ANTHONY PEAKE

OPENING THE DOORS OF PERCEPTION

THE KEY TO COSMIC AWARENESS

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Foreword by Whitley Strieber

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FOREWORD

Anthony Peake has been on a long and captivating journey from the conclusions he drew in his first book *Is There Life After Death* to those he now draws in *Opening the Doors of Perception*.

Is There Life After Death proposed that the brain, at the point of dying, produced a flood of glutamate, which slowed down time perception and allowed it to carry out the life review commonly reported by those who have survived a journey to the edge of death.

However, over the subsequent years of research and writing, he has gradually come to believe that the brain is a transceiver rather than the exclusive generator of consciousness. In the current volume, he explores the possibility that consciousness not only exists outside of the brain, but that it is a universality of which the individual is a part and, holographically, the whole.

Here, Peake explores the nature of this external consciousness and

our role in it, with fascinating and extremely provocative results. He references the proposal by Nick Bostrom that was put forward in his groundbreaking 2003 article in *Philosophical Quarterly* 'Are You Living in a Computer Simulation,' now known as the 'simulation argument,' and also David Chalmers' famous 'hard problem' in which he stipulates that science cannot determine how the brain could generate self-referential consciousness.

He addresses the fact that recent discoveries by a scientific group at Fermilab in Batavia, Illinois, suggest that the universe is made up of digital information – that it is, as David Bohm and others have previously speculated, a huge hologram. Other recent studies further suggest that it is a two-dimensional surface and that what we perceive as reality is that hologram, projected into three dimensions.

Beginning with the proposition that Orchestrated Objective Reduction, which argues that the brain is essentially a biological machine that filters consciousness, which originates outside of it, Peake embarks on what I see as a groundbreaking exploration of perception and its substrate, consciousness.

Peake addresses the issue of the location of consciousness by analyzing the unusual brain states that give rise to distorted – or revelatory – perceptions, ranging from migraine through autism to schizophrenia and Alzheimer's disease. These various illnesses, by the different ways they distort perception, also open a door to what is actually happening not only to those beset by them, but to all of us.

I am, for personal reasons, particularly interested in all this. In 1985 I began having what has become a lifetime of close encounter experiences. But what were they, really? What are they? Among my initial theories was that I was a victim of the seizure disorder known as temporal lobe epilepsy. Yet when I not only tested negative for this, but was found to have

an unusually seizure-resistant brain, I was left at a loss.

While *Opening the Doors of Perception* does not solve the mystery of experiences such as mine, it does offer a possible direction for further study, which involves looking at the brain as a filter, and attempting to discover what it is filtering and why.

For somebody with a life experience like mine, *Opening the Doors of Perception* is a rich resource for expanding and deepening the question of what is actually happening that causes the extraordinary perceptions that have become my life experience. For example, I not only engage regularly with what appear to be aliens; like so many people who do this, I also engage with the dead.

Since my wife's passing in August 2015, this has become a profound journey, filled with complex witness to her presence involving myself and others that leave me unable to believe that some aspect of her being does not still exist.

In *Opening the Doors of Perception*, Anthony Peake points out that the belief – and it is no more than that, a belief – so general among scientists and many academics, that there can be no consciousness outside of biological structure, is an insufficiently robust explanation for who we are, where we are and what we are.

This book not only opens the doors to perception, its careful attention to scholarship and exceptional intellectual clarity throws them wide open.

—Whitley Strieber

Author of *Communion* and co-Author with Dr Jeffrey Kripal of *Super Natural: A New Vision of the Unexplained*

INTRODUCTION

The Doors of Perception

Weyburn is a small town in Saskatchewan, Canada. It is around 70 miles from the provincial capital, Regina, and just over 40 miles north of the USA border. With the exception of the fact that it is a major railway junction for the province, the only other fact of note about Weyburn is that it was, until 2006, the location of the Souris Valley Mental Health Hospital, an institution opened in 1921 which was, at that time, the largest building in the British Empire. At its peak it was home to around 2,500 patients. For decades it had an outstanding reputation as one of the most advanced hospitals in the world with regard to the experimental treatment of individuals with mental disabilities. This reputation attracted some of the world's top researchers in the field of mental illness. One such researcher was the British psychiatrist Humphry Osmond. In 1951, with his associate John Smythies, Osmond had moved to this isolated community with the intention

of using the facilities to understand if the similarities between early-stage schizophrenia and the psychological states created by substances such as LSD (lysergic acid diethylamide) were more than a simple coincidence: could something of significance be learned from them and used in a search for a cure? Osmond was aware that he would be allowed considerable freedom to conduct experiments on human subjects under carefully controlled conditions.

Osmond and Smythies, together with a biochemist, Abram Hoffer, worked almost exclusively with alcoholics. They were all both pleased and surprised at how successful their research was. After being treated with LSD, between 40 per cent to 45 per cent of subjects had not returned to drinking after a year. The team were also delighted by the results of their work with schizophrenics. In April 1952 Osmond and Smythies published a controversial paper asserting that schizophrenia may be caused by the body creating its own hallucinogenic compounds. A hallucinogen is a chemical substance that can change how the brain functions and, in doing so, can bring about increased or decreased sensory perceptions and generate hallucinations. Osmond and Smythies advocated that in order to treat schizophrenics effectively, physicians and psychiatrists need to experience the schizophrenic world for themselves, adding that 'this is possible to do quite simply by taking mescaline'.[1]

This paper can reasonably be considered to be one of the most influential academic papers to impact on modern popular culture. Quite by chance it was to come to the attention of the USA-based British author, Aldous Huxley. Huxley had long been interested in the power of hallucinogenic substances and in 1931 had written a novel, *Brave New World*, in which the citizens of the future consume *soma*, a substance that facilitates a 'holiday' from everyday reality. At the time of writing, Huxley was somewhat negative about such substances: he had once described hallucinogenic drugs as 'treacherous and harmful ... they kill first the soul and then the

body'.[2] However, in 1962 in his last novel, *Island*, he takes a totally different approach. In this book the inhabitants of the fictional island of Pala use a drug called 'moksha' for spiritual and mystical insights. Like *Brave New World's soma*, moksha was based upon a known hallucinogenic substance, mescaline. However, moksha is presented in a hugely positive light: it is a substance that facilitates enlightenment rather than one that poisons the soul. What had changed so radically Huxley's opinion of hallucinogens? The answer is a simple one: in 1931 Huxley had no personal knowledge of such substances but by 1962 he had experienced many times the particularly powerful hallucinogen referenced by Osmond and Smythies in their 1952 paper and had become convinced that this substance could facilitate the opening of human consciousness to a much wider experiential universe.

In 1937 Huxley had moved to California and become heavily involved in Eastern mysticism. In 1945 he wrote *The Perennial Philosophy*, a book that presented a series of quotations from mystics, sages and saints across the centuries, each of which suggests an inner truth within all religious and mystical traditions: a 'perennial philosophy'. In effect this 'truth' is that all consciousness is a singularity and that the reality that is presented to us by our senses is an illusion, known as *maya*. All things are simply aspects of the Divine.

It was at this time that Huxley first heard of the power of a substance called peyote, and its derivative, mescaline. His involvement with the Indian mystic school of Vedanta had changed his opinions regarding altered states of consciousness, for he now saw these to be ways of encountering the Divine within. He had also heard that mescaline created amazing hallucinations and seemed to improve a person's ability to see colours and shapes. Acutely aware that his eyesight was deteriorating, he was keen to find ways to facilitate visual experiences. But the problem was how to acquire some mescaline and how to try it under controlled and safe conditions.

This problem was solved in spring 1952 when Huxley read Osmond and Smythies' article. He contacted Osmond and asked if he could assist him in trying out mescaline. He suggested that maybe Osmond and Smythies would like to join him at the upcoming American Psychiatric Association's conference in Los Angeles in early May 1953. At that stage Huxley was attempting to procure some mescaline from a doctor friend. This proved to be unsuccessful within the timescale, so Osmond agreed to bring with him from Canada 0.4gm of the hallucinogen.[3]

Huxley had long been interested in the theories of French psychologist Henri Bergson. Bergson had suggested that the brain acts as a limiting device, taking out much of the information available to consciousness. Huxley argued that this 'filter' gives attention only to those inputs that are necessary for, as he termed it, 'biologically profitable channels'.[4] Disease, mescaline, emotional shock, aesthetic experiences and mystical enlightenment can all have the effect of inhibiting this corrective action and, again as Huxley stated, 'permitting the "other world" to rise into consciousness'. He was hopeful that his filters would be suitably inhibited.

