

**Friday 21 June 2013 – Afternoon**

**LEVEL 2 AWARD THINKING AND REASONING SKILLS**

**B902/01/RB** Unit 2 Thinking and Reasoning Skills Case Study

**RESOURCE BOOKLET (CLEAN COPY)**

**Duration: 1 hour**



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- This is a clean copy of the Resource Booklet which you should already have seen.
- You should refer to it when answering the examination questions which are printed in a separate booklet.
- You may **not** take your previous copy of the Resource Booklet into the examination.
- You may **not** take notes into the examination.

### INFORMATION FOR CANDIDATES

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## DOCUMENT 1

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### Near-death experiences – evidence of the paranormal?

There have been many reports from people claiming to have had a near-death experience (NDE). These come from all around the world, from different religions, cultures and generations.

Accounts of such experiences vary from person to person, though there is a range of common characteristics that have attracted scientific attention, particularly when the experience takes place when a person is unconscious in a controlled, medical environment.

One of the most commonly reported features of NDEs is the phenomenon known as the out-of-body experience, ie, having a perception of separation from the body in which you see your own body from the outside. Other common features of NDEs include:

- A feeling of peace
- Seeing a tunnel
- Seeing a bright light
- Seeing deceased relatives
- Believing one has entered a heavenly domain
- A positive effect on the person's life and their attitude
- A sensation of floating
- The person no longer being afraid of death after the experience.

NDEs have a profound effect on the person who has undergone the experience, and can be life changing. They are frequently interpreted as having religious significance, and many believe that they serve as evidence for life after death and for certain religious beliefs such as reincarnation or the existence of God.

The field of study known as 'parapsychology' investigates different ways in which humans interact with the environment that cannot be explained by science. These include people claiming to be able to move objects or communicate with others using their minds, as well as NDEs. Research into phenomena such as these has been controversial, as many academics do not consider such research to be scientific, calling parapsychology a 'pseudoscience'.

Neuroscience, the branch of scientific study concerned with the brain, is also interested in conducting research into what happens in the brain during an NDE. In particular, research is focused upon people who undergo heart surgery, as this can involve a period of time in which the patient is 'clinically dead\*'.

Research projects are ongoing and there are now several theories about the causes of NDEs, for example, psychological or biological, whilst others suggest a spiritual explanation.

**\*clinically dead: A physical state in which blood circulation and breathing have stopped.**

**DOCUMENT 2**

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**Some reported examples of NDEs**

Three-year-old German boy Paul Eicke was clinically dead for three hours after falling into a pond. When doctors brought him back from the brink he told them he had met his great-gran during his brush with death and she had told him he must go back to his parents. He said: "There was a lot of light and I was floating. I came to a gate and I saw Grandma Emmi on the other side. She said to me, 'What are you doing here Paul? You must go back to mummy and daddy. I will wait for you here'. I knew I was in heaven. But grandma said I had to come home. She said that I should go back very quickly. Heaven looked nice. But I am glad I am back with mummy and daddy now."

Norfolk pilot Tom Rayner was in a coma after a car crash when he became aware of looking down on his native East Anglia, then Europe and then the Earth's northern hemisphere. His 'journey' continued into space before being reversed and he found himself in Africa. After waking up, he sold his business, bought a Land Rover ambulance and went to Africa where he delivered drugs to a field hospital in the middle of a war zone.

Mike Richards was in hospital recovering from cancer when he suffered a relapse. Mike, 60, found himself in a pink room with no floor or ceiling. In the room were his deceased father and mother-in-law and a scruffy man in a white cloak who told him he wasn't ready and it was time to go back. But that wasn't all. When the cerebral palsy sufferer woke, he found he had the use of his disabled left hand for the first time ever.

Amateur athlete Christine Barratt almost died, aged 33, in a cycling accident in the Bahamas. She remembered a feeling of peaceful euphoria and seeing her life flash before her. A voice told her to either stay or go back and, if she went back, she'd be stronger than before. During her recovery she was told she would never run again, but Christine remembered the voice and went on to become a world class long-distance runner because of it.

Jeanette Atkinson was only 19 when she collapsed with multiple blood clots, but she remembers an overwhelming sense of peace floating up towards the ceiling and looking at her own body. She even remembers that the strip light in the ward was covered in dust and was surprised no one had the time to clean it.

