

Six Studies of Out-of-the-Body Experiences

Charles T. Tart

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Abstract

Because of a pernicious confusion between science and *scientism*, many people react negatively to the idea of scientific investigation of NDEs, but genuine science can contribute a great deal to understanding NDEs and helping experiencers integrate their experiences with everyday life. After noting how genuine scientific investigation of certain parapsychological phenomena has established a wider world view that must take NDEs seriously, six studies of the authors' of a basic component of the NDE, the out-of-body experience (OBE) are reviewed. Three of these studies found distinctive physiological correlates of OBEs in the two talented persons investigated, and one found strong evidence for veridical, paranormal perception of the OBE location. The studies using hypnosis to try to produce OBEs demonstrated the complexity of a simple model that a person's mind is actually at an OBE location versus merely hallucinating being out, and require us to look at how even our perception of being in our bodies is actually a complex simulation, a biopsychological virtual reality.

Article

Many people who hear about near death experiences (NDEs) think something like "Wow! I wish I could have that experience and that knowledge!" Without wanting to have the hard part of coming close to death, of course! As Atwater (Atwater, 1988) and others have documented, however, it's often not a simple matter that you start out "ordinary," have an extraordinary experience, and then "live happily ever after." Years of confusion, conflict and struggle may be necessary as you try to make sense of the NDE and its aftermaths, and to integrate this new understanding into your life. Part of that struggle and integration takes place on transpersonal^[3] levels that are very difficult to put into words, part on a more ordinary level of questioning, changing, and expanding your world view. I'm not especially qualified to talk from a higher spiritual perspective, but I have gathered some useful information in my career about the nature of the world that may help with that part of the integration, and that's my primary emphasis.

I have worked primarily as a scientist for the last 35 years, so I'll start by discriminating between genuine science and scientism, and that describe six studies of out-of-the-body experiences (OBEs) I've carried out and some of the conclusions I've come to that may be helpful in furthering understanding and integration.

Science and Scientism in the Modern World:

We live in a world that has been miraculously transformed by science and technology. This is very good in some ways, not in others. The negative aspect of particular concern for us today is that this material progress has been accompanied by a shift in our belief systems that is unhealthy in many ways, viz. a partial crushing of the human spirit by *scientism*. Note carefully that I said *scientism*, not science. I am a scientist, which I consider a noble calling that demands the best from me, and I'm very much in favor of using *genuine* science to help our understanding in all areas of life, including the spiritual. Scientism, on the other hand, is a perversion of genuine science. Scientism in our time consists of a dogmatic commitment to a materialist philosophy that "explains away" the spiritual rather than actually examining it carefully and trying to understand it (Wellmuth, 1944). Those of you who have a negative feeling when I first mentioned science have probably gotten it from encounters with scientism. Since scientism never recognizes itself as a belief system, but always thinks of itself as true science, the confusion is pernicious.

The information I want to share here was obtained in my attempts to practice genuine science in areas of mutual interest to us. Genuine science is a four part, continuing process that is *always* subject to questioning, expansion and revision. It is a process that begins with a commitment to observe things as carefully and honestly as you can. Then you think about what your observations mean, i.e. you devise theories and explanations, trying to be as logical as possible in the process. The next, third step is very important though. Our minds are wonderfully clever, so clever that they can “make sense” out of almost anything with hindsight, i.e. come up with some sort of plausible interpretation of why things happened the way we observed them to. But just because our theories and explanations seem brilliant and logical, that doesn’t mean that we really understand the world we observed, we could have a wonderful *post hoc* rationalization. So the third part of the genuine scientific process is a requirement that you keep logically working with, refining and expanding your theories, your explanations, and then make predictions about new areas of reality that you haven’t observed yet. You’ve observed the results of conditions A, B and C, e.g., and come up with a satisfying explanation as to why they happened. Now develop your theory to predict what will happen under conditions D, E and F, and then go out and set up those conditions and see what actually happens. If you’ve successfully predicted the outcomes, good, keep developing your theories. But if your predictions don’t come true, your theories may need substantial revision or need to be thrown out altogether.

It doesn’t matter how logical or brilliant or elegant or emotionally satisfying your theories are, they are always subject to this empirical test with new observations. Indeed, if a theory doesn’t have any empirical, testable consequences, it may be philosophy or religion or personal belief, but it’s not a scientific theory. Thus science has a built in rule to help us overcome our normal human tendency to get emotionally committed to our beliefs. This is where scientism corrupts the genuine scientific process. Because people caught in scientism have an emotional attachment to a totally materialistic view of the world, they won’t really look at data like NDEs that imply a spiritual, non-material side to reality. They don’t recognize that their *belief* that everything can be explained in purely material terms should be treated like any scientific theory, i.e. it should be subject to continual test and modified or rejected when found wanting.

This requirement of continual testing, refinement and expansion is part of the fourth process of genuine science, namely open, full and honest communication about all the other three aspects. You share your observations, theories and predictions so that colleagues can test and extend them. Thus you as an individual may have blind spots and prejudices, but as it’s unlikely *all* your colleagues have the same ones, a gradual process of refinement, correction and expansion takes place and scientific knowledge progresses.

While I have described this process as genuine science, need I say that it is also a quite sensible way of proceeding in most areas of life?

Inadequacy of Scientism in Dealing with NDEs:

Now let’s apply these thoughts about science and scientism to NDEs. Scientism, a dogmatic materialism masquerading as science, dismisses the NDE *a priori* as something that cannot be what it seems to be, viz. a mind or soul traveling outside the physical body, either in the physical world or in some nonphysical world. So the NDE is automatically dismissed as a hallucination or, more likely, as some kind of psychopathology. But what if we practice actual science and look, with an objective as possible view, at experiences like the NDE without prejudging them as impossible?

First, there is the data from a hundred years of scientific parapsychological research that, using the best kind of scientific methodology, shows us that we can’t simply dismiss the NDE as *a priori* impossible. A world view that countenances such dismissal is ignorant, prejudiced, or both. It is presumptuous to summarize a century of research in one paragraph, but as I want to focus on the out-of-body aspect of NDEs, I will make an attempt.

