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# ANOMALY:

## VOLUME 47 EDITORIAL

2013 saw the latest incarnation of ASSAP's biennial conference, Seriously Strange. Anomaly 47 serves both as ASSAP's annual journal and the proceedings of the residential conference, which drew hundreds of people to the University of Bath for two days of talks and lively debate. Many of our speakers and panellists have contributed pieces relating to their conference appearances, including Guy Lyon Playfair's summary of his research into reported twin telepathy, Brian Clegg's take on the state of parapsychology today and Jack Hunter's introduction to the emerging discipline of paranthropology. Those not at the conference will also want to note Richard Freeman's piece on the elusive orang-pendek and Robert Moore's *Interconnections*, which asks whether granting UFOs their own subset within the larger "anomalous phenomena" category is justified. Readers are called upon to think it through for themselves and to remember that more research is required – both very ASSAPian themes.

Anomaly 46 was the first edition of the journal to offer readers formally peer-reviewed papers as well as articles and book reviews, and Anomaly 47 follows in this mould. It provides a diversity of content, from Dave Wood and CJ Romer's in-depth commentary on issues arising from Seriously Strange's ghost investigation panel to Andrew May's *The Mathematics of Belief* on the potential of Bayesian statistical methods to help anomaly researchers get closer to the facts. Also included is an analysis of ASSAP's National Belief and Experiences Survey, providing a fascinating look at current belief levels in ghosts and UFO phenomena.

Anomaly welcomes contributions from members, so if you would like to share your original research or commentary, please get in touch using the contact details on page 7.



# ANOMALY:

## JOURNAL OF RESEARCH INTO THE PARANORMAL

The Association for the Scientific Study of Anomalous Phenomena was formed in 1981 to study a wide range of paranormal phenomena. These fall into the broad categories of psychic phenomena, Earth Mysteries, Ufology and Fortean phenomena. ASSAP holds no corporate views and the views, wording and images used by individual authors are their own responsibility.

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# ASSAP NATIONAL BELIEF AND EXPERIENCES SURVEY

*Nicky Sewell and Dave Wood*

At Seriously Strange 2013, the conference of the Association for the Scientific Study of Anomalous Phenomena, the National Belief and Experiences Survey (NBES) was launched. This was based on professional polling conducted by professional pollsters YouGov.

The purpose of the project is to track the paranormal beliefs and experiences of British population over time. ASSAP aspires to commissioning the polling on an annual basis. This will allow the public belief in different anomalous phenomena to be monitored over time, to see emerging trends and help direct investigations and research. Similarly assessing the types of phenomena people report experiencing will help to direct activities.

There has already been wide interest in the emerging NBES from academics and across the community. The data stands more or less in isolation at the moment, with broad comparisons to similar past polling, but as the data builds year on year much more meaningful comparisons can be made.

The following are some headline observations and comparisons with similar polls. Note that the comparisons needed to be signed off by YouGov, as the professional pollsters, so they could guarantee that the polls were similar enough to make meaningful comparisons:

- 52% of Britons agreed to a greater or lesser extent with the question: I believe some people have experienced ghosts
- This is an increase on a previous poll in 2009 (39% believed in ghosts, Comres\*)
- 42% of British men believe in ghosts compared to 63% of women
- People aged 35-44 were most likely to believe (61%) whilst 18-24 were least likely (40%)
- Social grade was not a big indicator (ABC1 at 53% and C2DE at 52%)

- People from the East Midlands are most likely to believe in ghosts (65%) and London the least (45%)
- From our calculations based on the survey, around one in five people reported having had a paranormal experience.
- 39% of Britons agreed to a greater or lesser extent with the question: I believe some people have witnessed UFOs
- This is down from 52% in 2008 (YouGov\*\*)
- Fewer men believe in UFOs (36%) compared to women (41%)
- People aged 35-44 were most likely to believe (49%) whilst 18-24 were least likely (31%)
- Social grade was not a big indicator (ABC1 at 37% and C2DE at 40%)
- People from the North East are most likely to believe (51%) and London and the South West the least (32%)

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 2,286 adults. Fieldwork was undertaken between 28 and 30 August 2013. The survey was carried out online. The figures have been weighted and are representative of all GB adults (aged 18+).

The raw numbers have been included in an appendix.

# WHERE DO WE GO FROM HERE? THE FUTURE OF GHOST INVESTIGATION

*Dave Wood and Christian Jensen Romer*

At Seriously Strange 2013, the conference of the Association for the Scientific Study of Anomalous Phenomena (ASSAP), a panel of paranormal investigators were brought together to discuss the question 'what is the future of ghost investigation?' This paper will briefly review the findings of that panel, and use this as a launchpad for addressing the deeper questions of whether there is any point in ghost hunting? Can the activity achieve anything and if so how? The paper finds that ghost hunting can be either a reassurance to a distressed client, or cause further distress. The activity can provide a safe place for thrill seeking. If focused without the distraction of pseudo-scientific or spiritual techniques, a large number of well-trained ghost hunters might provide some hope of evidence for further study.