A few days later Osmond dissolved the mescaline crystals in a glass of water and gave it to Huxley. In a letter to Harold Raymond, his editor at the publishers Chatto and Windus, written on 21 June 1953, the writer described his subsequent experience:

> It is without any question the most extraordinary and significant experience available to human beings this side of the Beatific Vision; and it opens up a host of philosophical problems, throws intense light and raises all manner of questions in the fields of aesthetics, religion, theory of knowledge ...[5]

Huxley had already started to write up his experiences in a long essay. A year later this appeared as a short book entitled *The Doors of Perception*.

The title was carefully chosen: it is taken from William Blake's poem *The Marriage of Heaven and Hell*:

> If the doors of perception were cleansed everything would appear to man as it is, Infinite.
>
> For man has closed himself up, till he sees all things thro' narrow chinks of his cavern.

And this is exactly what the mescaline experience did for Huxley: it cleansed the doors of perception and allowed him to experience the universe the way it really is, rather than how it is presented by the senses. In the book he creates a concept that he terms 'Mind at Large', with regard to which he acknowledges a debt to the philosopher C D Broad and, in turn, Henri Bergson. Expounding his 'theory', he writes:

> ... each one of us is potentially Mind at Large. But in so far as we are animals, our business is at all costs to survive. To make biological survival possible, Mind at Large has to be funnelled through the Reducing Valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this particular planet.[6]

This idea that the brain acts as a filter for sensory experience does not conform with the general view. We tend to assume that the brain simply presents the outside world to consciousness 'as it is'; and that what we perceive is a literal re-creation of what is 'out there'. It may come as a surprise that this viewpoint is termed 'naïve realism' by modern experts in consciousness studies. By this they are suggesting that we are fooled by the brain into believing that what we see, hear and feel is an accurate

facsimile of the real universe. Neurologist Robin Carhart-Harris suggests that 'a lot of brain activity is actually dedicated to keeping the world very stable and ordinary and familiar and unsurprising'.[7] In other words, the normally-functioning brain's role is to *protect us* from the universe as it really is. Hallucinations, it seems, are glimpses of the real universe we experience when the Huxleyan 'reducing valve' is switched off, or at least turned down.

Through a Mirror Darkly

I have called this book *Opening the Doors of Perception* because I believe that the time has come to re-evaluate the model of perception suggested by Huxley and to view it through the lens of our modern science and, more importantly, to evaluate the evidence taking into account how the web, virtual reality and holographics have changed forever the way we appreciate the external world. I hope to present a model of 'reality' that will totally support what Huxley wrote all those years ago. As with all my books. this will be a journey of mutual discovery. Along the way I will point out sights and scenes that I found of interest on my first exploration of this territory. These may seem rather random but they do have a purpose. However, as with all journeys I think it is important that we have a map of the territory so we know where we are going and why.

In my book *The Daemon* I introduced the idea that human consciousness is split into two independent foci of self-aware consciousnesses. I call these the Daemon and the Eidolon.

I subsequently proposed that Daemonic consciousness is embodied in the non-dominant hemisphere of the brain and Eidolonic consciousness in the dominant hemisphere. In this book I will be presenting a revised model: this will be introduced later. However, for clarity I plan to continue using this structure until I am ready to introduce the revised model.

Thus, effectively we have two distinct areas of awareness within the

human brain. The Eidolonic perceives only the information that has been heavily censored by the Huxleyan 'reducing valve', whereas the Daemonic receives all that is available and in doing so perceives the universe as it really is, a multi-dimensional reality known for centuries by the term 'Pleroma'.

Pleroma is Greek for 'fullness' and has been used for at least 2,000 years to describe the universe hidden from human perception. It symbolizes a state of completeness rather than deficiency, and in this way suggests perfectly how Huxley's 'reducing valve' takes away most of the 'fullness' and in doing so allows us to focus exclusively on the immediate needs of survival.

However, the power of the 'reducing valve' can be affected by various factors, including illness and differing neurological configurations within the brain. I believe that there is a spectrum of perception that runs from 100 per cent Eidolonic to 100 per cent Daemonic and that all conscious beings sit at one point or another along this continuum. In effect, this is a reflection of just how 'open' are the doors of communication between the right and left hemispheres. In this book I will present evidence for this spectrum – which in honour of Aldous Huxley and his pioneering work I should like to term the 'Huxleyan spectrum'.

This book is presented in three sections. Part One I have called 'The Key'. This discusses evidence that there is a wider perceptual universe that is denied Eidolonic consciousness. I present circumstances in which, for a short period of time, the effects of the reducing valve can be overridden and a tiny glimpse of the Pleroma can be gained by the Eidolon. Part Two, entitled 'At the Doorway', discusses how a series of neurological conditions can facilitate longer glimpses of the Pleroma. These include classic migraine, temporal lobe epilepsy, schizophrenia, Alzheimer's disease and autism. I suggest that all these neuroatypical 'illnesses' are part of what I call the Huxleyan spectrum. Part Three is entitled 'Glimpses Through the

Doors' and, as the name implies, describes in detail the experiences of a handful of individuals who have gone through the 'entrance' and perceived the Pleroma with varying degrees of clarity. I then finish off the book by pulling together what we have learned and presenting to you a hypothetical model of what may be actually taking place.

First, I would like to expand a little on the territory. So pull on your intellectual walking boots and join me in taking our first faltering steps ...

PART ONE:

THE KEY

CHAPTER ONE:

Hallucinations

What is our location? The view from the I.

The only thing I know with absolute certitude is that I am something perceiving something. There seems to be a world out there beyond my body that I can interface with by moving my body within what seems to be a consistent three-dimensional space. I also seem to move through time, which really is defined by things around me, including my body, moving from a state of order to a state of disorder. With regard to my body, this process is known as ageing; and it happens in time. Other objects and entities that exist within the three-dimensional space also seem to have this gradual deterioration. However, the parts of my body that I can see seem more part of this external world than of the internal world that involves 'me'. This inner something looks out through my eyes and in some mysterious way wills my body to take certain actions. These may involve my manipulation of my immediate environment by picking things up, moving them around, or putting them together to create new configurations of objects. I can

also will my body to stand up, and by use of my legs I can move within the three dimensions of space. When I move from one location to another, my viewpoint changes and I see external objects from a different angle. This suggests to me that this outside environment has an existence independent of my perception of it. If I close my eyes and open them again, everything in my visual field is where I expect it to be. I am also aware of other beings who exist within this world. In general terms, many of them look like me. They also move around in this world and seem to perceive it in the same way that I do. They react to stimuli in the same way. I can also communicate with these other beings; and they will, if they feel so inclined, respond to me. I do this by using my lungs to expel air and make certain vocalizations. These vocalizations leave my mouth and create vibrationary waves in the air around me. These waves enter the ears of those around me and cause their eardrums to vibrate. This vibration is converted into an electric signal and sent to a part of their brains where it is perceived as a series of sounds. Without eardrums to detect them, these sounds do not exist except as air vibrations. But eardrums allow the sounds to be detected and their meaning interpreted, according to our mutual understanding of their significance. In this way I can conclude that these other beings are similar to me and that they similarly perceive the world. I can use these mutually understandable vocal sounds to share information with them regarding my perceptions.

What is the 'I' that is doing the perceiving? This seems to be the focal point of all these stimuli. Indeed, it is the receiver and processor of the information. However, this point of self-aware consciousness seems to exist in a place removed from the physical world – though by the same token I must, in some way, be created from elements within the physical world.

Our present scientific paradigm is based on a very simple but powerful philosophy: the idea that by breaking anything down to its constituent

elements, we can understand how it works. For example, by breaking an automobile engine down into its bits and pieces, a person with a basic understanding of engineering, chemistry and physics will be able to understand how that automobile engine can create movement and speed. A biologist with knowledge of chemistry and chemical processes can take a plant apart and understand how the plant metabolizes energy from sunlight. This process of breaking things down to understand how they function – known as materialist reductionism – is the most powerful contribution Western science has made to our understanding of the universe. Physical objects can be reduced to their constituent parts and thereby give up their secrets. This has worked well over the last three or four hundred years. However, there is one thing that is immanent in the world that defies such reductionism, and that is because it is non-material and therefore cannot lend itself to a reductionist analysis. That something is what, as I read back these words, is processing them from shapes on a page or computer screen into images and ideas. It is central to each and every one of us. It is called self-referential consciousness.

Our technology is sufficiently advanced for us to be able to monitor the brain and, in doing so, we can isolate what parts of the brain do what. Modern techniques such as PET scans, CAT scans and other sophisticated instruments can show exactly what parts of the brain light up when certain actions are considered or certain perceptions or emotions are perceived. Radical surgery and brain injuries have shown us where memory is processed (but not where it is stored) and how personality can be changed by damage to certain areas of the brain. However, all this provides us with just an overview. It does not tell us how self-referential consciousness is created. There is something in my head that looks out on the world. It has memories, hopes, fears, loves, hates, ambitions and many other traits. It is self-aware and is keen to understand itself and where it has come from. How can I 'be'?