Basically, hundreds of experiments have shown that sometimes the human mind can do things that are *paraconceptual* to our understanding of physical reality, i.e. they make no sense given our current understanding of physics and reasonable extensions of it, but they happen anyway. They are empirical realities. The four major psychic phenomena, collectively referred to as *psi* phenomena, that are well established are telepathy, clairvoyance, precognition, and psychokinesis (PK). Sometimes a person can detect what’s happening in another’s mind (telepathy), detect what’s happening at a distance in the physical world when it’s not currently known to another mind (clairvoyance), predict the

future when in principle it's not predictable (precognition), or affect physical processes just by willing them to be changed (PK). The reality of these psi phenomena, the Big Four as I often call them (Tart, 1977a), requires us to expand our world view from a world that is *only* material to one that also has mind as some kind of independent reality in itself, capable of sometimes doing things that transcend ordinary physical limits. So if in an NDE a person feels outside her or his body, or claims to have acquired information about distant events, for example, it *may* be an illusion in a particular case, but you can't scientifically say it *must* be illusion. You have to actually examine the experience, the data, not ignore it or prejudicially "explain it away" without really paying attention or being logical. Thus the Big Four of psi phenomena give us a wider view of reality that calls for a careful look at NDEs, rather than *a priori* dismissal.

Out-of-the-Body Experiences:

Since the beginning of my career, I've been fascinated by what used to be a very little known phenomenon, the out-of-the-body experience (OBE). While the term OBE is sometimes used rather sloppily, here's how I defined it over two decades ago:

First, let's talk about a subtype which I'm tempted to call the *classical* out-of-the-body experience, or dOBE—the "discrete out-of-the-body experience." This is the experience where the subject perceives himself as experientially located at some other location than where he knows his physical body to be. In addition, he generally feels that he's in his ordinary state of consciousness, so that the concepts space, time, and location make sense to him. Further, there is a feeling of no contact with the physical body, a feeling of temporary semi-total disconnection from it. (Tart, 1974), p. 117)

An NDE, on the other hand, usually has, speaking in an oversimplified way, two major aspects. First is the locational component, the OBE component: you find yourself located somewhere outside your physical body. Second is the *noetic* and *altered state of consciousness* (ASC) component: you know things not knowable in ordinary ways and your state of consciousness functions in quite a different way as part of this knowing. I separate these components as they don't always go together. You can have an OBE while feeling that your consciousness remains in its ordinary mode or state of functioning. If right this minute, e.g., your perceptions showed you that you were someplace else than where you know your body is but your consciousness was functioning basically like it is right now, that's what a classic OBE feels like. The OBE also seems as real or "realer" than ordinary experience. Reality is more complex than this, but this distinction between "pure" OBEs and typical NDEs will be useful for our discussion.

Out-of-the-Body Experiences: First Study

I did my first parapsychological experiment in 1957 while I was still a sophomore at MIT, studying electrical engineering. It was an attempt to produce OBEs with the aid of hypnosis, inspired by several old articles, especially one by a sociologist turned parapsychologist, Hornell Hart (Hart, 1953).

Basically, I trained several fellow students to be moderately good hypnotic subjects and then guided them in individual hypnotic sessions, where I suggested that the participant's mind would leave his body and go to the basement of a house several miles away, a place in a suburb of Boston they had never physically been to, and then describe what they saw in that basement.

The target house was the home of two parapsychologists, J. Fraser Nicol and Betty Humphrey, who had deliberately arranged a very unusual collection of objects in a corner of the basement. I reasoned that if any one of the subjects gave a good description of these unusual objects, I would know his mind had been there while out of body. Note the implicit model I had of OBEs, viz. that it was pretty much equivalent to moving your sense organs, especially your eyes, to a distant physical location. We'll question this simple model later. I had also placed an electronic device called a capacitance relay beside the target location to detect and record any disturbance in the electrical properties of the space right around the targets, hoping that my hypnotized OBE participants might physically perturb the properties of space while they traveled to the targets, providing further evidence that the mind could actually leave the body. I installed the capacitance relay before Nicol and Humphrey placed any target materials on the table: I didn't want to know what the targets were, that way I couldn't inadvertently give away any cues about them.

Alas, while I would not call the experiment a failure (I learned a lot from it), things did not work out clearly. The capacitance relay device had to be abandoned, as it went on and off every time the house furnace did. My participants' descriptions of the target had occasional resemblances to the target materials, but the comparison was much too subjective for me to put any reliance on. A "side trip" by one of the participants who was asked to describe my home in New Jersey, that he had never been to, was similarly suggestive, but not sufficiently so to convince me his mind had indeed left his body and traveled south. I had not yet learned how essential objective ways of evaluating results in parapsychology were.

Out-of-the-Body Experiences: Second Study

My next study of OBEs in the mid60s happened through coincidence, although, given some synchronicities that occurred years later (Tart, 1981), I sometimes suspect that it was Coincidence. While chatting about various things with a young woman who baby sat for us, I found out that, ever since early childhood, it was an ordinary part of her sleep experience to occasionally feel she had awakened from sleep mentally, but was floating near the ceiling, looking down on her physical body. This experience was clearly different from her dreams and usually only lasted a few seconds. As a child, not knowing better, she thought this was a normal part of sleeping. After mentioning it once or twice as a teenager she found it wasn't normal and she didn't talk about it anymore! She had never read anything about OBEs, as this was long before Moody's *Life After Life* (Moody, 1975), so she didn't have any idea what to make of it. I was quite interested as she said she still had the experience occasionally.

I told her there were two theories about OBEs, one that they were what they seemed to be, viz. the mind temporarily leaving the physical body, and the other that OBEs were just some sort of hallucination. How, she wondered, could she tell the difference? I suggested she could write the numbers one to ten on slips of paper, put them in a box on a bedside table, randomly select one to turn up without looking at it before going to sleep and then, if she had an OBE during the night, look at and memorize the number and then check the accuracy of her memory in the morning.

I saw her a few weeks later and she reported that she had tried the experiment seven times. She was always right about the number, so it seemed to her that she was really "out" during these experiences. Was there anything else interesting we could do?

