C.P.)

Jourdan: “*Did you have a notion of time?*”

Yes and no. Yes because events followed events. I feel they did not occur at the same time. No, because the concept of time is not the same. There is no yesterday, today and tomorrow. I would say that events are instantaneous but emotions come and go. And then maybe I say that the events follow one another because the emotions are, themselves, quite distinct

from each other. Maybe it has nothing to do with the concept of temporality within ordinary life. No, because my own chronology doesn't match that of the ordinary world. Events that I placed before actually occurred afterwards when I asked for confirmation. And vice versa. (P.C.)

12. A Spatialized Time

Now, let us follow our 5D hypothesis through, supposing that during an NDE our 4D universe could really be perceived as a *whole* from an extradimension. If this hypothesis more or less reflects some reality, we ought to find some accounts reporting several kinds of temporal perspective.

12.1. Past, present, future, all confused If we walk on a lane, one part of the way is behind us, another is ahead. But if we see this lane from above, no more walking on it, not only are we nowhere on it but also, as they were relative to us, the notions of behind and ahead logically disappear. In the same way, if we are "out of time" we are no more subject to its arrow. Thus the notions of past, present and future can disappear or merge together. In fact, almost every feature we are about to review seems to translate a spatialization of time:

Past, present future are merged in a single concept, that's what I experienced (X.S.) Time no longer existed, past, present, future, all confused. (M.O.)

No sensation of duration, neither of waiting. No sense of past, present, future, as if all that was away from me. (F.E.)

During NDEs, frequently following the OBE stage, most patients describe a "life review". They report having been able to "see" or sometimes "live again" some moments or only significant scenes of their life, in chronological order or in reverse order. During this stage some additional anomalies and perspective effects concerning time will appear, strengthening the hypothesis that our universe could be perceived from an external vantage point.

12.2. Flying over time The non-locality of the observer in relation to the observed universe, which has helped us understanding the spatial 4D perspective effects appears to concern also time: to be "outside" the space-time would give the same impression of "being" everywhere at once compared to the latter. The expressions are various, but translate the same strange feelings of perceiving time from outside or flying above it:

I had access to both past, present, future and any place in space. (M.Z.)

I had no access to the future, I don't think so, but to the past yes, exactly so, as well as to present since I was seeing myself. It seems to me that I could move around. (P.B.)

I felt I could fly over time. (J-M.M.)

It seems to me that the time is no longer valid. That is, I don't take place within time. There is no longer any past neither future, everything is within the same plane. I got out of the timeline and I can contemplate it AS A WHOLE. But thirty years later, I am still unable to define accurately, using common words, this perceived lack of time ... and both its presence. When you move from one place to another in a flash, when one sees multiple views of the same situation, physically and temporally, that's not "every day life."

Jourdan: *"Have you had the impression of "flying over" time, as one can fly over a landscape, or see it from above?"*

Yes, in some ways, move forward or backward at the same time. "Time" no longer appears as fragmented, but as a one and single moment: a "continuum" related to will and free will. (D.S.)

There, the time does not seem to unfold as here. I would say it's "above", a place from where you can "govern" the events and the destinies of the earthly world. Neither was there any space. (A.T.)

I wonder about the word "time". I had the impression of "flying over" a certain portion of time, to fly so quickly but the time seemed at once long and short. That's funny. I felt able to move in time. (F.N.)

When I saw my life, it was like an accelerating videotape, somewhat as if I could fly over it, it goes fast enough to review one's life and yet it lasts forever, I can't explain. (Be.N.)

13. Spatio-temporal Perspective

What could be the predictable consequences of a hypothetical perception from outside our spatio-temporal continuum? Within the framework of this 5D model, everything happens as though NDErs were able to take enough distance to see in perspective not only the immediate vicinity of their body, but also their whole life. Then we could now expect some precise temporal perspective effects.

In our everyday experience, the concepts of time and space are fundamentally different. It is surprising to find several accounts of a uniqueness that has nothing natural nor intuitive for us. Even if he finds it difficult to explain (what we will readily admit), J-Y.C briefly summarizes relativity with some expressions that would have pleased Einstein. Even better, the way he watches his own life as what we could call a "4D spatiotemporal object" is amazing : a 3D

form under his eyes, with an “integrated time” which doesn’t unfold, a life he can see from every angle, get more or less closer or change his angle of view, focusing on one part or another... exactly as we do in our everyday life when examining a banal 3D object.

Indeed, at the time I receive this new form of intelligence, I find before me ... my life. I look at this 3D thing that is my life and which does not unfold. The time is integrated in it, it is no more linear. All of one’s life is visible and this “global” intelligence can read it, understand it. (...)

I saw my entire life, in relief, with all the details, people, situations. But in a time that does not unfold, life being seen from every angle with this universal or global understanding. My life was a form under my eyes, which contained everything and that I consulted.