Let us try and apply the materialist-reductionist model to the brain in an attempt to find consciousness. We need to break down the brain into its basic building blocks.

If you look at a section of brain matter, you will discover that it is composed of neurons, or nerve cells. At birth the brain contains around 100 billion of these cells. Each neuron has a cell body and tens of thousands of tiny branches called dendrites. These dendrites receive information from other neurons. Each neuron also has what is called a primary axon; this is a projection that can travel great distances across the brain. Each neuron makes contact with each other neuron at a point known as the synapse. The neurons do not actually come into contact with each other. At each synapse is a tiny gap between one neuron and its neighbour. These 'synaptic gaps' are extremely short, about 200 to 300 angstroms across (one angstrom equals one hundred millionth of a centimetre: hence we are close to the atomic scale of dimensions here). Messages are transferred across the brain via these synapses. Depending upon what you are thinking, certain synapses transfer electric current in the form of calcium ions. This is called 'firing'. Some synapses will fire and others will not. So, in a way that is rather similar to traffic lights set on either red or green, the flow of messages across your brain can be channelled in various directions.

At the end of each synapse is a receptor site. These sites are of many different types and each one is designed to work with one of a number of internally generated chemicals known as neurotransmitters. There are two types of neurotransmitter, since they can be excitatory or inhibitory. In simple terms, the excitatory variety stimulates the brain to do something and the inhibitory variety calms it down. Over 100 of these have now been identified. The major excitatory neurotransmitters are glutamate, norepinephrine and epinephrine. With regards to the inhibitory variety, gamma-aminobutyric acid (GABA) and serotonin are the major players. Those that bring about a response at the adjoining receptor site are

technically known as agonists; and those that block a response are known as antagonists. Of special relevance to this book, is that there is another major neurotransmitter, which facilitates both excitatory and inhibitory responses in neighbouring receptor sites. This substance is known as dopamine.

So what have we found? An amalgamation of inanimate molecules reacting to a sea of similarly inanimate electrons: in other words, chemistry reacting with electricity. It seems that the best answer we can find is that consciousness is an 'epiphenomenon' of brain processes. It just 'kind of happens' at some point when a crucial level of complexity is reached. By the addition of one more process, one more molecule, one more electron, consciousness just pops out of nowhere. This reminds me of the cartoon by Sidney Harris in which two scientists stand in front of a blackboard. On one side of the blackboard is a mass of mathematical notation, matched by a similar mass of mathematical notation on the other side. Linking them are the words, 'Then a miracle occurs'. The older scientist points at the comment and says to the creator of the formulae: 'I think you should be more specific here in step two.'

There is a growing band of scientists who believe that the only viable explanation of how inanimate molecules and electrical impulses can be responsible for a self-referential consciousness is that the brain does not 'create' consciousness, it 'receives' it. This is analogous to a radio or TV receiver. The source of the TV programme viewed on the screen is not inside the back of the TV – in the same way that the radio announcer is not in the radio. An even better analogy is the location of the Internet. It is not located in your computer hard drive but is supplied on a need/demand basis. It exists in an informational 'field' that surrounds us. This radical model is known as 'Orchestrated Objective Reduction', and it was proposed as a specific response to a famous question raised by Australian philosopher David Chalmers.

Chalmers argued that with regard to consciousness there are two problems. The first is understanding how the brain actually works, its neurochemistry and its physiology. This is what Chalmers calls the 'soft problem'. By this he means that our present scientific paradigm has the tools to eventually crack this mystery. However, solving the soft problem will supply us only with an overview. We will be no closer to knowing how self-referential consciousness is created. The question *How can I 'be'?* confronts us still.

Chalmers calls this question the 'hard problem'. It demands answers regarding the true nature of the recipient of this brain-presented information – the entity inside the head that reacts to and evaluates these stimuli.

Arizona-based aneasthetist Professor Stuart Hameroff believes that the answer to Chalmers's 'hard problem' may be related to another neurological mystery: how do anaesthetics actually work? Although we know which particular chemicals can be used to bring about an apparent cessation of consciousness within the brain, science cannot tell us *why* this occurs. Given his profession, Hameroff had been long intrigued by this. After much research he concluded that the loss of consciousness is brought about when an anaesthetic impairs the functioning of small structures in the brain known as microtubules. These tiny rod-like assemblies act as scaffolding for the neurons, the cells that make up the brain. The number of microtubules in the human brain is truly staggering. The brain, with its approximately 10^{11} neurons, has 10^{18} microtubule units. This is 10 followed by eighteen zeros – in other words, approximately a 'quintillion' of these tiny structures can be found in the average human brain. Hameroff believed that in some way microtubules are responsible for the generation of consciousness, and that anaesthetics effectively switch them off. In the same way that switching off a TV effectively prevents it from processing the signal: switching off the microtubules prevents them from processing

consciousness. If this is the case, then consciousness exists somewhere other than the brain, just as a TV signal exists outside the receiver.

Hameroff then became intrigued by the ideas of British mathematical physicist Roger Penrose. He had read Penrose's book *The Emperor's New Mind*, in which Penrose postulated that consciousness is created by processes observed in quantum physics. This was the idea Hameroff needed to make his microtubule model work. He contacted Penrose and suggested a collaboration. Penrose agreed. Two years later, in 1996, the two researchers published a paper that introduced to the world something they called 'Orchestrated Objective Reduction' (ORCH OR).[1] In this Penrose and Hameroff argued that quantum vibrational computations in microtubules were 'orchestrated' by synaptic inputs and memory data stored in the microtubules.

Not surprisingly, this theory was heavily criticized at the time, and continues to be so, by those wedded to a strongly materialist-reductionist model of reality. The very mention of 'consciousness' in connection with quantum physics brings about a shower of criticism of which the Spanish Inquisition would have been proud. But over the years there has been mounting evidence (carefully ignored by the mainstream) that ORCH-OR may be a working model that is worth further enquiry and research. The initial criticism, by Max Tegmark, was that the brain is simply too 'warm, wet and noisy' for delicate quantum processes. However, it has now been discovered that plant photosynthesis involves quantum coherence, as does the amazing ability of birds to navigate by sensing electromagnetic fields, and even, surprisingly, our sense of smell.

Another research team, at the University of Pennsylvania, have also offered an explanation for the mystery of how anaesthetics selectively erase consciousness; and, again, this involves microtubules.[2] Such research shows that there is growing evidence that looking for the location of consciousness in the brain creates, in effect, a 'hard problem', because

mainstream scientists are looking in the wrong place. It is like taking apart a TV set to find the actors and the studio. However thoroughly one 'reduces' the 'material' in the TV set, taking apart its components or breaking them down to their molecular structure, the actors and studio will continue to elude detection. This is because they are not there, and never have been there.

So the 'something' doing the perceiving is not quite what it seems to be. I believe myself to be inside my head looking out at a solid, consistent world, because that is what my senses tell me. I feel that I exist a few centimetres behind my eyes and that I look out from that location. I can see my hands typing on the keyboard and I can turn to look outside the window of my study and see a typically grey English September day. But what did Huxley perceive that was so different on that late spring day in 1953? Was the far more intense world that his heightened senses presented to him a glimpse of the true nature of reality, or was it simply the chemical compound mescaline creating hallucinations?

Hallucinations: The Facts

That we all experience two perceptual universes is fairly evident. The universe of waking experience is shared with others and takes place in a landscape that is consistent and seemingly solid. Others seem to agree with our own perceptions as to the objects within this space. The reason we believe this 'reality' to be 'real' is that others, by their own independent actions, confirm it. If I say to another person who shares my language, 'Look at that black dog next to the tree,' the person will look over and by their response or actions confirm that there is, indeed, a black dog next to a tree. I have shared the same visual experience with somebody else, and in doing so I have confirmed it as coinciding with actual fact. This makes the event veridical. It also makes it consensual, in that both myself and my associate have agreed that there is a dog standing next to a tree. A reality

confirmed by such a process is known as 'consensual reality'. An optical illusion, although not consistent with normal perceptual reality, can be shared by others and is therefore, by definition, 'consensual'.

Some philosophers have long argued that all sensory experience is internal: the only way to differentiate between what is accepted as 'real' and what is categorized as an hallucination and therefore 'unreal' is that, with an hallucination, only the perceiver is aware of the perception.

However, imagery that is not stimulated from external sources (not brought about by electromagnetic stimulation of the retina) causes a real problem for our present scientific model. If there is an absence of light, then how can anything be 'seen'? Where do these 'images' come from and how are they processed? Are the visuals that accompany hallucinations using the same neurological constructs as normal vision, or are they created in a totally different way?