Miss Z, as I've called her in my primary report on our work (Tart, 1968), had interrupted her college work to earn needed funds and was moving from the area in a few weeks, but before she left I was able to have her spend four nights in my sleep research laboratory. I knew about NDEs so I wondered what physiological changes would take place in her body when she had an OBE: was she physiologically coming close to death? And I wanted to test her apparent ESP ability to see numbers from outside her body. Each night I recorded brain waves (EEG) in a typical fashion used in dream research^[4] that allowed me to distinguish waking, drowsiness, and the various stages of sleep. I measured eye movements, which are important in dreaming, with a tiny, flexible strain gauge taped over one eye and I also measured the electrical resistance of her skin, which indicates activity in the autonomic nervous system, using electrodes taped to her right palm and forearm. On two of the four nights I was also able to measure heart rate and relative blood pressure with a little device called an optical plethysmograph that shines a beam of light through a finger.

As for ascertaining whether she was, in some sense, really "out" of her body during her OBEs:

Each laboratory night, after the subject was lying in bed, the physiological recordings were running satisfactorily, and she was ready to go to sleep, I went into my office down the hall, opened a table of random numbers at random, threw a coin onto the table as a means of random entry into the page, and copied off the first five digits immediately above where the coin landed. These were copied with a black marking pen, in figures approximately two inches high, onto a small piece of paper. Thus they were quite discrete visually. This five-digit random number constituted the parapsychological target for the evening. I then slipped it into an opaque folder, entered the subject's room, and slipped the piece of paper onto the shelf without at any time exposing it to the subject. This now provided a target which would be clearly visible to anyone whose eyes were located approximately six and a half feet off the floor or higher, but was otherwise not visible to the subject.

The subject was instructed to sleep well, to try and have an OBE experience, and if she did so, to try to wake up immediately afterwards and tell me about it, so I could note on the polygraph records when it had occurred. She was also told that if she floated high enough to read the five-digit number she should memorize it and wake up immediately afterwards to tell me what it was. ((Tart, 1968), p. 8)

Over her four laboratory nights, Miss Z reported three clear cut incidents of “floating” experiences, where she felt that she might have partly gotten out of her body but the experience didn’t fully develop, and two full OBEs. My general impression of the physiological patterns accompanying her floating and full OBE experiences is first, she was in no way “near death.” There were no major heart rate or blood pressure changes and no particular activity in the autonomic nervous system. A physician would not call for the crash cart.

Second, floating and full OBEs occurred in an EEG stage of what I would call poorly developed stage 1 EEG, mixed with transitory periods of brief wakefulness. Stage 1 EEG normally accompanies the descent into sleep, the hypnagogic period, and later dreaming during the night, but these were not like those ordinary stage 1 periods because they were often dominated by *alphoid* activity, a distinctly slower version of the ordinary waking alpha rhythm, and there were no rapid eye movements (REMs) accompanying these stage 1 periods, as almost always happens in normal dreaming. I had studied many records of sleep EEG records by then and can say the above with confidence. As to what this poorly developed stage 1 with dominant alphoid and no REMs means.....that is something of a mystery. I showed the recordings to one of the world’s leading authorities on sleep research, William Dement, and he agreed with me that it was a distinctive pattern, but we had no idea what it meant. But it has left an idea with me that I’ve never been able to follow up, but which might prove fruitful. If you could teach someone to produce a drowsy state and slowed alpha rhythms, say through biofeedback training, would the proper psychological procedures then make it easier to have an OBE? Indeed I found a report of a sensory deprivation study that reported alphoid rhythms occurring and also reported some subjects feeling like they had left their bodies (Heron, 1957). I wrote to the researcher asking if these two things were associated, but never received a reply. Too “far out” a question, I guess.

On the first three laboratory nights Miss Z reported that in spite of occasionally being “out,” she had not been able to control her experiences enough to be in position to see the target number (which was different each night). On the fourth night, at 5:57am, there was a seven minute period of somewhat ambiguous EEG activity, sometimes looking like stage 1, sometimes like brief wakings. Then Miss Z awakened and called out over the intercom that the target number was 25132, which I wrote on the EEG recording. After she slept a few more minutes I woke her so she could go to work and she reported on the previous awakening that:

I woke up; it was stifling in the room. Awake for about five minutes. I kept waking up and drifting off, having floating feelings over and over. I needed to go higher because the number was lying down. Between 5:50 and 6:00 A.M. that did it. . . I wanted to go read the number in the next room, but I couldn’t leave the room, open the door, or float through the door. . . I couldn’t turn on the air conditioner!

The number 25132 was indeed the correct target number. I had learned something about designing experiments since my first OBE experiment and precise evaluation was possible here. The odds against guessing a 5digit number by chance alone are 100,000 to 1, so this is a remarkable event! Note also that Miss Z had apparently expected me to have propped the target number up against the wall behind the shelf, but she correctly reported that it was lying flat.

Whenever striking parapsychological results occur both skeptics and other parapsychologists worry that they might have been fraudulently produced, or happened through some normal sensory channel, for such things have happened historically. A colleague and I, Professor Arthur Hastings, who is a skilled amateur magician as well as a parapsychologist, carefully inspected the laboratory later to see if there was any chance of this. We let our eyes dark adapt to see if there was any chance the number might be reflected in the plastic casing of the clock on the wall above the number, but nothing could be seen unless we shone a bright flashlight directly on the numbers. Unless Miss Z, unknown to us, had employed concealed apparatus to illuminate and/or inspect the target number, which we had no reason to suspect, there was no normal way for anyone lying in bed, and having only very limited movement due to the attached electrodes, could see it.

I was cautious in my original write-up of these results, however, saying "...Miss Z's reading of the target number cannot be considered as providing conclusive evidence for a parapsychological effect." I thought I was just making a standard statement of caution, as no one experiment is ever absolutely *conclusive* about anything, but over zealous critics have pounced on this statement as saying that I didn't think there were any parapsychological effects in this study. I have always thought it is highly likely that some form of ESP, perhaps because Miss Z was really "out" in some real sense, is far and away the best explanation of the results.

The most interesting criticism I have repeatedly gotten when describing this study comes from believers, rather than skeptics. Someone usually asks me whether I knew what the target number was. When I reply that I did, the criticism is that perhaps Miss Z wasn't really out of her body, she was merely using telepathy to read the number from my mind! I admit, with pleasure, that this first study of this type was indeed too crude to rule out the counter explanation of "mere telepathy."