## DOCUMENT 3a

**Pam Reynolds' NDE**

Dr Michael Sabom's book 'Light and Death' describes the near-death experience of Pam Reynolds, who underwent a rare operation to remove a large, life threatening aneurysm from her brain. The operation, nicknamed 'Standstill' by the doctors, meant that Pam had to be clinically and brain-dead before the aneurysm could be removed. She was brought back to life after the operation, and gave the following account of what she claims to have experienced whilst dead:

"I remember seeing several things in the operating room when I was looking down. It was the most aware that I think that I have ever been in my entire life ... I was metaphorically sitting on [the doctor's] shoulder. It was not like normal vision. It was brighter and more focused and clearer than normal vision ... There was so much in the operating room that I didn't recognize, and so many people.

I thought the way they had my head shaved was very peculiar. I expected them to take all of the hair, but they did not ...

The saw-thing that I hated the sound of looked like an electric toothbrush and it had a dent in it, a groove at the top where the saw appeared to go into the handle, but it didn't ... And the saw had interchangeable blades, too, but these blades were in what looked like a socket wrench case ... I heard the saw crank up. I didn't see them use it on my head, but I think I heard it being used on something. It was humming at a relatively high pitch and then all of a sudden it went Brrrrrrrrr! like that. Someone said something about my veins and arteries being very small. I believe it was a female voice and that it was Dr Murray, but I'm not sure. She was the cardiologist. I remember thinking that I should have told her about that ... I remember the heart-lung machine. I didn't like the respirator ... I remember a lot of tools and instruments that I did not readily recognize.

There was a sensation like being pulled, but not against your will. I was going on my own accord because I wanted to go. I have different metaphors to try to explain this. It was like the Wizard of Oz – being taken up in a tornado vortex, only you're not spinning around like you've got vertigo. You're very focused and you have a place to go. The feeling was like going up in an elevator real fast. And there was a sensation, but it wasn't a bodily, physical sensation. It was like a tunnel.

At some point very early in the tunnel vortex I became aware of my grandmother calling me. But I didn't hear her call me with my ears ... It was a clearer hearing than with my ears. I trust that sense more than I trust my own ears.

The feeling was that she wanted me to come to her, so I continued with no fear down the shaft. It's a dark shaft that I went through, and at the very end there was this very little tiny pinpoint of light that kept getting bigger and bigger and bigger. The light was incredibly bright, like sitting in the middle of a light bulb. It was so bright that I put my hands in front of my face fully expecting to see them and I could not. But I knew they were there. Not from a sense of touch. Again, it's terribly hard to explain, but I knew they were there ...

I noticed that as I began to discern different figures in the light – and they were all covered with light, they *were* light, and had light permeating all around them – they began to form shapes I could recognize and understand. I could see that one of them was my grandmother. I don't know if it was reality or a projection, but I would know my grandmother, the sound of her, anytime, anywhere.

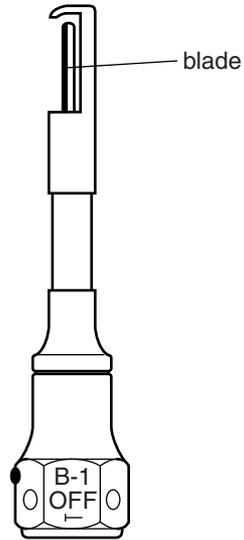
Everyone I saw, looking back on it, fit perfectly into my understanding of what that person looked like at their best during their lives.

I recognized a lot of people. My Uncle Gene was there. So was my great-great-Aunt Maggie, who was really a cousin. On Papa's side of the family, my grandfather was there ... They were specifically taking care of me, looking after me."

DOCUMENT 3b

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A drawing of a B1 bone saw that was used in Pam Reynolds' surgery.



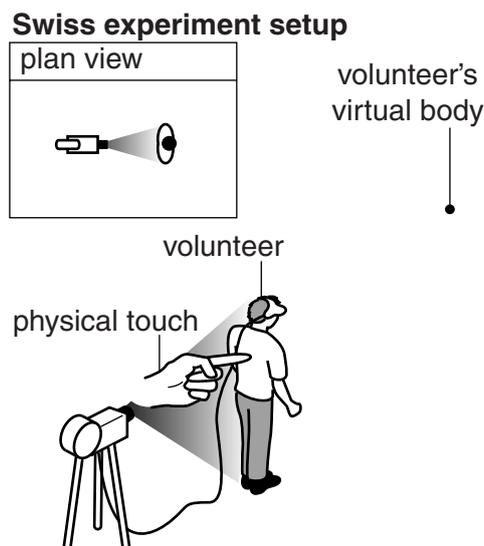
## DOCUMENT 4

**Extracts from a BBC news report about out-of-body experiences in 2007**

Experts have found a way to trigger an out-of-body experience in volunteers.