This area of investigation has been subject to a huge amount of controversy.[3 4] It is my intention here to review the history of research into visual imagery and perception. In doing so I hope to present evidence that they are simply aspects of the same phenomena.

The conventional belief regarding hallucinations is that they are very different from 'normal' perceptions. Normal perceptions present to consciousness an image of external reality that is an absolute and accurate depiction of what is 'out there' in the 'real' world. Hallucinations, on the other hand, are totally brain-generated. According to the *Oxford Companion to the Mind*, a hallucination is defined as a 'sensory perception in the absence of external stimuli'.[5]

This idea that hallucinations and normal perceptions are totally different is technically known as the 'dual process model', a concept first used by psychologists Charles McCreery and Celia Green. Green and McCreery created this model simply to reject it. They suggest that all waking perceptions and hallucinations are ontologically the same experience.

Green and McCreery argue that although the hallucination itself is created by the brain, it is seen as an object in consensual space. However, if this is the case, then we are presented with a huge problem. In order for somebody to 'see' a hallucinatory object in consensual space, then the part of consensual space obscured or occluded by the hallucination must be taken out of the visual field. An unintentional example of this is given by neuroscientist V S Ramachandran with regard to a young man called 'Larry' who developed powerful hallucinations after being injured in a car accident. During one session Larry announced that he could see a vivid, three-dimensional monkey, sitting on Ramachandran's lap:

> I don't know. But it is unlikely there would be a professor here with a monkey sitting on his lap so I think there probably isn't one. But it looks extremely vivid and real ... Also there is something odd about the images – they often look too good to be true.[6]

Larry could not see the parts of Ramachandran's lap that were obscured by the hallucinatory simian. In this case Green and McCreery would argue there must be two types of hallucination being created by the patient's brain; one of addition (the monkey) and one of subtraction (the loss of visual stimulus from the neurologist's lap). The latter is technically known as a 'negative hallucination', a failure to perceive something that exists in consensual space. However, things are more complex than this. The monkey is perceived by the patient to be animated and moving around. The area of consensual space negated by the hallucinatory process needs to change to reflect the differing areas occluded by the monkey's movements. There must be a one-to-one relationship between the areas excluded and the hallucinated movements of the monkey. This mystery happens with all hallucinations involving solid objects in consensual space.

In 1975 Green and McCreery proposed a solution to such problems. They suggested that the image of consensual reality that is presented to consciousness is also a brain-generated hallucination, just as a regular hallucination is. All of what is perceived through our senses is technically a hallucination. Green and McCreery argued that as all perceptions are hallucinations, then it is not surprising that one sort of hallucination can overlap another. They called this hallucinatory spectrum the 'metachoric model of hallucinations'.[7]

They argued that the brain, based upon the perceptions processed from data gleaned from consensual reality, can create a facsimile environment identical to that consensual reality. In this way Green and McCreery can explain a series of strange perceptual hallucinations such as out-of-body experiences (OBEs), lucid dreaming and near-death experiences. In each of these cases the experiencer senses that they are outside of their body, seemingly viewing the consensual world from another location. In NDEs and OBEs it is regularly reported that the subject can see themselves and actions going on around them. In lucid dreams the person becomes self-aware while in a dream state and can interact with that Daemonic world as if it were the consensual, Eidolonic world.

Modern neurology and psychology have an explanation for these experiences. The process by which a dream overlaps into what seems like consensual reality is known as 'REM (rapid eye movement) intrusion'. This is where the person is actually asleep and dreaming but a part of the brain is still awake and processing the sights and sounds of the external world. Any dream images are then projected into the external world and seem to be part of that world. In this way, a dream can seem to be 'real'. These images are usually accompanied by a bodily paralysis, known as 'sleep paralysis' for obvious reasons. When we sleep, the body protects itself from dream-induced bodily damage by stopping the dreamer acting out any physical actions they may wish to perform in the dream state – for

example, hitting out at a dream attacker. If they were to mirror this hitting out by moving their arms, they might hurt themselves – or somebody in the bed with them. By paralysing the body in this way, the brain protects it. However, if one happens to become semi-conscious in such a state the sensation of paralysis can be frightening.

Green and McCreery argue that such 'visitations' present evidence for their metachoric model. People regularly report that during some REM intrusion states and regularly in general apparition encounters, the spectral figures give off a form of light. This light illuminates the environment around the figure. Now if the figure is a brain projection into a genuine consensual environment, how can its 'light' illuminate objects in the real world? In some cases the person describes how the whole bedroom was lit up by the spectral light. This is impossible in the dual process model but entirely feasible in the metachoric model. If all the scene, background environment and spectre are part of the same 'hallucination', then such illumination is perfectly possible.

Green and McCreery's model proposes that *all* perceptions are technically 'hallucinations'. However, there is a continuum between perception at one end and hallucination at the other. In a later paper McCreery considers that out-of-body experiences are located in an intermediate position along the continuum, as they seem to contain fantasy elements that suggest a limited conscious control.[8]

I would like to suggest that the metachoric model lends itself to the idea that reality is generated by a form of simulation analogous to that of a first-person computer game and that Green and McCreery's continuum is part of this simulation. In recent years there has been a growing number of scientists who believe that the universe works on digital or holographic principles. In effect, what this means is that consensual reality itself is an illusion and everything is simply digital information. Such information could create seemingly three-dimensional realities from non-physical data. One

of the first to suggest this was cosmologist Frank J Tipler in his 1994 book *The Physics of Immortality: Modern Cosmology, God and the Resurrection of the Dead*. However, it was Oxford University philosopher Nick Bostrom who really popularized the idea in a hugely influential paper published in 2003.[9] In recent years this idea has been modified and elaborated upon by quantum physicists such as Vlatko Vedral in his 2012 book *Decoding Reality*.

Associated with the idea of a facsimile reality as suggested by the metachoric model is a phenomenon known as false awakenings. One of the most famous examples of this was experienced by the renowned and notoriously sceptical philosopher Bertrand Russell. He reported that after anaesthetic he appeared to wake up hundreds of times in succession.[10]

I was personally given an amazing example of this by one of my readers, Ash Gabbidon, who emailed after a most peculiar set of events a few years ago. Ash's experience was not quite like the many awakenings of Bertrand Russell. Ash described to me how it did happen multiple times but with this difference: each time he got further into his day, only to wake up again and go through the same experience.

What differentiates the false awakening environment from the consensual world is a sense of the uncanny that seems to permeate the atmosphere. In the Type 1 version the subject seemingly wakes from sleep in the location he went to sleep in. Type 2 involves him waking up in another location.

It is important to note that false awakenings convey a feeling of total reality, in that the ongoing point of view is always as it would be in the consensual world. The person sees the facsimile through their eyes, hears it through their ears and, one assumes, feels it through their sense of touch. It has to be this way, otherwise the person would quickly realize that it was a dream. Time flow also has to follow a standard pattern. Ash Gabbidon 'woke up' at least six times and by the end of the experience he had progressed through the day until the mid-afternoon. The question that

demands to be asked here is, what is it about the final waking that leads the person to believe that they are back in consensual reality? It cannot be that the waking experience appears to be shared by others in a consensual way because in all the previous false awakenings the noumenal world similarly contained other people going about their business and, presumably, acting totally normally. But the evidence that makes us believe that phenomenal reality is not a facsimile involves the self-same cues that presumably fool us in the false awakening state.

We are very aware that time can extend greatly during dream states. This is suggested from Ash's false awakenings, each one lasting a longer period of time. By a rough calculation I suspect that Ash's nested dreams accounted for around 14 hours. Even assuming a one-to-one relationship between dream time and consensual time, Ash's experience was twice as long as he would have been sleeping. However, it is reasonable to conclude, on the basis of commonplace experience, that all the false awakening dreamlets took place in a hypnopompic state of around 20 minutes or less. Therefore, if time is a totally subjective construct as far as liminal sleep states are concerned, there is no reason why a whole day, week, month, year or even a lifetime could not be subjectively experienced in such a state. For the sake of argument, let me suggest that a waking dream could last for 16 hours, a normal 'waking day'. The person then goes to sleep in the waking dream and wakes up again, seven hours later in another waking dream. A person could live a whole life in this way.

Of course, such experiences are not rare at all. Over the centuries, if not the millennia, consciousness has been able to transcend the restrictions of Huxley's reducing valve. This has been done by people simply administering any of a great number of naturally occurring substances, which have evolved along with ourselves in plants and in other animal species. These substances are known under the collective term 'hallucinogens': chemical compounds that override Huxley's reducing valve effect.