## INTRODUCTION – THE HISTORY OF GHOST INVESTIGATION

Ghost hunting really began in Ancient Greece. Pliny gave in his *Letter to Sura: LXXIII* the tale of the philosopher Athenodorus who rented a house in Athens that was going cheap. He was warned the property was haunted, but this just intrigued him and determined to get to the bottom of the mystery he took the lease anyway. That very night the ghost appeared, rattling chains and making a sound like clanking iron, and after waiting for Athenodorus to finish his work led him to a spot in the garden, pointing at it. The next day Athenodorus called the magistrates who dug up the spot and found a skeleton wrapped in chains, which was properly reburied. The haunting stopped from that day on! This story supposedly occurred just before the time of Christ – and it establishes motifs which we recognise to this day – rattling chains, people scared from housing, a ghost which is the spirit of the dead seeking recompense, human remains, and so forth. It is generally called the first ghost investigation – not by any means the first ghost story. (We can find ghosts in Homer, Plutarch, and a whole host of other classical authors).

In the Middle Ages ghosts were an issue for the church, and while most spooks seem to have manifested in dreams, we have plenty of modern sounding ghost stories. In King Richard's England a voice was heard in a house at Dagworth, Suffolk, telling secrets and causing chaos with its spiteful gossip. It developed in

to what we would today call a poltergeist case – but like many medieval cases was investigated by the local authorities, but is known to us mainly through its inclusion in a monastic chronicle (Ralph of Coggeshall; Thurston). Most of the medieval cases, however, come from one of the 'miracle collections'. These books were collections of strange, anomalous, miraculous and spooky stories that were maintained at pilgrimage sites like shrines and abbeys by monks and read for the edification of the pilgrim trade – and as such their purpose was to entertain and edify. Investigation of ghosts was not a priority in an age which was mainly concerned with discerning if the spirit was one trapped in Purgatory and needing assistance, or a demonic impersonator sent to lead people astray. As such, investigation was often in the form of theological speculation, rather like the academic theorists of apparitional experience of our time like Evans, Romer, Tyrrell and Hart, who concerned themselves with understanding the experience rather than trying to investigate it personally.

The English Civil War marks a turning point in the history of ghost hunting, at least in England. In the seventeenth century many Protestant theologians had rejected the idea of Purgatory, and the very idea that the dead could walk as spirits. The majority position was that ghosts were demons; and we see this ambivalence expressed in Hamlet Act 1, Scene 1 when the ghost manifests. By the 1640s, however, a spirit of academic interest in the supernatural had grown up, particularly in Cambridge (Gauld, 1978), and soon after the Phantom Drummer of Tedworth began to plague the magistrate Mompesson and Joseph Glanvill investigated the case which he wrote up in *Saducismus Triumphatus* (Glanvill, 1681). The second half of the sixteenth century saw a great deal of scholarly investigation – and accurate record keeping by the investigators (Redgrove, 1921). We find a haunted house near Oxford, a strange poltergeist case in Bristol, and many more alleged wonders carefully investigated. A commission of gentlemen was even sent to investigate the claims that the Battle of Edgehill replayed in the skies for some time after the real battle (though the story may be little more than a political satire – opinions are divided). However, scientific ghost hunting had its origins in this period. In fact Matthew Hopkins, Witchfinder General, and the Salem witch trial magistrates, can be seen in this scientific tradition of empirical investigation.

However, the Age of Reason in the eighteenth century on the whole dismissed ghosts and phantasms utterly as symptoms of nothing more than imagination, histrionics, or indigestion causing hallucinations. This latter hypothesis was very popular with eighteenth century sceptics and medical men, and we see it satirised next century by Dickens in *A Christmas Carol*. When the first ghost manifests to Scrooge he responds as follows, explaining to the ghost why he cannot trust his senses – “Because ... a little thing affects them. A slight disorder of the stomach makes them cheats. You may be an undigested bit of beef, a blot

of mustard, a crumb of cheese, a fragment of an underdone potato. There's more of gravy than of grave about you, whatever you are!" (Dickens, 1843). In such a prevailing climate of derision to all ghost accounts there was little incentive to report them or to investigate them, and while we have the usual succession of cases many of those which did gain widespread publicity, like that of Scratching Fanny of Cock Lane (Chambers, 2006), were "solved" and demonstrated to be hoaxes. This was a recurring motif, and some unfortunates were prosecuted as rogues who were out to cause trouble or make money. There is no reason to think that the Enlightenment was any more lacking in anomalous phenomena than our age: it was simply that the explanatory mechanisms prevented any real investigation. The eighteenth century sceptics were the men of culture and taste who led fashion, and to oppose their opinions was to invite sharp ridicule. However, much of this rationalist stance was informed by a deep-seated anti-clericalism, and ghosts were seen as vestiges of medieval Catholic superstition – everything the Enlightenment philosophers opposed. The fact their sceptical explanations often appear ridiculous to us today should be a warning to us all.

