

clearly been frightened by something that has happened to them, and are convinced that aliens are to blame.

Alien abduction as a memplex

I suggest that the aliens are a memplex; a memplex consisting of the idea of four-foot high skinny, large-headed creatures with big black eyes, an image of the ships they come in and the operations they perform, their intentions in visiting our planet, and all the other details we are fed through the media. As Elaine Showalter argues in her book *Hystories* (1997), such epidemics are spread by stories (though I would not describe them all as *hysterical*). Interestingly, the alien intentions vary with the group you favour. Followers of John Mack are inclined to the ecologically friendly type of alien who is coming to warn us of impending catastrophe, while followers of the Jacobs' school are abducted as part of an alien breeding programme making half-human-half-alien babies to invade our planet.

The memetic approach to alien abductions is to ask why these ideas should propagate so successfully, when they are not true. There is no mystery about why true and useful ideas should propagate successfully – they do so because people want and can use them. So memetics does not provide much advantage over other ways of looking at the world when it comes to understanding the success of good scientific theories or accurate news. However, memetics does help when it comes to explaining the spread of untrue, bizarre, and even harmful ideas. One such is alien abduction.

One key to alien abduction experiences is the phenomenon of sleep paralysis. During dreaming sleep most of our muscles are paralysed so that we do not act out our dreams. By the time we wake up this paralysis has usually worn off and we know nothing about it (unless experimenters intervene). However, the mechanism that keeps waking and dreaming apart can sometimes fail, especially in people who work shifts or have very disrupted sleep. Sometimes people wake up, can look around and think clearly, and yet are quite unable to move. Common sensations accompanying the paralysis include buzzing and humming noises, vibrations of the body or bed, a powerful sense that there is somebody or something in the room with you, and strange lights floating about. Since sexual arousal in dreams is common this can also persist into the paralysis. Sometimes, people feel as though they are being touched or pulled or even lifted from their bodies. If you recognise the symptoms, and can keep your cool, the best response is to relax and wait; the

paralysis wears off within a minute or two. If you try to struggle you only make matters worse.

If you have no idea what is going on, the experience can be terrifying, and a natural reaction is to blame someone or something, or to seek an explanation. In previous periods of history and different cultures, various 'explanations' have been available. The incubus and succubus of medieval times were evil spirits sent to tempt the wicked into sexual activity. Until the early twentieth century, people in the south of England blamed witches for what they called 'hag-riding', and even today there are people in Newfoundland who have been visited by the 'Old Hag' who comes at night to sit on their chests and stop them breathing. Kanashibari in Japan, Kokma in St Lucia, and the Popobawa in Zanzibar are just some of the other current sleep paralysis myths. These myths are all successful memes.

Our culture is now full of stories of outer space, spaceships, UFOs, and sinister aliens. If you suffer from sleep paralysis and do not know what it is, your mind supplies the most readily available 'answer'. Once you start to think about aliens in a terrified and paralysed state, the aliens will seem all the more real. No wonder people think they have been abducted.

This explanation is supported by evidence that abductees suffer sleep disturbances, including sleep paralysis, more often than control groups (Spanos *et al.* 1993). I would expect, although it has not been tested, that people who understand the psychological basis of sleep paralysis are unlikely to have abduction experiences, because they already have a better explanation for their experience.

Some people have only faint memories of disturbing experiences and are left wondering what happened. If they come across a hypnotist who specialises in 'recovering memories' of alien abduction then they are encouraged to relive the experience again and again until the story they tell comes to be indistinguishable from a real memory and is full of details of the aliens and their craft.