As you can imagine, I was quite pleased with the outcome of this study. An unusual experience, the OBE, was accompanied by an unusual EEG pattern and there was strong evidence that Miss Z was able to correctly perceive the world from her out of body location. I was also greatly pleased at demonstrating that an exotic phenomenon like the OBE could be studied in the laboratory and have light cast on it, and the publication of this study stimulated other parapsychologists to think about doing research along these lines. My only regret was that Miss Z moved away and I was never able to track her down and do further work while I had laboratory facilities available. People who can have an OBE almost on demand are, to put it mildly, very, very rare.

Out-of-the-Body Experiences: Third Study

Some of the most interesting studies I have been able to do on OBEs have been with my dear friend the late Robert A. Monroe, whose classic book, *Journey Out of the Body* ((Monroe, 1971a)), is probably well known to many of you, as well as his subsequent books *Far Journeys* ((Monroe, 1985) and *Ultimate Journey* (Monroe, 1994)). Monroe was an archetypally "normal" American business man who was "drafted" quite involuntarily into the world of OBEs and psychic things as a result of a series of strange "attacks" of "vibrations" in the late 1950s, culminating in a classic OBE. Stockton's biography ((Stockton, 1989)) provides full background material on Monroe's life. I quote his account of his first OBE:

Spring, 1958: If I thought I faced incongruities at this point, it was because I did not know what was yet to come. Some four weeks later, when the vibrations came again, I was duly cautious about attempting to move an arm or leg. It was late at night, and I was lying in bed before sleep. My wife had fallen asleep beside me. There was a surge that seemed to be in my head, and quickly the condition spread through my body. It all seemed the same. As I lay there trying to decide how to analyze the thing in another way, I just happened to think how nice it would be to take a glider up and fly the next afternoon (my hobby at that time) Without considering any consequences—not knowing there would be any—I thought of the pleasure it would bring.

After a moment, I became aware of something pressing against my shoulder. Half-curious, I reached back and up to feel what it was. My hand encountered a smooth wall. I moved my hand along the wall the length of my arm and it continued smooth and unbroken.

My senses fully alert, I tried to see in the dim light. It was a wall, and I was lying against it with my shoulder. I immediately reasoned that I had gone to sleep and fallen out of bed. (I had never done so before, but all sorts of strange things were happening, and falling out of bed was quite possible.)

Then I looked again. Something was wrong. This wall had no windows, no furniture against it, no doors. It was not a wall in my bedroom. Yet somehow it was familiar. Identification came instantly. It wasn't a wall, it was the ceiling. I was floating against the ceiling, bouncing gently with any movement I made. I rolled in the air, startled, and looked down. There, in the dim light below me, was the bed. There were two figures lying in the bed. To the right was my wife. Beside her was someone else. Both seemed asleep.

This was a strange dream, I thought. I was curious. Whom would I dream to be in bed with my wife? I looked more closely, and the shock was intense. I was the someone on the bed!

My reaction was almost instantaneous. Here I was, there was my body. I was dying, this was death, and I wasn't ready to die. Somehow, the vibrations were killing me. Desperately, like a diver, I swooped down to my body and dove in. I then felt the bed and the covers, and when I opened my eyes, I was looking at the room from the perspective of my bed.

What had happened? Had I truly almost died? My heart was beating rapidly, but not unusually so. I moved my arms and legs. Everything seemed normal. The vibrations had faded away. I got up and walked around the room, looked out the window, and smoked a cigarette. ((Monroe, 1971b) pp. 2728)

Monroe went to his doctor, of course, to see what was wrong with him (does this sound familiar to you NDErs?), but his health was fine. Fortunately he eventually spoke to a psychologist friend who told him that yogis had experiences like this and he should explore them, rather than worry. He didn't find this advice particularly reassuring, but he had no choice in the matter as the vibrations and subsequent OBEs continued to occur.

I met Monroe in the fall of 1965 when I took a research position at the University of Virginia Medical School in Charlottesville. He was having OBEs regularly by then, although he hadn't developed the HemiSync© techniques he later used to train others. Monroe was as curious about the nature of OBEs as I was and also able and eager to question his own experiences, rather than be dogmatically swept up in them. He was fascinated by what I had found out in working with Miss Z. Did his own body show deathlike changes or similar brain wave changes? Could we test whether he was "really" at the OBE location, rather than just hallucinating it? While he had had some experiences of being at a distant location where he was able to confirm the events later, there were too many others where such confirmation was only partial or even negative, even though the experiences felt perfectly real. Too, if there were distinctive physiological changes during an OBE, then if we could learn to produce these same changes by other means in people we might have a way of helping them to have OBEs. Monroe was as curious about the answers to these questions as I was.

I was able to have Monroe come in for eight late night sessions (his OBEs usually began from sleep) from December 1965 to August 1966 at the hospital's EEG laboratory while he tried to get out of his body. This laboratory was not really equipped for sleep work, so much of the time Monroe was not completely comfortable on the cot we brought in and was unable to have an OBE. On his eighth night, however, things got interesting. Here are Monroe's notes, written the next morning.

"After some time spent in attempting to ease ear electrode-discomfort, concentrated on ear to 'numb' it, with partial success. Then went into fractional relaxation technique again. Halfway through the second time around in the pattern the sense of warmth appeared, with full consciousness (or so it seemed) remaining. I decided to try the 'rollout' method (i.e., start to turn over gently, just as if you were turning over in bed using the physical body). I started to feel as if I were turning, and at first thought I truly was moving the physical body. I felt myself roll off the edge of the cot, and braced for the fall to the floor. When I didn't hit immediately, I knew that I had disassociated. I moved away from the physical and through a darkened area, then came upon two men and a woman. The 'seeing' wasn't too good, but better as I came closer. The woman, tall, dark-haired, in her forties (?) was sitting on a loveseat or couch. Seated to the right of her was one man. In front of her, and to her left slightly was the second man. They all were strangers to me, and were in conversation which I could not hear. I tried to get their attention, but could not. Finally, I reached over, and pinched (very gently!) the woman on her left side just below the rib carriage. It seemed to get a reaction, but still no communication. I decided to return to the physical for orientation and start again.