The second half of the nineteenth century saw the explosion of interest in the supernatural, as popular culture influenced by the Romantics embraced the gothic, the medieval, and the mystical, and recast them in (to them) modern sensibilities. A number of Ghost Societies grew up, and many prominent Victorians participated in them in their university days (Ruickbie, 2013). The arrival of Spiritualism in Britain mid-century led to some serious attempts at controlled experiments, and in 1869 the London Dialectical Society appointed a committee to investigate the phenomena. This led to the 1882 creation of the Society for Psychical Research, which established a Committee on Haunted Houses, and then produced *Phantasms of the Living* (Gurney et al, 1886) and the Report on the Census of Hallucinations (Sidgwick et al, 1894), cornerstones of modern apparitional research. Ballechin House (Freer, 1899), Willington Mill (Hallowell & Ritson, 2011), The Cheltenham Ghost (Morton, 1892) and many more well recorded cases occurred in this century and still provoke discussion today. In the same period however popular ghost hunting was often associated with urban unrest, and scenes of violence and vandalism. Rumours of ghosts gave rise to large mobs of excited citizens, and at times armed vigilantes, out to unmask the impostors dressing up as spooks and scaring whole communities. On occasion innocents were injured or shot by these mobs, but also a number of ghost impersonators were caught (Middleton, 2013).

With the twentieth century ghost hunting was to become a little more sedate, respectable, and less violent. The first great twentieth century ghost author was Elliott O'Donnell; something of a maverick, his incredible output of books would be amazing even today. Many of his collections can be found in modern editions, and it soon becomes clear to the reader O'Donnell may not be the most

trustworthy investigator of all time. Nonetheless his ideas are certainly interesting, and were for a while at least influential (Romer, 1995). Better remembered today, if mainly for the Borley Rectory Case, is Harry Price, who must count as one of the great figures of twentieth century ghost hunting. Space will not permit a detailed discussion of his importance. Likewise, three journalists conducted investigations and wrote interesting and useful books that reached large audiences; firstly James Wentworth Day, and later his protégé Peter Haining, but joining them also Dennis Bardens and author Colin Wilson's many books on the paranormal. The influence of the partworks *Man Myth & Magic* (1970) edited by occult historian Richard Cavendish and later *The Unexplained* (1980) edited by Peter Brookesmith should not be underestimated, and to this day the *Fortean Times* (originally "The News" (1973)) exerts a widespread influence with a circulation of 16,000.

In terms of research Peter Underwood, Andrew Green, Nandor Fodor, A. R. G. Owen, Alan Gauld and Tony Cornell all carried out large numbers of case investigations; to attempt to name all the influential figures in the second half of the century would take an article many times longer, but John and Ann Spencer, Guy Lyon Playfair, Maurice Grosse, Barrie Colvin, Alan Murdie and David Fontana in the UK, and D. Scott Rogo and William Roll in the USA reached large audiences with their ideas. After Price and Borley the Enfield Poltergeist Case was perhaps the high point of media interest, and Maurice Grosse and Guy Lyon Playfair (Playfair, 1981) became extremely well known figures even outside of parapsychological circles. The interest in the case remained strong, and in 1992 Stephen Volk's *Ghostwatch* presented a fictional depiction of a haunted house that caused a seismic shock through British broadcasting.

The twentieth century was also the great age of the theorist who attempted to make sense of material collected in the *Census of Hallucinations* (Sidgwick et al, 1894) and later case studies rather than directly investigating the locations. G.R.M Tyrell, Hornell Hart, Louisa Rhine, D.J. West and later Hilary Evans all stood in this tradition, which continues to the modern day with the work of Erlendur Harraldsson, Rebecca Smith and Simon Sherwood.

One thing that can be expected from any paranormal research society is that it will schism, and the same individuals will over the years belong to a bewildering number of groups named with acronyms! Even the oldest groups do this; in the 1990s the Ghost Club split in to the Ghost Club and the Ghost Club Society, and from the SPR in 1981 a group of defectors interested in doing more spontaneous case research and frustrated by the then SPR committee split off to form ASSAP.