Although it may be correct to assume that consciousness may exist outside of the brain in the same way a radio signal has as its source a radio transmitter rather than the radio receiver, we still need to understand how the 'receiver' functions, because hallucinations are still modulated by that receiver. We will now turn our attention to the chemicals that bring about the sense of embodiment.

A Neurochemical Model?

Huxley was clearly amazed by his experiences that May day in 1953. His appreciation of the true nature of reality had been changed forever. His 'doors of perception' had been opened and a new universe of experience was available to him. But what had actually happened to him? We know that he took a substance known as mescaline, but what is mescaline and how could it change his perceptions so radically?

Mescaline, as I have said, is what is known as a 'hallucinogen'. This is a substance that can change how we perceive the world. In effect, these substances create 'hallucinations'. Mescaline is one of many substances that can do this: others include LSD (lysergic acid diethylamide), psilocybin and DMT (dimethyltryptamine). The generally used term to describe these substances is 'psychedelic', coined by Huxley and Osmond after the events of May 1953. So how can a naturally occurring psychedelic bring about such dramatic subjective experiences?

It seems reasonable to imagine that hallucinogens increase brain activity, in that they are adding sensations that are not part of the external world: the brain is working harder to create these illusions. But this has been discovered not to be the case. Research by Robin Carhart-Harris and his team at Imperial College London has shown that the changes in consciousness brought about by hallucinogens involve a *decrease* in brain activity.[11] It has also been discovered that hallucinogens actually seem to make the brain work in a more organized fashion than it does during

'normal' perception. Different areas of the brain work together in a more cooperative way. In other words, the brain is made to work more efficiently when it is under the influence of hallucinogens. This is the opposite of what the general public is given to believe, by the message that hallucinogens confuse the brain and make it malfunction. So is it reasonable to conclude that a more effective brain is one that perceives hallucinations? The implications here deserve to be emphasized. Our everyday brain is not functioning at its full potential. When it does so, hallucinations occur.

In the 1950s a series of experiments took place in which human subjects had electrodes placed in their brains and then they were given hallucinogens, specifically LSD and mescaline. Clearly such experiments would be ethically unacceptable now, but they have given us some interesting information about what parts of the brain these substances influence. It was discovered that the main area is the medial temporal lobe (MTL), specifically the hippocampus, the amygdala and the septal nuclei. Phasic discharges were recorded in these areas during periods of marked hallucinosis.[12] [13] This is significant because it is known that increased medial temporal lobe activity is a major characteristic of the rapid eye movement (REM) phase of sleep and therefore, by association, dreaming. Hence there is a link between the effects of hallucinogens and the phenomenon known as REM intrusion (see pp54-56) which is thought to be responsible for hypnagogic and hypnopompic experiences, out-of-body experiences, sleep paralysis and other non-induced 'hallucinations'. We will return to the significance of these curious brain states later.

Increased hippocampal activity has recently been shown to create 'dreamy states' in subjects.[14] We also know that electrical stimulation of the medial temporal lobes can bring about complex dream-like visions to waking subjects. These sound very similar to hypnagogics and hypnopompics. In 2014 researcher P Mere and his associates experimented with direct electrical stimulation of the parahippocampus and subjects

reported 'melting faces' and other complex visual hallucinations. From my own experience of hypnopompic images, melting faces is a regular theme.[15]

If the brain is actually working more efficiently during the creation of so-called hallucinations, then it is logical to conclude that perceptions without hallucinations are created by a less efficient brain. I would like to suggest that hallucinogens open up the channels of communication between Eidolonic consciousness and Daemonic consciousness: they allow the Daemon to speak directly to the Eidolon. At other times hallucinogens have created a sensation that the subject is not alone and that there is some form of presence close by. This seems to be particularly the case in relation to the powerful hallucinogen called dimethyltryptamine (DMT).

DMT, and an associate substance 5-MeO-DMT, are powerful hallucinogens that bring about profound hallucinatory experiences. New Mexico-based psychiatrist Dr Rick Strassman has long been associated with research into the true nature of this intriguing chemical. In the early 1990s Strassman was involved in an extensive US Government-funded research project into the effects of the substance. In *DMT: The Spirit Molecule*, the book Strassman wrote after the project had been completed, he suggested that it was highly likely that DMT was active in the human brain, its source being the enigmatic pineal gland. Strassman believes that the pineal gland may actually create DMT for use as an endogenous (internally generated) neurotransmitter.

In February 2009 Strassman's suspicion that DMT was a possible human neurotransmitter was confirmed. University of Wisconsin-Madison pharmacologist Arnold Ruoho had a paper published in the academic periodical *Science*. In this Ruoho described how his team had discovered that a receptor known as sigma-1 was activated by DMT.[16] We shall return to the implications of this in much greater detail later.

It has been known for some time that DMT is biosynthesized from tryptamine by the actions of the enzyme INMT (indolethylamine

N-methyltransferase). The human variety of this substance was cloned and sequenced in 1999. High levels of INMT have been found in the thyroid and adrenal gland and the lung. However, within the central nervous system small amounts have been detected in the spinal cord but none in the brain itself. If DMT is synthesized from tryptamine by the actions of INMT, then INMT must be active in the human brain. Up until 2011 no evidence of INMT had been detected there.

However, in that year researchers at the University of Wisconsin-Madison published the results of an experiment suggesting that INMT is active in the human brain. Ruoho and his associate Nicholas Cozzi questioned the effectiveness of the standard detection technique used to isolate INMT, and pointed out that it is possible that this technique simply failed to detect INMT and its respective messenger RNA molecule. They subsequently found INMT in the retinal ganglion neurons and spinal cord of a rhesus macaque monkey. Of even greater significance was that INMT was also discovered in the primate's pineal gland.[17] Subsequent research managed to isolate the gene responsible for the enzyme's presence in the retina and the pineal gland.[18]

These results stimulated the interest of another researcher, Dr Steven Barker of the Analytical Systems Laboratory at Louisiana State University. Barker, together with his associate, Dr Jimo Borjigin of the University of Michigan, had previously discovered that neuronal activity was not only detected but actually increased in the brains of recently killed rats. Barker was so intrigued by this evidence of post-mortem brain activity that he embarked upon a series of tests to see if he could isolate what particular neurotransmitters were active at the time of the rats' spike in neurological activity. If this could be shown to be a particular neurochemical, then we might be a good deal closer to understanding the near-death experience. With funding from Rick Strassman's Cottonwood Research Foundation, Barker did a series of tests on the brain material and he succeeded in

finding the presence of INMT. However, in doing so he made another, unexpected, discovery: he found direct evidence of DMT within the rodents' pineal glands. The discovery was subsequently published in an article that appeared in the academic journal *Biomedical Chromatography* in December 2013.[19]

For the time being one of the most intriguing elements of the DMT experience is how it generates in many of its subjects something called the 'sensed presence'. This is a physical sensation that somebody, or something, is close by – possibly even sharing the brain of the subject. I would like to suggest that DMT facilitates a subtle communication between Eidolonic and Daemonic consciousness. The Eidolon is suddenly made aware of the presence of its hidden partner and the fact that the Daemon can, for a few fleeting moments, communicate directly with its Pleroma-embodied associate. This can manifest within Eidolonic consciousness as simply a sensation of a presence or, in periods of extreme stress or danger, as an aural 'hallucination'. Continuing with our 'doors' analogy, it is as if the Daemon is shouting through the letterbox!

In my book *The Daemon: A Guide to Your Extraordinary Secret Self* I collected many examples of seemingly impossible skills manifested by these 'voices'. I would like to give one example here, sent to me by Alan Rumney. In 1969 Rumney was a member of the Rhodesian Army dealing with an insurgency in the north of the country near Mount Darwin. This is how he described what happened to him that fateful day:

> We rounded a bend, and then it happened. A 'voice', which seemed to come from inside my head, said to the effect, and very clearly, 'This is an ambush,' which put me on high alert, and almost immediately I spotted the telltale puffs of grey smoke on the left-hand verge of the road ahead, before I heard the rifle fire, and the vehicles ahead started taking evasive

> action. Immediately I swung the machinegun to the left, and as I did so I suddenly found myself pulled quite violently and inexplicably forward, and found myself hanging sideways in the V-shield webbing, with a strange sensation in my left arm and hand. Looking around, I first noticed my bloody hand, and the rather awful sight of my left thumb hanging on by a thread of flesh. There was blood oozing out of my elbow and upper arm, and then it struck me: I had been shot several times.[20]

This 'inner voice' seemed to know what was about to happen next, and when Alan failed to respond it took action in physically pushing him away from the location that the bullets were about to hit in the very near future. How could the non-dominant hemisphere of the brain access such information? These incidents, although by their nature anecdotal, challenge the idea that such voices are simply the murmurings of the mind.