But this is not the whole story. The myth of abduction is a successful set of memes for other reasons too. For one thing, it is extremely hard to test, which has protected it from being demolished. The aliens, after all, are so clever that they can slip in through your ceiling without disturbing the plaster, whisk you away, do their wicked experiments and put you back, all without anyone else seeing you, or them. They are also adept at suppressing your memories of the abduction, and you may be left only with a fragment of uncertain memory and a tiny unexplained scar on your leg or nose. It may take an experienced hypnotist (who has plenty of experience with other abductees and knows just what questions to ask) to bring your full 'memory' back. The aliens are rarely captured on radar or

successfully photographed because they have such advanced technology. And if you want to know why no government has evidence of alien landings, well you know the answer – there's a conspiracy. Governments do, of course, have whole spaceships and even frozen alien bodies in store but they employ lots of people to ensure the evidence is concealed and the public is never allowed to know. If you wonder why none of these employees has ever let on, this just proves how powerful the conspiracy is. Interestingly, evidence that might appear to be *against* the myth, such as demonstrating that a claimed implant is really a filling, has almost no effect. Strong believers quite rightly point out that one piece of negative evidence cannot disprove their beliefs, and non-believers never thought it was an implant in the first place.

The abduction memplex has been enormously successful and we can now see why. First it serves a genuine function. That is, it provides an explanation for a scary experience. I suspect that if my student had known about sleep paralysis before he had his first abduction experience, it never would have turned into an abduction experience. Second, the idea appeals in modern American (and to a lesser extent European) culture. Humans, like many of their primate relatives, have evolved to defer to high-status males and to be afraid of them. God thrives on this natural tendency but so too do the more modern powerful beings, who use the trappings of our scientific world and prey on genuine fears of technology. Third, the idea is promoted by television companies who have viewers eager to watch sensational programmes, and participants eager to tell their amazing, unique, fantastic, first-hand, real-life stories and to feel very special (and possibly even get rich) by doing so. And finally, the idea is more or less irrefutable, and protected by a more or less plausible conspiracy theory.

Just how good the protection is will determine how long the memplex lasts. Like a virus, it will spread to infect as much of the susceptible population as it can reach and then, like a virus, stop spreading. Because its only genuine function depends on people being ignorant about sleep paralysis, the dissemination of scientific understanding of sleep may undermine it. Also, as many people ask for concrete evidence and none is forthcoming, the claims may eventually wear thin. Since this kind of television feeds on novelty and surprise, the producers will not keep asking abductees to come and tell their amazing stories forever. This particular memplex, although successful, has a limited life. Others look a bit more secure.

Death and the truth trick

Research shows that people of all ages and backgrounds have somewhat similar experiences when they come close to death and are revived (Blackmore 1993). Although most experience nothing, those who do report experiences tend to describe going down a dark tunnel towards a bright light, leaving the body and viewing their body from above, travelling to a beautiful place where beings of light await them, occasionally experiencing scenes from their life replayed all at once, and finally having to make a difficult decision to return to ordinary life. Normally, the experience is happy and peaceful, although occasionally it can be hellish. Above all, it feels absolutely real – 'realer than real'. I have had this experience myself (although I was not close to death) and it was vivid, beautiful, absolutely realistic, and had a dramatic effect on my life. Reports from as long as two thousand years ago and from many different cultures suggest that the basic experience is common to humans everywhere and can affect them profoundly.

The core features of this complex experience can be understood in terms of what is going on in a brain under stress. For example, the surprisingly positive emotions are probably due to the brain releasing endorphins (morphine-like chemicals) under stress. Fear and stress also result in widespread random firing of neurons throughout the brain which, depending on where it occurs, has different effects. For example, stimulation of the temporal lobes (which can be done experimentally) can induce floating and flying sensations, memory flashbacks, and feelings of religious significance. Perhaps most interesting is the origin of the tunnel. Cells throughout the visual system are organised so that many are devoted to the centre of the visual field and far fewer to the periphery. So when all the cells fire randomly, the effect is like a bright light in the middle fading out towards the edges, or bands and lines in spirals and rings. This may be the origin of the near-death tunnel as well as the tunnels that are common in Shamanistic drawings and certain drug experiences.

Some near-death experiencers are happy to find rational explanations, but many reject them. They know they saw Jesus. He was as real as real can be. They know that they have a spirit that left their body, travelled down the tunnel and went to heaven. And they know their experience is proof of life after death.

What is interesting from the memetic point of view is that Christians typically see Jesus while Hindus meet Hindu deities (Osis and Haraldsson