(...) My whole senses were concentrated or condensed in a single understanding concept. The ability to understand and develop ALL, in its wholeness and in its detail. Should I have watched a car, I had known in one thought its mileage, fuel quantity, the wear of spark plugs, how many times it had turned left or right, the condition of all its parts, etc.. It is very difficult to share the encompassing of the three dimensions with the fourth, which merge in a concept that can be easily read when one gets this form of over-intelligence.

(...) Time is no longer linear. Your own life is in 3D and the fourth dimension is fully integrated. At that time, if I had watched a man, I could have known everything about him. His age, height, blood type, his siblings, the amount of all his taxes, his diseases, etc.. etc.. ALL in a single concept.

Jourdan: *“Did you feel yourself moving?”*

Yes

Jourdan: *“When?”*

To get closer to my life.

Jourdan: *“How did it happen?”*

A sort of sliding, zoom displacement.

The only “thing” that I was able to contemplate was my own life. An oblong shape, three-dimensional pink-orange hue (always “metallic” as having its own light). I could see inside, seeing-through my entire life course, including time without unfolding time. To see another part of this life I just had to °change my angle of view. (J-Y.C.)

This second example is less spectacular, but we find again a “frozen time”, a “whole life spread before (the NDEr’s) eyes, its slices being seen instantly”:

Totally calm and in a state of unimaginable bliss, I continued to float in a world of breathtaking clarity where the notion of time, that seemed frozen, defies understanding. In tune with this inexplicable timelessness the slices of my life were seen instantly, without any sense of duration. That’s quite difficult to explain with “earthly words.” My past life did not just appear to me like images following one another in a reverse chronology, as might be suggested by my previous comments. The events unfolded in accordance with the original script, but their succession went backward over the course of my life. Sometimes, and here it’s even more difficult to explain, I felt like my whole life was spread before my eyes, undifferentiated in its stages, and still without the sequence of events being linked to time. I know it’s crazy, totally incomprehensible, but that’s the way it happened. (M.N.)

14. Discussion

NDE are frequently viewed as hallucinatory experiences. Indeed, in spite of numerous confirmed accounts reporting precise details and scenes in the immediate vicinity of unconscious patients, for the time being we have no irrefutable proof about AVPs.

On another hand, the hyperdimensional model I propose allows to understand very simply every seemingly strange perceptions, implying that these experiences could follow definite rules.

So we are faced with several possibilities. The first one is an “inner” hypothesis : NDE are purely subjective experiences, the AVPs being the result of brain activity, this latter having “rebuilt” scenes and details very close to the reality from various elements gathered after the experience. Joseph (1996, 2001) provides evidence which he believes demonstrates it is the hippocampus which is responsible for the hallucinations of floating above the body. As detailed by Joseph (2001):

“The hippocampus contains “place” neurons which are able to encode one’s position and movement in space. The hippocampus, therefore, can create a cognitive map of an individual’s environment and their movements within it. Presumably it is via the hippocampus that an individual can visualize themselves as if looking at their body from afar, and can remember and thus see themselves engaged in certain actions, as if one were an outside witness (Joseph, 1996). However, under conditions of hyperactivation (such as in response to extreme fear) it appears that the hippocampus may create a visual hallucination of that “cognitive map” such that the individual may “experi-

ence” themselves as outside their body, observing all that is occurring. In fact, it has been repeatedly demonstrated that hyperactivation or electrical stimulation of the amygdala-hippocampus-temporal lobe, can cause some individuals to report they have left their bodies and are hovering upon the ceiling staring down. That is, their ego and sense of personal identity appears to split off from their body, such that they may feel as if they are two different people, one watching, the other being observed.”

If this hypothesis proves to be the correct one, that would at least lead us to explore the hypothesis of some 5D-like brain organisation, which could present some interest for cognitive neurosciences, neurology, psychology, and all those disciplines which generally seek to explore the nature of consciousness and the functioning of our brain. Like radioactivity at its very beginning, what appears to be only an oddity can conceal major avenues of research.

Another possibility is that of an “outer” hypothesis. Nobody, at present, can clearly define consciousness. We can at the very most safely say that it is part of our world, follows the laws of nature and has been for a long time our only tool to try to puzzle over it. Could it, in some unusual circumstances, show us the first evidences of additional dimensions?

14.1. Four or five dimensions? It is important to clarify some potential confusions if we envisage an extra dimension. We have seen that the first proposals about this subject date back several centuries. At that time, scientists reasoned within an Euclidean space -which comprises only spatial dimensions-, envisaging a fourth spacelike dimension that was a virtual mathematical or geometrical concept. Nowadays, the mathematical setting of relativity is a Minkowski space comprising three spacelike dimensions and a timelike fourth dimension. Then, as our visible universe is a 4D space-time continuum, and considering the multiple accounts reporting spatio-temporal perspective effects, the extra dimension giving an accurate background to the model I have set out would be a fifth one.