It must be stressed that these 'voices' are not heard in the usual way – that is, by sound waves hitting the eardrum. Their source is far more mysterious than any modern psychiatrist would have you believe. For example, if the non-dominant hemisphere has no verbal abilities, then how can it create words and language in order to 'communicate' with its dominant partner? The voice that saved Alan's life spoke to him in grammatically correct English, stating 'This is an ambush.' Alan did not *feel* the meaning of these words, he heard them.

And we still have to overcome one amazingly simple fact about Alan's experience. How did his 'inner voice', from whatever source, know that an ambush was about to take place? Alan was certainly totally unaware of this, and without the intervention of his 'sensed presence' would have been killed. This suggests precognition.

It has been regularly reported that the Amazonian psychedelic brew known as ayahuasca can bring about precognitive and telepathic

experiences. In 1905 a traveller named Rafael Zerda Bayón suggested that ayahuasca was far more than just a hallucinogenic drug. He argued that one of the two active ingredients of ayahuasca could generate telepathic communication within the visions it placed in the mind of the subject. In recognition of the discovery, Bayón proposed that this active constituent should be called *telepathine*. This name was taken up by Colombian chemist Guillermo Fischer Cárdenas when in 1923 he successfully isolated the compound. Later this highly controversial name was changed to *yagéine* and then *banisterine*.

It is evident from Alan Rumney's experience, and those of many others, that the 'sensed presence' can break through without the facilitation of hallucinogens, and research taking place in Canada over recent years has suggested that the 'letterbox' can be created by non-invasive brain stimulation and also by naturally occurring environmental factors. Individuals whose 'doors' are opened in this way I call 'accidental tourists', and it is to their experiences we now turn our attention.

CHAPTER TWO:

Accidental Tourists

Michael Persinger and his 'Sensed Presence'

Michael Persinger is an American-born neuroscientist based at Laurentian University in Sudbury, Canada. He has long had an interest in the neurological source of religious and mystical experiences and over the last 30 years or so has been involved in a series of fascinating experiments.

Persinger suggests a similar spectrum to myself with regards to religious and mystical experiences. He is convinced that such experiences are created by the temporal lobes. The sense of self in relation to time and space is located in the amygdaloid and hippocampal complexes. These structures are, in turn, areas that generate anxieties and fears. The amygdala also focuses on pleasure and pain. Collectively these parts of the brain also facilitate intense feelings of significance, or meaningfulness. The temporal lobes are also known as a strong site of brain plasticity whereby the neurological structures learn and adapt in response to stimuli. Persinger argues that all people have a potential to experience transient

(for a few seconds) electrical displays within the temporal lobes. These microseizures are known as temporal lobe transients, or TLTs. For a time such seizures may bring about unusual perceptions. Because of the way in which the amygdaloid and hippocampal complexes place significance or meaningfulness onto experiences, together with an underlying sensation of dread or fear, it is not surprising that such perceptions will be interpreted in a mystical and profound light. In a paper published in 1983 Persinger argued that lost memories also could be evoked in these circumstances. As we shall discover later, another Canadian-based American, neurosurgeon Wilder Penfield, had similar results in the 1930s through to the 1950s. Persinger suggested that these evoked memories may go back to infancy or even earlier, and would create the 'sensed presence' of a parent as an ever-present god-like supplier of food, warmth and tactile comfort.[1] However, the infant brain would not be able to place this presence in any cognitive understanding of the world, and therefore its origins would be a mystery.

Persinger was aware in the early 1980s that such mystic experiences had been evoked by surgical stimulation – for example by Horowitz and Adams in 1970[2] and Pierre Gloor in 1972.[3] These researchers had created out-of-the-body sensations, auditory experiences such as rushing sounds, voices, and perceptual alterations such as looking down a tunnel or seeing spinning light patterns.

Persinger calls this phenomenon 'parasitic consciousness'. In order to understand what he means by this we need to appreciate that the human brain consists of two hemispheres. They are joined together by structures known as 'commissures'. There are five of these, by far the most important being the corpus callosum: Latin for 'thick-skinned body'. As we shall discover later, if this 'bridge' between the hemispheres is cut, then effectively all communication is lost between the two hemispheres, and two personalities are created. These hemispheres are not equal, since

one is far more dominant than the other. For all right-handed people and a percentage of left-handers, the dominant one is the left, with a small minority of left-handed individuals having a dominant right hemisphere. In effect, the dominant hemisphere is where we all 'live'.

Persinger suspected that the sense of the other is brought about by magnetic fields giving the dominant hemisphere an awareness of its non-dominant partner. This is brought about by electromagnetic-facilitated bursts of electrical activity in the temporal lobes. These magnetic fields are created by radio transmissions, seismic activity and even solar flares. However, as the human brain also has its own electrical components, it could create these sensations neurologically. As we shall discover, it is bursts of electrical activity in the brain that bring about epileptic seizures, so it comes as no surprise that Persinger suggested that the sensed presence was created in neurotypicals by electromagnetically facilitated microseizures focused on the temporal lobes. Persinger believed these experiments suggested that the human sense of self has two components. In 1993 he published a paper in which he described this idea as the 'vectorial hemisphericity hypothesis'.[4]

He needed to find a way to artificially bring about these microseizures, so they could be observed and measured under laboratory circumstances. With an associate, Stanley Koren, he placed a pair of solenoids inside a modified snowmobile helmet. Each solenoid was located over each temporal lobe of the wearer. In simple terms a solenoid is a thin loop of wire wrapped round a metal core. When an electric current was passed through the wire, a magnetic field is generated. In this way Persinger was able to create an artificial electromagnetic stimulation of the temporal lobes and, hopefully, reproduce the 'sensed presence' at will. He soon embarked upon a series of controlled experiments and discovered that not only was the presence successfully evoked in at least 80 per cent of the volunteers who were subject to the process, but around one per cent claimed that they

sensed 'God' in the room with them. This was picked up by the mass media, and the experimental apparatus was dubbed the 'God Helmet'.

In a later study, published in 2002, Persinger described how the team had exposed 48 volunteers to the pulsed magnetic fields. These volunteers were broken down into four groups. The first group had the magnetic field applied over their right temporoparietal region, the second group experienced the same effect over their left temporoparietal region and a third group had both areas stimulated. A fourth group were told that they were going to be exposed to the field but, unbeknown to them, they were the control group and no field was applied. Two-thirds reported a sensed presence. This is an interesting result, but also of significance was the fact that a third of the control group also experienced the presence.[5]

This suggests that when sensitive to the potential for a 'sensed presence', a significant minority of people become attuned to it. Persinger believes that his experiments vindicate his vectorial hemisphericity hypothesis.

Persinger reports that many of his subjects have experienced the visual hallucinations reported by Horowitz and Adams and by Gloor. These have involved flashing lights, vortices, mandalas, tunnels and voices. One subject, who received the field over both temporal lobes, described the following:

> I felt there was a bright white light in front of me. I saw a black spot that became a kind of funnel ... I felt moving, like spinning forward through it. I began to feel the presence of people, but I could not see them.[6]

Here we have another link with Rick Strassman's research, seen in this uncannily similar description recorded by one of his DMT volunteers:

> First I saw a tunnel or channel of light off to the right. I had to turn to go into it. Then the whole process repeated on the left. It was intentional that way. It was as if it had a source, further away. It got bigger farther away, like a funnel. It was bright and pulsating. There was a sound like music, like a score, but unfamiliar to me, supporting the emotional tone of the events and drawing me in. I was very small. It was very large. There were large beings in the tunnel, on the right side, next to me. I had a sense of great speed ... Things were flashing, flashing by, as if from a different perspective. It was so much more real than life.[7]

Both these experiences have powerful echoes of two other phenomena: alien abductions and the near-death experience (NDE). We shall return to these later. For now I would like to focus on the shimmering lights and vortices experienced during these states. What can they tell us about how we may access the Pleroma?

My Friend Flicker

In his journal dated 21 December 1958 artist Brion Gysin reported a very strange effect when he was riding on a bus one evening in the south of France. The bus was driving past an avenue of trees and Gysin could see the light of the sunset through them:

> Had a transcendental storm of colour visions today in a bus going down to Marseille. We ran through a long avenue of trees and I closed my eyes against the setting sun. An overwhelming flood of intensely bright patterns in supernatural colours exploded behind my eyelids.[8]

Earlier that year Gysin had met American writer William Burroughs in Paris. They struck up a friendship and collaborated on many themes central to this book. For example, for many years Burroughs had been interested in yage (ayahuasca) and was keen to explore the implications of Rafael Zerda Bayón's contention that yage facilitated telepathic and precognitive abilities.