Back into the physical was achieved simply, by thought of return. Opened physical eyes, all was fine, swallowed to wet my dry throat, closed my eyes, let the warmth surge up, then used the same rollout technique. This time, I let myself float to the floor beside the cot. I fell slowly, and could feel myself passing through the various EEG wires on the way down. I touched the floor lightly, then could 'see' the light coming through the open doorway to the outer EEG rooms. Careful to keep 'local,' I went under the cot, keeping in slight touch with the floor, and floating in a horizontal position, fingertips touching the floor to keep in position. I went slowly through the doorway. I was looking for the technician. but could not find her. She was not in the room to the right (control console room), and I went out into the brightly

lighted outer room. I looked in all directions, and suddenly, there she was. However, she was not alone. A man was with her, standing to her left as she faced me. I tried to attract her attention, and was almost immediately rewarded with a burst of warm joy and happiness that I had finally achieved the thing we had been working for. She was truly excited, and happily and excitedly embraced me. I responded, and only slight sexual overtones were present which I was about 90% able to disregard. After a moment, I pulled back, and gently put my hands on her face, one on each cheek, and thanked her for her help. However, there was no direct intelligent objective communication with her other than the above. None was tried, as I was too excited at finally achieving the disassociation and staying 'local.'

I then turned to the man, who was about her height, curly haired, some of which dropped over the side of his forehead. I tried to attract his attention, but was unable to do so. Again, reluctantly. I decided to pinch him gently, which I did. It did not evoke any response that I noticed. Feeling something calling for a return to the physical, I swung around and went through the door, and slipped easily back into the physical. Reason for discomfort: dry throat and throbbing ear.

After checking to see that the integration was complete, that I 'felt' normal in all parts of the body, I opened my eyes, sat up, and called to the technician. She came in, and I told her that I had made it finally, and that I had seen her, however, with a man. She replied that it was her husband. I asked if he was outside, and she replied that he was, that he came to stay with her during these late hours. I asked why I hadn't seen him before, and she replied that it was 'policy' for no outsiders to see subjects or patients. I expressed the desire to meet him, to which she acceded.

The technician removed the electrodes, and I went outside with her and met her husband. He was about her height, curly haired, and after several conversational amenities, I left. I did not query the technician or her husband as to anything they saw, noticed, or felt. However, my impression was that he definitely was the man I had observed with her during the nonphysical activity. My second impression was that she was not in the control console room when I visited them, but was in another room, standing up, with him. This may be hard to determine, if there is a first rule that the technician is supposed to always stay at the console. If she can be convinced that the truth is more important in this case, perhaps this second aspect can be validated. The only supporting evidence other than what might have appeared on the EEG lies in the presence of the husband, of which I was unaware prior to the experiment. This latter fact can be verified by the technician, I am sure." ((Tart, 1967), pp. 254255)

As with Miss Z, Monroe's physiological changes were interesting but not medically exciting. He was not at all near death, just showing the relaxed body characteristics of sleep and relaxation. This fits the general pattern that emerged from many later studies that says that while being physiologically close to death may facilitate the occurrence of an NDE, it's not necessary for either NDEs or OBEs. As to exactly what is Monroe's state during OBEs, there is some general similarity to Miss Z's in that both involve a stage 1 EEG pattern that is somewhat like, but not identical to, ordinary dreaming, but the two patterns, in the limited sampling of these two studies, are not identical. Monroe had some alphoid activity, but not the large amount Miss Z showed. He also showed REMs in his second OBE where he reported seeing a stranger with the technician. Too, in the all night study we also did with Monroe to get a baseline of normal sleep, when he wasn't trying for OBEs, he showed a normal pattern, and did not call the stage 1 REM periods that occurred there OBEs. He sharply distinguishes the states of consciousness of his dreams and his OBEs.

We must remember too that while there is a strong *correlation* between EEG stage 1 REM pattern and the *psychological* experience of dreaming, correlation is not causality or identity with the *physiological* state of stage 1. We can think of stage 1 REM as a physiological state that has evolved during the sleep of mammals. In humans the psychological activity of dreaming can use this physiological pattern to readily manifest itself, although psychological states very like dreaming may sometimes occur in other physiological conditions. Too, the *lucid dream*, a dream state in which consciousness "wakes up" and feels like it's pretty much in full possession of its waking faculties also occurs in the physiological state of stage 1 REM (see, e.g., (LaBerge, 1991)). Perhaps an OBE is also facilitated in this same physiological state.

Was Monroe really "out" when he saw the technician away from her machine and speaking with a strange man? In her notes, my technician reports:

.....In the second sleep the patient saw me (the tech) and he said I had a visitor, which I did. However, it is possible that Mr. Monroe may have heard the visitor cough during his (cigarette) break between sleeps. Mr. Monroe states that he

patted the visitor on the cheeks and tried to take his hand but that the visitor avoided. Mr. X recalls that he left the cot, went under it and out the door into the recording room and then into the hallway The patient did not see the number.”

Thus we have only weak evidence that Monroe was actually “out” on this occasion, a result he found as unsatisfactory as I did.

I left the University of Virginia post after a year there to take up a new position at the University of California at Davis, so our work (and I do say our, for I try (but don’t always succeed) to always work with collaborators/colleagues, not “subjects” — see (Tart, 1977b)) ended for the time being on a note both encouraging and frustrating. The scientific world had doubled it’s knowledge about EEG patterns during OBEs, since there were now two studies instead of none (although, as you can imagine, orthodox science has paid almost no attention to this knowledge), but a common pattern had not emerged, and the parapsychological aspects of Monroe’s OBEs had not been confirmed in this study.

Out-of-the-Body Experiences: Fourth Study

Several months later, after moving to California, I wanted to have more data about whether Monroe was really “out” in his OBEs, so I decided to try an experiment in which my wife Judy and I would, for a short period, try to create a sort of “psychic beacon” by concentrating on him, to try to help Monroe have an OBE and travel to our home. If he could accurately describe our home, this would be good evidence for a psi component in his OBEs because he had no idea what our new home was like. As in my first study using hypnosis to try to produce OBEs, I was hoping for a big effect that would be obvious evidence of ESP.