Research, from the Swiss Federal Institute of Technology in Lausanne, offer a scientific explanation for the phenomenon experienced by one in ten people.

In the experiments scientists used virtual reality goggles to con the brain into thinking the body was located elsewhere. The visual illusion plus the feel of their real bodies being touched made volunteers sense that they had moved outside of their physical bodies. The researchers asked volunteers to stand in front of a camera while wearing video-display goggles. Through these goggles the volunteers could see a camera view of their own back – a three-dimensional ‘virtual own body’ that appeared to be standing in front of them. When the researchers stroked the back of the volunteer with a pen the volunteer could see their virtual back being stroked. The volunteers reported that the sensation seemed to be caused by the pen on their virtual back, rather than their real back, making them feel as if the virtual body was their own rather than a hologram. And when the researchers switched off the goggles, guided the volunteers back a few paces, and then asked them to walk back to where they had been standing, the volunteers overshot the target, returning nearer to the position of their ‘virtual self’.



Leading psychologist, Dr Susan Blackmore said: “This has at last brought out-of-body experiences into the lab and tested one of the main theories of how they occur. Scientists have long suspected that the clue to these extraordinary, and sometimes life-changing, experiences lies in disrupting our normal illusion of being a self behind our eyes, and replacing it with a new viewpoint from above or behind.”

The research findings suggest that a disconnection between the brain circuits that process visual information and those that process touch information may be responsible for some out-of-body experiences.

**DOCUMENT 5a****Extracts from an article in *The Telegraph* newspaper in 2008**

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**A scientific experiment into 'out-of-body experiences'**

Some people report being able to soar out of their bodies and look down on themselves and medical staff.

Doctors in hospitals in Britain and the US will study 1500 heart attack patients to see if people with no heartbeat or brain activity can have 'out-of-body' experiences. Hospitals involved include Addenbrookes in Cambridge, University Hospital in Birmingham and the Morriston in Swansea, as well as nine hospitals in the US. The study at 25 UK and US hospitals will include doctors placing images on shelves that are only visible from the ceiling to test the theory.

Dr Sam Parnia, an intensive care doctor who is heading the study, said: "If you can demonstrate that consciousness continues after the brain switches off, it allows for the possibility that the consciousness is a separate entity. If no one sees the images, it shows these experiences are illusions or false memories. This is a mystery that we can now subject to scientific study."

Dr Parnia said that after a cardiac arrest, when the body is technically dead, doctors restart the heart and reverse the dying process. He said: "What people experience during this period of cardiac arrest provides a unique window of understanding into what we are all likely to experience during the dying process."

**DOCUMENT 5b****Comments posted on a website about the scientific research proposals reported in Document 5a.**

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**David Willis, Surrey**

When a spirit leaves its body it is more interested in the body it left behind than some ornament on top of a filing cabinet! The only thing this would prove, therefore, is that the patient's attention was on something else. So, we should ignore the ridiculous statement that "if no one sees the images, it shows these experiences are illusions or false memories".

**Trent Smith, Reading**

This is great. If it works, then it will put an end to this debate once and for all. If people can see something in an NDE that was impossible for them to see from the bed, then it will categorically prove that the soul exists and is not limited to the body. If the results of this experiment reveal that none of the patients reports seeing the images on the shelves, this will prove that NDEs are hallucinations.

**Joanne Gregory, Glasgow**

This is a complete waste of time, money and resources that could be used for something really useful, like finding a cure for cancer. These researchers just want to see people get sick and never find a cure. So, we should not support the funding of this research.

**Tom Fenwick, Burnley**

It's about time something like this was done to prove that NDEs are real – some things just cannot be explained by science. Either we do these experiments or we carry on being arrogant by thinking science can explain everything. Some things just cannot be explained by science.

**Harry Jones, London**

What a complete waste of time. What is wrong with these people? People who think they've seen a tunnel of light need their heads examining, if you ask me. Doctors are idiots.

**Yvonne Staples, Aberdeen**

I don't think it is morally right to conduct scientific research on heart attack patients, because when a person has a brush with death, any experiences they might have are very traumatic and private. So, doctors should respect their need for care and privacy by not subjecting them to unnecessary tests and questions.