Gysin was fascinated by the flicker incident on the bus and he discussed the experience with Burroughs. Two years later, and quite by chance, Burroughs bought a book written by the eminent Anglo-American neurophysiologist W Grey Walter. In the book, entitled *The Living Brain*, Walter described in detail his work with something known as the 'flicker effect'. Walter had done most of his research at the Maudsley Hospital in London with individuals who experienced photo-sensitive epilepsy. It had been long known that flickering light stimulated seizures, and Walter was keen to know exactly why this happened. He subsequently developed a series of tests to isolate susceptibility to these curious storms in the brain. He found that he could stimulate seizures, but he also discovered that flicker effects at specific frequencies, at between 8 and 13 cycles per second (the alpha band), brought about profoundly altered states of consciousness in his subjects – specifically, weird visual effects and an expansion of time perception. In one memorable case one of his non-epileptic subjects reported that he felt as if 'yesterday was at one side, instead of behind, and tomorrow was off the port bow'.[9]

Burroughs excitedly discussed Walter's work with Gysin. Gysin shared Burroughs's enthusiasm and believed that he could create an artificial way of reproducing the telepathic and precognitive effects of ayahuasca by using strobe lighting in the way described by Walter. He wrote to an associate, Ian Sommerville, and asked if a machine could be designed to reproduce the strobe effect at home. The two of them worked together and quickly found that by suspending a light bulb inside a metal cylinder with

regular slots cut in the side and placing the whole structure on a 78rpm gramophone turntable they could reproduce an effective flicker rate. After much experimentation they hit on the perfect frequency of slits to reproduce exactly the alpha band of between 8 and 13 cycles per second described by Walter. Gysin was stunned by the power of his 'Dream Machine'.

Gysin believed that he had discovered a process by which precognition could be facilitated. In his journal he wrote that Nostradamus had used a technique whereby the great French seer would close his eyes, look at a light source and flicker his fingers in such a way as to create a dappled light effect. In this way Nostradamus was able to gain 'instruction from a higher power'.[10]

The way in which a 'higher power' can be accessed through the flicker effect stimulated Gysin and Burroughs, as we have already seen, to write extensively about what they called 'The Third Mind'. By this they meant that when two minds collaborate, a third one seems to become involved.

In this regard it is potentially significant that the term Michael Persinger initially used for the 'sensed presence' effects brought about by his God Helmet was 'temporal lobe transients'. Here we have a 'flicker effect' creating exactly the same sensation as those reported by Persinger's subjects and Strassman's DMT volunteers. Persinger's machine brought about microseizures in the temporal lobes. As we shall discover later, the flicker effect is responsible for triggering 'absence' seizures in temporal lobe epileptics; and, as again we shall discover, one of the regularly reported sensations during pre-seizure auras in cases of temporal lobe epilepsy (TLE) is a strong sensation that the subject is not one, but two, people.

The feeling of a sensed presence is one of the two major effects of stimulators such as Gysin's Dream Machine. The second effect involves increasingly complex visual hallucinations. These seem to link the natural process of viewing a flickering or stroboscopic light with the taking of

hallucinogens such as mescaline, DMT and LSD. So what are these images? Are they simply brain-generated hallucinations?

Klüver Form Constants

In 1926 German-American psychologist Heinrich Klüver was researching the effects of mescaline, with a specific focus on the nature of the visual hallucinations that this chemical compound created. As we know, this is exactly the same substance taken by Aldous Huxley, which stimulated the writing of his book *The Doors of Perception*.

Klüver noted that the hallucinations involved highly saturated colours and recurring geometric patterns. He placed these in four categories: lattices, cobwebs, tunnels and spirals. I know from personal experience that these are exactly the images created by Gysin's Dream Machine and all the similar devices that have been marketed since. As we shall discover, these images are also associated with migraine, hypnagogia, hypoglycemia and temporal lobe epilepsy and, of possible significance, the near-death experience (NDE).

Klüver noted that the forms repeat themselves over and over again, reiterating on smaller and smaller scales. He called this effect the 'geometrical ornamental structure' and noted the endless reproduction through many degrees of magnitude. This 'geometrization to infinity', as the late Oliver Sacks describes it in his book *Migraine*,[11] suggests to me a process similar to that created using a fractal geometry sequence known as the Mandelbrot set. Why should the human brain spontaneously, and for no apparent purpose, create, during a migraine aura, such a complex mathematical structure? I cannot help wondering if this is a clue to the ultimate holographic nature of reality, whereby the parts are contained in the whole and the whole found in the parts. Migraines somehow short-circuit Aldous Huxley's reducing valve and in doing so facilitate a perceptual viewpoint similar to that of Mind at Large. These migraine auras are not

uncommon. For example, here is a description found on the Migraine Aura Foundation site:

> I noticed this weird thing in the corner of my right field of vision. Has anyone seen a Mandelbrot set? One of those fractal patterns that when you zoom into it is the same pattern repeating itself? Well that's what I saw. It lasted about 20 mins.[12]

Later, Klüver became the mentor to John Smythies on the effects of stroboscopic light on perceptions. You will recall that Smythies, with his associate Humphry Osmond at the Souris Valley Mental Health Hospital, were the researchers responsible for stimulating Aldous Huxley's interest in altered states of consciousness. It was after his work with Osmond that Smythies became really interested in the effects of stroboscopic light on human behaviour. He had noted that the visual phenomena perceived using a stroboscope were very similar, if not identical, to those experienced under the influence of mescaline. Intriguingly, his research showed that if the two were used together the visual effects were enhanced considerably. So here we have a precise linkage between artificially created hallucinations using a hallucinogen and a naturally occurring reaction to light. It seems that Gysin and his followers were really on to something. But what is it about the flicker effect that causes such reactions?

The Huxleyan Spectrum: Through a Mirror Darkly

There are many methods by which individuals can access at least some elements of the Pleroma. As we have already discovered, this can be done by using flashing lights to create a 'flicker effect'. It can also be done by pushing to extremes through fasting or self-mortification or by the consumption of hallucinogens such as dimethyltryptamine, ayahuasca and LSD. In effect, all of these processes force the brain to increase or

decrease production of certain neurotransmitters. This, in turn, seems to facilitate contact between Eidolonic and Daemonic consciousness. The contact may be either direct, in that it allows the Daemon to communicate with the Eidolon; or indirect, in that Eidolonic consciousness is allowed access to the perceptual world of Daemonic consciousness. Direct contact usually takes the form of guidance, advice or warnings. Indirect contact is far more dangerous, for without the wisdom and awareness of the Daemon an Eidolon can be easily overpowered by the sensory overload coming through from the Pleroma and can lose all grip on 'reality'. This is usually defined as insanity.

For millennia certain individuals, through personal abilities or through rigorous training, have been able to perceive the Pleroma and to learn from it. These are known as mystics, adepts or shamans. Societies have sought out such people and they have become religious or spiritual leaders.

So why is this the case? Why is it that some human beings seem to exist in both worlds, whereas the vast majority of us are trapped within Blake's 'mind-forged manacles', being given only occasional glimpses of the wider universe, possibly through mind-expanding drugs or illness?

I will argue that there is a 'spectrum' of illnesses which, for very similar reasons, allow access to the Pleroma. Certain neuro-physical and neurochemical processes open up the channels of communication between Daemonic and Eidolonic awareness.

The Huxleyan spectrum consists of a series of 'syndromes', each of which is closely related to the others. Although I have used the term 'spectrum', I am of the opinion that this is slightly misleading in that it suggests a gradation from one section to the next.

The main 'staging points', as I would like to term them, are: autism, with its related 'savant syndrome', migraine, TLE, schizophrenia and Alzheimer's disease.

Migraine melds into TLE, TLE into schizophrenia, schizophrenia into

Alzheimer's and then in a curious 'eternal recurrence' Alzheimer's and schizophrenia develops into autism. The model is more like a Venn diagram – that is, a diagram that shows all possible relations between a finite number of different sets. For example, in our model we have the set of individuals who experience migraine, another set of people who experience temporal lobe epilepsy. Each set is shown as a circle. The circles then overlap in the areas of shared factors. For example, a shared factor between migraineurs (M) and TLEs (T) is the aura. This area of overlap is called the *intersection* of M and T.

Part Two of this book will review in detail each of these 'staging points' in isolation. It will not follow the spectrum in the sense of ever-widening access to the Pleroma, but instead will be more selective. This is because, as with the Venn model, the staging points all overlap each other. Part Two will then end with an extensive discussion on how the overlapping can be shown neurologically and experientially.