I telephoned Monroe and told him that we would try to guide him across the country to our home at some unspecified time during the night of the experiment. That was all I told him. That evening I randomly selected a time to begin concentrating; the only restriction I put on my choice was that it would be some time after I thought Monroe had been asleep for a while. The time turned out to be 11:00 PM. California time, 2:00 AM where Monroe lived in Virginia. At 11:00, my wife and I began our concentration; but at 11:05, the telephone rang. We never get calls late at night, so this was rather surprising and disturbing, but we did not answer the phone, nor did we have an answering machine so we didn’t know who had called. We tried to continue concentrating and did so until 11:30PM.

The following day, I telephoned Monroe and noncommittally told him that the results had been encouraging but that I was not going to say anything more about it until he had mailed me his written account of what he had experienced. His account was as follows:

The evening passed uneventfully, and I finally got into bed about 1:40 am, still very much wide awake. The cat was lying in bed with me. After a long period of calming mind, a sense of warmth swept over body, no break in consciousness, no pre-sleep. Almost immediately felt something (or someone) rocking my body from side to side, then tugging at my feet! (Heard cat let out complaining yowl.) I recognized immediately that this had something to do with Charley’s experiment, and with full trust, did not feel my usual caution with strangers (!) The tugging at my legs continued, and I finally managed to separate one second body arm and hold it up, feeling around in the dark. After a moment, the tugging stopped and a hand took my wrist, first gently, then very, very firmly and pulled me out of the physical (body) easily. Still trusting, and a little excited, I expressed feeling to go to Charley, if that was where he (it) wanted to lead me. The answer came back affirmatively (although there was no sense of personality, very businesslike). With the hand around my wrist very firmly, I could feel a part of the arm belonging to the hand (slightly hairy, muscular male). But could not “see” who belonged to the arm. Also heard my name called. Then we started to move, with the familiar feeling of something like air rushing around my body. After a short trip (seemed around 5 seconds in duration) , we stopped, and the hand released my wrist. There was complete silence and darkness. When I drifted down into what seemed to be a room.... (Tart, 1977a), pp. 190191.

When Monroe finished his brief OBE he got out of bed to telephone me: it was 11:05 PM, our time. Thus he experienced a tug pulling him from his body within one or two minutes of the time we started concentrating. The portion of his account that I have omitted, on the other hand, his description of our home and what my wife and I were doing, was quite inaccurate. He perceived too many people in the room, perceived my wife and me performing actions

that we did not do, etc. Looking at the description, I would conclude that nothing psychic had happened. Thinking about the precise timing, though, I can't help but wonder. Can one have an OBE in which one is really "out" in some sense, yet have grossly mistaken (extrasensory) perceptions of the location one has gone to? I don't know if that was the case in this experiment, but after years of researching how much perception is a semi-arbitrary construction, often badly distorted, even in our normal state (Tart, 1986), (Tart, 1994), I have no doubt that this is possible for OBEs. We'll return to this question later.

Out-of-the-Body Experiences: Fifth Study

In 1968 I was able to do one further study with Bob Monroe when he briefly visited California. I had a functioning sleep laboratory at UC Davis, more comfortable than the University of Virginia EEG lab, and he spent an afternoon with me and my assistants (Tart, 1969).

In the course of a two-hour session, Monroe had two brief OBEs, and reported awakening within a few seconds after each, allowing correlation of physiological recordings with the OBEs. EEG, eye movements, and peripheral blood flow (plethysmograph) were again recorded, and he was monitored via closed circuit TV for the first OBE.^[5]

Monroe was asked to try to produce an OBE, then to travel into the equipment room where I and my assistants were, and to read a five-digit target number in that equipment room. In his first OBE, he reported finding himself in the hall connecting the rooms for a period of eight to ten seconds at most, but then being forced to return to his body because of breathing difficulties. In his second OBE, he reported trying to follow the EEG cable through the wall to the equipment room but, to his amazement, found himself outside the building and facing the wall of another building, still following a cable. He later recognized a courtyard on the inside of the building, which had a three story wall and was 180 degrees opposite the equipment room, as the place he had experienced himself at. Although he had no memory of ever having seen this courtyard, it is possible that he could have gotten a look at it while in my office earlier in the afternoon. There was no cable in the courtyard, at least not on the surface although there may have been buried electrical cables under the surface connecting the wings of the building, and there were some cables from the laboratory room to my office, going most of the way toward the courtyard.

Again we have that frustrating pattern of my research with Monroe of no ESP results clear enough to be conclusive, but not results so clearly inaccurate that I would feel comfortable saying nothing at all happened. The EEG prior to the Monroe's reported OBE may be roughly classified as a borderline or hypnagogic state, a stage 1 pattern containing instances of alphoid activity rhythm (indicative of drowsiness) and theta activity (a normal sleeping pattern, part of stage 1). This pattern persisted through the first OBE, but was accompanied by a sudden fall of systolic blood pressure lasting seven seconds, this being roughly equivalent to Monroe's estimated length of his OBE. There was REM activity of an ambiguous nature during this period. The second OBE was reported after a period of EEG shifting between stage 1 and stage 2 sleep. This second OBE's exact duration is unknown, but appears to have been accompanied by a similar stage 1 pattern, and only two instances of isolated REM activity near the end. No clear-cut cardiac changes were seen on the plethysmographic recording. Monroe reported having used a different technique for producing the OBE this second time.

In general, then, Monroe's OBEs seem to occur in conjunction with a prolonged, deliberately produced hypnagogic state (stage 1 EEG). Such prolonged states are not normally seen in the laboratory. The preponderance of theta rhythms and the occasional slowed alpha show an intriguing parallel with EEG states reported for advanced Zen masters during meditation (Kasamatsu, 1966). Modern EEG feedback techniques have shown that subjects can learn to produce increased alpha rhythm, and to slow the frequency of their alpha rhythm. If I were still actively researching this area, I would try training people to produce theta and slowed alpha rhythms, controlled drowsiness, as it were, and see if this helped them have OBEs. This is the sort of thing that Monroe worked on developing with his HemiSync© procedures at the Monroe Institute, which Monroe often conceptualized as putting the body to sleep while keeping the mind awake. While I have been very intrigued and impressed with some of these results I have not followed them closely enough to give a professional analysis of them, but the interested reader should see (Atwater & Owens, 1995).