**George Brown, York**

It could be argued that we will only know the truth by doing research. However, if science succeeds in proving NDEs are just an illusion, then this will have a negative effect on people who have had one. People have a right to believe whatever they like – sometimes it is better not to know the truth.

**DOCUMENT 6****Extracts from a *Daily Mail* article**

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**The great out-of-body experience ‘myth’**

For centuries, people have claimed to have had strange ‘out-of-body’ experiences.

Many have talked of looking down on their own bodies, while others speak of seeing a tunnel and a bright light. The phenomenon, reported by thousands from different cultures across the world, has so far defied logical explanation. But now experts claim to have uncovered evidence that out-of-body experiences are caused by a quirk of the brain rather than anything paranormal.

A team of doctors has stumbled across what may be the answer to the mystery when they were treating a patient for epilepsy. Because she was not responding to conventional drug treatments, they were stimulating various areas of her brain to assess whether she would be suitable for surgery to cure her condition. To their amazement, when they stimulated one brain region, it triggered an out-of-body experience. The effect could explain reports of people becoming detached from their bodies, the doctors say.

“It was a totally unexpected effect,” said Dr Blanke, a Swiss neurologist, whose report of the case is published today in the scientific journal *Nature*. “At first she felt as though she was falling. Then, when the current was increased, she felt she was looking down on her body. She was floating just under the ceiling. She wasn’t particularly frightened, but it was a very spectacular experience.”

After the first experience, the doctors repeated the experiment several times without telling the patient when they were stimulating the key part of the brain and when they were not. “The same sensation came back each time we stimulated this part of the brain,” said Dr Blanke, “She was absolutely convinced that she was looking down on her own body and the rest of the room. She could even see the other people in the room.”

“This could be an explanation for out-of-body experiences,” he added. “I think this shows that there is a scientific reason for them, rather than something paranormal. But they are complex phenomena which have been little studied, so we need more research based on this finding.”

## DOCUMENT 7

**Is Pam Reynolds' case evidence of a spiritual life after death?**

At a sixth form college, a Religious Studies class is given a group project based on the Pam Reynolds' case. One of the groups has a discussion about the significance of her account as evidence of life after death.

- Adil** This proves that there is more to a person than just a body! There is no way that this can be explained away by science – even the doctors admit that there is no explanation for what she saw. She had no access to the instruments used before surgery and she described that bone saw perfectly. Spooky.
- Georgina** That's a very naive view, Adil. Just because there is no explanation for something at the moment doesn't mean that there won't be in the future – scientists are working on it and one day they will be able to tell us how this happened.
- Francesca** You've got to admit, though, that this is an unusual case. She was brain dead, and that was confirmed by the doctors who performed the surgery. If the brain isn't active, then the things she saw can't possibly be explained by chemicals in the brain or stimulation of different parts of the brain.
- Adil** And her account is so similar to all the other reports we've learned about too! The tunnel, the light, the relatives... in fact, almost everyone who has ever had a NDE believes it was real so we can't argue with that.
- Francesca** That's true, but what I don't understand is why this doesn't happen to everyone who nearly dies and has to be brought back. Surely if there was some spiritual activity at death, then everyone would remember it when they come round.
- Georgina** Not necessarily – some people don't remember their dreams when they wake up in the morning, but that doesn't mean they didn't have any.
- Francesca** Fair point. I don't think there will ever be enough evidence to convince scientists that there is an after-life. If this case does not convince them then nothing will! They are too quick to move on to new projects when they can't explain things easily. When others try to explain what they couldn't, the scientists dismiss it as 'pseudoscience'.
- Adil** True. So many of the people who have NDEs go on to change their lives for the better, so there must be some truth in what they claim to have seen.
- Francesca** I don't know about that, but I do think it's interesting that there are so many similarities between different accounts, across different cultures too. The most likely explanation is that they are all experiencing the same spiritual reality.
- Georgina** Or that their brains all work in a similar way.
- Francesca** So are you saying it's all in the brain? I read about a poll carried out by an American TV station which invited heart attack victims to phone in and talk about their experiences. 20% of the callers claimed to have had NDEs. Clearly, there's more to out-of-body experiences than chemicals in the brain.
- Georgina** I'm not convinced. There was an interesting discovery recently, when doctors were treating an epilepsy patient. She wasn't responding to treatment, so they tried stimulating different regions of the brain and unexpectedly caused an out-of-body experience! That surely proves that the brain causes this kind of experience. Are you really the kind of idiot that can't see that NDEs are caused by brain activity?



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