14.2. Recent extra-dimensions theories The first proposal of a fifth dimension, in order to unify electromagnetism and gravity, comes from the German mathematician Theodor Kaluza (1921) and the Swedish physicist Oskar Klein (1926). This theory was abandoned, but after a few decades appeared superstrings and strings theories, largely initiated by Peter Freund (1982,1985), who introduced extra dimensions of space in physics and found the mechanisms by which these extra dimensions curl up. These theories involve 10, 11 or up to 26 extra dimensions, which are compactified, curled up at each point of our universe with a finite minuscule size (about the Planck length, i.e 10⁻³³ cm in the K.K. theory). Obviously, this tiny size does not offer a sufficient distance to allow the perspective effects that we have reviewed.

Derived from string theories, which concern essentially particle physics, brane cosmology is based upon brane theories, which attempts to understand the weakness of gravity within our visible universe. In brane theory, a string is a 1-brane, a “membrane” is a 2-brane. In general a p -brane (p is the number of spatial dimensions, therefore a p -brane is in practice a $(p+1)$ space-time) is viewed as a slice inside a $(p+1)$ brane. Thus, according to this theory, our four-dimensional universe is confined in a 3-brane within a 4- brane, a “super”universe endowed with $(4+1)$ dimensions.

Following a first proposal (Antoniadis & al 1998, Arkani-Hamed & al 1998, 2000), Lisa Randall and Raman Sundrum established in 1999 two models of brane cosmology. In the first one (Randall and Sundrum 1999-1), the size of the extra dimension is finite, about 1mm, which is far better than the Planck length but still insufficient.

On the other hand, in the second one (Randall and Sundrum 1999-2) the extra-dimension might be infinite, which is perfectly suitable for the extradimensional modelling that I propose.

Another model, elaborated by Laurent Nottale (Nottale 1993, 2010, Nottale and Timar 2008), is scale relativity. Within it appear two interesting characteristics: a fifth topological dimension and a spatialization of time, which could explain the particularities that we have reviewed about the perception of this latter.

14.3. The Time issue During NDEs, our universe seems to be perceived not only as spatial but indeed as a whole space-time. Several testimonies seem to report some sort of time spatialization, and the main issue is to understand how that could be possible. Saying “our $(3+1)$ D universe is a subset of a $(4+1)$ D universe” implies that we have merely added a spacelike dimension, the time dimension remaining the same. Concerning this particular point, the status of time within extra-dimensional theories is not clear and above all I am not qualified to go further.

At the very most, I could perhaps say that we might understand the particularities described by NDERs such as “no time”, “eternal present”, “being out of time” by remembering that, according to relativity, an object or particle is subject to time – and therefore has a duration of its own - only if it has a mass, and therefore suppose that “that which perceives” during an NDE is massless.

Be that as it may, I hope one more time that qualified scientists will accept to think about that according to the accounts we have reviewed.

14.4 A predictive modelling? The modelling I propose, like every self-respecting model, must be predictive and lend itself to experimentation. We have seen that, to an observer whose vantage point is situated in a $(n+1)$ D universe, nothing can be hidden within a (n) D universe. Thus a very simple test

could be proposed, consisting of a hidden target (for example a colored drawing enclosed in a sealed envelope) put in the vicinity of places where NDEs are likely to occur (ICUs, surgery, etc.). Provided it is unusual and interesting enough, this target could attract the attention of an NDEr, who would be able to describe it after resuscitation.

15. Conclusion

In this short paper, I hope to have given the reader enough information so that he or she can make up his or her own mind about the hyperdimensional interpretation of perceptual particularities in NDEs. The fact that the perspective effects concern time as well as space, and that some patients without any training or education in physics were able to describe with their own words a spatio-temporal continuum seems to me particularly interesting.

To summarize, the particularities that we have reviewed could lead one to suppose that consciousness could be the result of some interactions between 4D and 5D phenomena and/or universes, an hypothesis we cannot simply dismiss and that is considered very seriously by some neuroscientists (Smythies 1994, 2003) and cosmologists (Carr 2008) as well as philosophers (Droulez 2010).

The look we have on a screen, a sketch, a painting or any 2D-like universe allows an instantaneous global information. Waiting for further research and results, the analysis of the perceptual particularities in NDEs in terms of global perception/acquiring of information, a concept that is coherent with our model, should allow us to conduct research calmly and in a purely scientific way. In addition, it should be free from all metaphysical a priori and use concepts which are already within our reach.

Whether the logic revealed by this analysis reflects a particular cerebral function, a new phenomenon or a combination of both, it casts doubt on purely hallucinatory interpretations of these experiences and constitutes an argument in favor of scientific research into NDEs, justifying a multidisciplinary approach gathering physicians, neuroscientists, cognitive scientists, philosophers, psychologists, anthropologists, and now maybe, mathematicians, physicists and cosmologists.

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