Out-of-the-Body Experiences: Sixth Study

The final OBE study I carried out in 1970 was like the first one in 1957, an attempt to use hypnosis to produce OBEs, but on a much more sophisticated level. I had done hypnosis research for a more than a decade by this time, especially investigating the use of posthypnotic suggestion to influence the content and process of nocturnal, stage 1 REM dreaming. I had a small group of highly selected and trained participants at UC Davis (see (Tart & Dick, 1970) for details on selection and training), we might justly call them hypnotic virtuosos, all in the upper 10% of hypnotic susceptibility. Besides being adept at having their nocturnal dreams influenced post-hypnotically, they had explored deep hypnotic states and were quite comfortable in the lab.

I no longer have the records available, having had to throw out a lot of old data on retirement from UC Davis for lack of storage space, so I can only give you the general results of the study. Basically, about seven of the participants had individual hypnotic sessions where they reached very deep hypnotic states, confirmed by their self-reports of hypnotic depth ((Tart, 1970), (Tart, 1972a), (Tart, 1979)) and then received a suggestion that, while the hypnotist remained quiet for 10 minutes so as to not disturb them or keep them connected to his or her body, their consciousness would leave their physical body and cross the hall into a second, locked laboratory room where some special target materials were on a table. They were to observe these materials carefully, then they could wander about out of body at will for a while, then return and report on their OBE to the experimenter, one of my graduate student assistants.

All the participants reported vivid OBEs that seemed like real experiences to them. They included journeys to places they knew, like downtown Davis, that were vividly experienced, as well as vivid experiences of journeying to the target room.

None of their reports of what they saw on the target table bore any clear resemblance to the targets. A formal analysis was not worth the trouble.

So an OBE is.....

So what is an OBE? Does the mind or soul really leave the body and go somewhere else, “out,” or is the OBE just a special ASC that is basically hallucinatory in nature, i.e. that the feeling and conviction that you are elsewhere than your physical body’s location is an illusion?

After decades of reflection on the results of my own and others’ research particularly in the light of my studies on the nature of consciousness and ASCs, I have a more complex view of OBEs that includes both of these possibilities at different times and more. I believe that in some OBEs, the mind may, at least partially, really be located elsewhere than the physical body—this may have been the case with Miss Z. At the opposite extreme, as with my virtuoso hypnotic subjects whose experience was vivid and perfectly real to them but whose perception of the target room was only illusory, I believe an OBE can be a *simulation* of being out of the body, and mind is as much “in” the physical body as it ever is. In between these two extremes, I believe we can have OBEs which are basically a simulation of being out, but which are informed by information gathered by ESP such that the simulation of the OBE location is accurate and veridical.

This is a messy situation in some ways, especially because all three of these types of OBEs may seem experientially identical to the person having them, at least at rough levels of description. While I would prefer reality to fall into simple, clear cut categories, I’ve learned in life that reality doesn’t care about our wishes for simplicity, though, and things are often complex.

Simulation of Reality:

I want to elaborate on the simulation model of consciousness here, as it’s important. We all have a model, a theory, about the nature of consciousness and of the world, although it’s usually implicit, we don’t consciously know we hold a theory. The theory is that space and time are real and pretty much what they seem to be and things have a definite location in time and space, that consciousness is “in” the head, and that from that spatial position we directly perceive the outside world through our physical senses. As a working model, this theory works quite well most of the time: if someone throws a rock toward you, e.g., an automated part of this model, what’s been called the *ecological self* (Neisser, 1988), instantly calculates the trajectory of the rock, compares it to its calculated position of where you are

and makes you duck if the trajectory intersects your position. In terms of biological survival, it is usually quite useful to psychologically identify with this ecological self and give very high priority to protecting your physical body. Indeed it's very difficult not to automatically identify with this ecological self process!

Looking at this in more detail, we now know, through decades of psychological and neurophysiological research, that this naïve view of perception, that consciousness just perceives the external world in a straightforward way, is quite inadequate. Almost all perception is really a kind of rapid, implicit and automated *thinking*, a set of judgments and analyses about what is happening and its relevance to you. When something moves in the periphery of your visual field, e.g., you will generally actually *see* a threatening person ducking behind a tree, rather than experience an ambiguous movement in the unfocused part of your visual field, leading to a thought of "What might it be?", leading to searches of memory for possible candidates that show some fit to the ambiguous perceptual data available, leading to a conclusion that a threatening person ducking behind a tree has a 45% chance of fitting the perceptual data while, e.g., a branch blowing in the wind has only a 30% chance of fitting, etc., so that it would probably be best to get ready for action. If it really was a threatening figure, the person who sees it that way *instantly* has a better chance of survival by reacting faster than the one who goes through a long sequential analysis process. It's as if there's a distinct evolutionary advantage for the organism that has instant readiness to fight or flee even at the price of some false alarms, compared to the organism that takes too long to get ready to flee or fight.

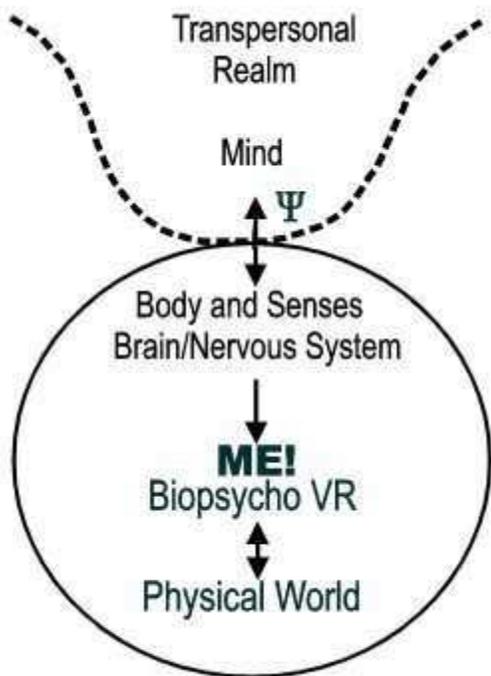
To jump to the end point of my and others' researches, it is useful to see our ordinary consciousness as a process that creates an ongoing, dynamic simulation of reality, a world model, an inner theater of the mind, a *biopsychological virtual reality* (BPVR)((Tart, 1991), (Tart, 1993)), "in" which consciousness dwells. The most obvious example of this process is the nocturnal dream. There we live in a complete world, set in dimensions of space and time, with actors, plots and an environment. Indeed, most of the brain mechanisms which construct that dream world are probably by and large the same mechanisms that construct our waking world *with the very important difference* that in the waking state this world simulation process must constantly deal with sensory input in a way that protects us and furthers our ends. Thus I've defined the reality we ordinarily live in as *consensus reality* (Tart, 1973), to remind us that even though we implicitly think we simply perceive reality as it is, it is actually a complex construction, strongly determined by the social consensus of our particular society about what's important and our own psychodynamics and conditioning.