PART TWO:

AT THE DOORWAY

CHAPTER THREE:

Migraine

The Doors Swing Ajar

When I was in my early 20s something very strange happened to me. I was working in my office when the tips of my fingers seemed to go numb, followed by a peculiar tingling sensation in my lips. I also felt that the top of my head was lifting off and moving upwards towards the ceiling. I then noticed that the office seemed to be getting smaller, as if I was looking at it from the wrong end of a telescope. After a few seconds the 'telescope' effect stopped, but something even more disturbing started to take place. In the corner of my vision was what looked like a disturbance in the air. It was moving around in a shimmering zigzag pattern. This was not in my eyes but out there in three-dimensional space. The zigzags had, behind them, a swirling mass of activity, as if scores of tiny snakes were winding around each other. My visual field was breaking up in front of my eyes. As the zigzags widened out from the confines of their perimeters, all I could see was pure white light. It suddenly dawned on me that I was going blind.

Within a minute or two I could only see things at the periphery of my vision: the rest was a series of zigzag shapes containing the frighteningly empty whiteness.

Fortunately, the company where I worked had a medical centre, and this was just down the corridor from me. I managed to get myself into the clinic and tried to speak to the nurse. It was really weird. My words came out in completely the wrong order, as if somebody had re-arranged them for me. The nurse seemed concerned. I say 'seemed' because I couldn't actually see her. She got me to lie down. As I did so, my vision began to come back, the white-out started to fade away. I then saw the nurse properly ... except that she looked like a painting by Picasso. Her face was made up of sharp angles, and it was as if I could see each aspect of her face even though I was looking straight at her.

'It's OK,' said my personal version of Picasso's Dora Maar. 'You are experiencing a classic migraine aura. It will fade soon.' As she said this, I had the most amazing déjà vu. I had, at some time in my past, lived that moment before. It was really peculiar. I had sensed déjà vu sensations before, but this was overwhelming and felt imbued with foreboding. Slowly the visual disturbances faded and I began to see properly again. The nurse warned me that I may need to stay in the clinic for a time, as such experiences usually foreshadow a full migraine headache.

While I was waiting for the full headache to arrive, I asked the nurse exactly what an aura was. She explained that it was still something of a mystery but that such experiences had been reported for centuries. She added that the word 'aura' is actually from ancient Greek and means 'breeze', and that it is the body's way of warning that a migraine headache is due. In my case the warning was wrong. Within 10 minutes I was back in my office feeling physically fine.

Causes of Migraine

It may come as a surprise that an illness known to affect 12 per cent of the human population that science has yet to find a cause. It is generally thought that the pain originates from chemical activation of sensory nerves that supply the blood vessels located inside the skull.[1] These blood vessels swell and cause pressure within the skull itself. It is very unusual to find migraine in children under the age of eight. Why this is so is, again, unknown. The incidence increases again at puberty. This suggests that in the case of males it may be linked to testosterone production and in females the production of oestrogen. Various causes have been adduced, the most fascinating being that for some people migraines are triggered by flickering light, strobe lighting and fluorescent tubes. Edward Liveing described the experience of one of his patients whose migraine aura was triggered by watching falling snow. It is important here that we focus on the aura rather than the migraine, for it is within the aura state that the Pleroma is glimpsed, not during the headache. Migraine-with-aura, also known as classic migraine, is much rarer than ordinary migraine, being experienced by around one in 10 of those who suffer migraine headaches.

For those of us who do experience migraine auras, they are hypnotically fascinating. They spontaneously occur and the subject (I actually prefer the term 'observer') seems to have no control over the content of the imagery. It was a personal fascination in this phenomenon that prompted neurologist Karl Lashley to spend many years meticulously recording his own migraine auras. Lashley concluded that what was taking place was some form of progression across his primary visual cortex. This was not the prevailing wisdom of the time (the early 1940s), which linked the aura directly to the swelling of the blood vessels as discussed above. However, in 1944 a Brazilian biology PhD student based at Harvard made an amazing discovery. For his doctoral research programme Aristides Leão was investigating how epileptic seizures spread across the brain. What he

actually discovered in his work with rabbits was something that is now known as cortical spreading depression (CSD).[2] CSD is a short-lasting depolarization wave that moves across the visual cortex. In effect, this is a wave of electrical silence in which the brain cells (neurons) cease firing. This wave propagation can take up to 18 minutes to move from the rear to the front of the occipital lobe. As the wave starts, it is felt as a tingling in the extremities. As the CSD makes its way through the visual cortex, there is an initial flurry of activity before the electrical current is switched off. It is this, some now believe, that causes the visual hallucinations.

A recent study has suggested that the neurotransmitter that may be responsible for CSD is glutamate. Generally glutamate is not harmful, but under certain circumstances vast amounts are generated, causing what is termed a *glutamate flood*. Glutamate is highly excitatory. When present in excess it causes neurons to die as a result of something known as excitotoxicity. This is the mechanism of neuronal cell death in hypoxia (deficiency of oxygen), ischaemia (reduction in blood supply) and, interestingly enough, epilepsy – all conditions that have been proven to lead to excessive release of glutamate.[3 4]

The researchers argue that it is this glutamate flood that generates the wave of excitement that brings about the cortical shut-off observed in CSD.[5] This is an intriguing discovery because it allows a direct link between migraine, epilepsy and near-death experiences (NDE), since the 'glutamate flood' has, as we shall discover later, also been presented as an explanation of the perceptions that accompany the NDE.

However, this discovery only manages to link a neurological event to a visual perception. It in no way explains why the images look the way they do or, more importantly, why one set of images is experienced rather than another? How does a flood of glutamate flowing through the visual cortex create anything that can be confused with objects and patterns in three-dimensional space? As we have already discovered, such images

are known as Klüver's Form Constants and are not exclusive to migraine. These images are as far as my migraine-induced hallucinations have taken me. However, for others the aura imagery is far more powerful, and really cannot be explained simply as the visual cortex stimulating geometric patterns.

In 1952 American physician Dr Caro W Lippman published a paper in the *Journal of Nervous Mental Disease* entitled 'Certain hallucinations peculiar to migraine'.[6] To date this is one of the most detailed reports ever written on the differing types of migraine hallucinations.

The initial case studies presented by Lippman give examples of individuals who sense a feeling of bodily extension, particularly focused around the head and neck. This 'ballooning out', as it was described by one patient,[7] is reminiscent of the moving out of the body described by those reporting out-of-body experiences.

It has long been suggested by researchers that the author of *Alice in Wonderland*, Charles Lutwidge Dodgson, writing under the pen name Lewis Carroll, was a migraineur and that his descriptions of Alice getting larger and smaller after her encounter with the 'drink me' bottle were descriptions of his own experiences. Such perceptions of growing and shrinking have now been termed 'Alice in Wonderland syndrome'.

Of possibly even greater significance is that the sensation of falling into and then through a tunnel is reported by a number of Lippman's patients. The 'tunnel' is a regularly recorded motif in the near-death experience and, as we have already seen, is related to the Klüver's Form Constants. It is therefore no surprise to find that near-death experience motifs litter the reports collected by Lippman in his long career as a recorder of migraine 'hallucinations'.

In 1954 Lippman published another article in which he focused on another fascinating area: recurring dreams.[8] This is an experience many people have, but it seems that with migraineurs it is especially powerful and

vivid. Of possible significance is that Lippman discusses the experiences of 'migrainoids' as well as 'migraineurs'. A 'migrainoid' is a person who is a direct descendant, or sibling, of migraineurs. This suggests that migraine-like symptoms are hereditary.

In the article Lippman discusses three different dream patterns, all of which are directly related to migraineurs/migrainoids and involve powerfully vivid recurring dreams, in which the experiencer returns to a location or situation that they have dreamed of many times before.

What can recurring dreams tell us about the source of the dream state? One of the ways we can tell that our waking life is 'real' is that it has a strong element of continuity. When we go to sleep, the bedroom has a certain configuration, the alarm clock is in a particular place and the book we put down before we went to sleep will stay in the same location. On awaking, everything will be, to all intents and purposes, a very close version of the external environment we saw just before we closed our eyes. This convinces us that what is 'out there' is part of a reality that continues while we are asleep. However, a recurring dream has similar attributes.

This is a very important point. As we have already discovered, the general 'explanation' of all altered states of consciousness is that they are simply brain-generated hallucinations – fantasies created by the release of certain neurochemicals (neurotransmitters) within the brain that spontaneously 'create' dreams. With regard to migraine-induced hallucinations, the major culprit seems to be the glutamate-induced cortical spreading depression (CSD). Of course, this explains nothing. If we accept that the brain itself is, in effect, an unconscious collection of cells, then how exactly does this collection of chemicals choreograph the dream narratives in all their complexity? But this is just the start of the logistical problems. We can add a further question: how does the brain facilitate the creation of a sensory 'reality' that presents itself to consciousness (or perhaps we should we say 'unconsciousness', as the observer of the stimuli is actually asleep)?