Applying this perspective back to the study of OBEs and NDEs, we should first realize that the ordinary feeling that we are "in" our bodies (usually our heads), is a construction, a world *simulation*, that happens to be the optimal way to ensure survival most of the time, but that it is not necessarily true in any ultimate sense. I don't know what ultimate reality is, but it is helpful to remember that, just as a person using a high quality computer-generated virtual reality simulator forgets where their physical body actually is and becomes experientially located "in" the computer-generated world, it might be that our "souls" are actually located on Mars, but we are so immersed in the BPVR our brains generate^[7] that we think we are here in our bodies. This is a crazy idea, but helps to remind us that the experience of where we are is not a simple matter of just perceiving reality as it is.

A Scientific Model of Mind that Opens to Noetic Knowledge:

Those of you have had OBEs and NDEs know, on some very deep level, that mind or soul is something more than your physical body. The automatic psychological identification of who you are with the physical body, with the simulation constructed by the ecological self, is a very useful working tool, but not the final answer. As we discussed at the beginning, though, integrating this experiential knowledge with your everyday self in the everyday world is not always easy, especially when the so dominant climate of scientism constantly tells you that your deeper knowledge is *wrong* and that you are crazy to take it seriously.

My small contribution toward integration is the message that, using the best of scientific method rather than scientism, looking factually at *all* of the data rather than just what fits into a philosophy of physicalism, the facts of reality require a model or theory of who we are and what reality is that takes OBEs and NDEs and noetic knowledge seriously. You are not deluded or crazy to try to integrate your NDE knowledge with the rest of your life. You are engaged in a real and important process!



I can schematize my best scientific and personal understanding of our nature at this point with a diagram I've used in another paper (Tart, 1993).

Being a product of my culture, at the top of the figure I've put the transpersonal or spiritual realm, and I've shown it as unbounded in extent. Those of you who've had OBEs, NDEs or other transpersonal experiences know of what realm of experience I speak here, even if ordinary words can't grasp it too well. A part of that transpersonal realm, designated as mind in Figure 1, is in intimate relation with our particular body, brain and nervous system. As I mentioned briefly above, although this mind is of a different nature from ordinary matter, psi phenomena like clairvoyance and PK are the means which link the transpersonal and the physical, i.e., our mind has an intimate and ongoing relationship with our body, brain and nervous system through what I've termed *autoclairvoyance*, where mind reads the physical state of the brain, and *autoPK*, where mind uses psychokinesis to affect the operation of the physical brain.

The result of this interaction is the creation of a BPVR, what I've labeled **ME!** in the figure, to stand for Mind Embodied, with the boldness of the

type and the exclamation point added to remind us that our identification with and attachment to **ME!** is intense! This **ME!** is a simulation of our ultimate, transpersonal nature, our physical nature, and the external physical world around us. We ordinarily live inside this simulation and take it for the direct perception of reality and our selves, but those of you who've been "out" know, as we've discussed above, that our ordinary self is indeed just a limited point of view, not the whole of reality.

There is an immense amount of research needed to fill in the details of this general outline, but I think this conveys a useful general picture.

Summing Up:

Here are some of the key points of this wider, higher fidelity model.

(1) There is no doubt that the physics and chemistry of body, brain and nervous system are important in affecting our experience. Further research on these areas is vitally important, especially if it is done without the traditional scientific arrogance that physical findings in, e.g., neurology, automatically "explain away" psychological and experiential data.

(2) The findings of scientific parapsychology force us to pragmatically accept that mind can do things — information gathering processes like telepathy, clairvoyance and precognition and directly affecting the physical world with PK — that cannot be reduced to physical explanations with current scientific knowledge or reasonable extensions of it. So it is vitally important to investigate what mind can do *in terms of mind*, not wait for them to be explained (away) someday in terms of brain functioning — a form of faith that philosophers have aptly called *promissory materialism*, since it cannot be scientifically refuted. You can never prove that someday everything will not be explained in terms of a greatly advanced physics — or a greatly advanced knowledge of angels or dowsing or stock market movements or whatever. Recall that if there is no way of *disproving* an idea or theory, you may like it or dislike it, believe it or disbelieve it, but it's not a scientific theory.

(3) The kind of research on the nature of mind called for above is *vitally* important because most forms of scientism have a psychopathological effect on people by denying and invalidating transpersonal experiences that they have. This produces not just unnecessary individual suffering but also attitudes of isolation and cynicism that worsen the state of the world. See my Western Creed exercise for an elaboration of this point (Tart, 1989).

(4) Two of the most important kinds of transpersonal experiences people can have are OBEs and NDEs. They have major effects on experiencers' attitudes toward life. Both seem to constitute a revelation of a more ultimate or higher

understanding of who we really are. While this is important, it is also important to extensively investigate these phenomena as they themselves may be, at least partially, simulations of even higher order truths. The genuine scientific approach to them, then, is to take them seriously indeed but, with humility and dedication: (a) try to get clearer data on their exact nature; (b) develop theories and understandings of them (both in our ordinary state and in appropriate ASCs, along the lines of state-specific sciences that I have proposed elsewhere ((Tart, 1972b))); (c) predict and test consequences of these theories; and (d) honestly and fully communicate all parts of this process of investigation, theorizing and prediction.

Genuine and open scientific inquiry has a lot to contribute to our understanding of our nature.

Charles T. Tart, Ph.D.
Institute of Transpersonal Psychology, Palo Alto
and University of California at Davis, Davis, California

Footnotes

This article has no footnotes.

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