In the above overview the fact that many ghost investigations were conducted by Spiritualists has been passed over for reasons of space, but these kind of investigations were almost certainly always in the majority, though less widely publicised than the work of the authors cited above. In 1888 the Society for Psychical Research lost many of its Spiritualist members who found the SPR far too sceptical, and accused it of being a debunking organisation. Many of those ex-SPR members joined the College of Psychic Studies, and a number of other Spiritualist magazines (notably *Light* and *Two Worlds*, and the newspaper *Psychic News*) served the faithful. Spiritualism always differed from Alan Kardec's Spiritism, which has adherents in the UK, and in the 1950s Spiritualism split again between the adherents of Christian Spiritualism, the Spiritualists' National Union and other organisations. Author Arthur Findlay set up his College at Stansted Hall in Essex, and later the Noah's Ark Society arose to study physical mediumship. In the 1990s the *Spiritual Scientist Bulletin* arose from the Scole Group working in physical mediumship, and the mediumistic sittings held in Scole, Norfolk remain to this day a fascinating but divisive and controversial area. The authors note that this brief overview cannot begin to do justice to the complex and important history of mediumship in the UK.

And in a sense the twenty-first century saw the spiritualist and psychic approach to ghost investigation restored to full public attention, with the TV series *Most Haunted*, and a host of imitators. Psychic Derek Acorah became a household name. This was by no means the earliest paranormal TV – earlier examples included the BBC2 series *A Leap In the Dark* in the 1970s which dramatised famous paranormal cases, and later *James Randi Psychic Investigator* (a sceptical show from 1991), *Strange But True* (1993) and Anglia TV's *Magic & Mystery Show* (1995) and the Discovery Channel series *Ghosthunters* (1996) which featured interviews with many prominent psychical researchers about their strongest cases. What *Most Haunted* did was to inspire a generation of ghost hunters by taking the immediacy of the then popular reality TV genre and placing it in a paranormal context. In this it was preceded by MTV's *Fear* (2000) and *Scariest Places on Earth* (2001) but not until *Most Haunted* did a reality paranormal show really seize the public imagination.

Today popular expectations of paranormal research are still informed by *Most Haunted*, and the public expect "spiritual methods", EMF meters, and a vigil based approach to investigating ghosts that are seen as always of the category that the twentieth century theorists called "hauntings" – that is, location based phenomena that are seen by repeated witnesses over time (and according to most research seem to comprise a minority of cases: the underlying assumption is the 'ghost' is somehow 'present' in a location and may manifest at any time, if somehow tempted out for the cameras). Perhaps a more dangerous assumption

inherent in the *Most Haunted* approach is that an investigation is something performed by a team on location in something of a vacuum – the show tends to de-emphasise the experiences of other past witnesses except as an explanation for why the location is investigated, and puts the emphasis firmly on personal experiences undergone by the investigators while present themselves. This experience-centred approach and the vigil methodology are default (and unexamined) assumptions in much twenty-first century British ghost hunting.

Much ghost investigation today still follows the *Most Haunted* model, even though many participants seem to reject the influence of the show. A growing number of investigators seem to be concerned with the gadget- and spiritual-heavy approach to present-day ghost investigation. This was typified in the findings of the conference panel. The ethics of the whole field have been called into question, leading to the government recognition of ASSAP as a professional body for investigators of anomalous phenomena, a venture mainly focussed on raising ethical standards amongst investigators.

#### FINDINGS OF THE PANEL ON THE FUTURE OF GHOST INVESTIGATION

The conference panel comprised several experienced paranormal investigators. It was chaired by Dave Wood, who has been Chairman of ASSAP since 2007, a regular investigator of more than a decade and has co-run the ASSAP investigator training weekend for six years. Christian Jensen Romer is a well-respected author, lecturer and psychical researcher. John Fraser was a council member of the Ghost Club and Society for Psychical Research and author of *Ghost Hunting: A Survival Guide*. Steve Parsons is an experienced ghost hunter, organiser of paranormal events and pioneer of infrasound research. Hayley Stevens is a stalwart of the sceptical movement and long-standing paranormal investigator.

The panel took a range of questions from the audience about ghost investigation past, present and future. The panel was unanimous on several points:

- The panel agreed that 'ghost gadgets' were more of a hindrance than a help. Pseudo-scientific and spiritual tools and methods were attractive to paranormal investigators, but they were poorly applied, used without a great deal of knowledge and did not produce useful results.

- The panel also agreed that more research and collaboration was needed. Ghost investigators working with the academic community was seen as being particularly useful.
- The panel felt that ghost investigation would continue for the foreseeable future. As people continue to believe in ghosts and to report them, people will continue to investigate them.

The rest of this paper will delve deeper into the key questions of whether there is any point in ghost investigation and what can it achieve.

This was a brief overview of the findings of the panel. The full video can be viewed here: [assap.ac.uk/videos](http://assap.ac.uk/videos)

## WHAT IS THE POINT OF GHOST INVESTIGATION?

It is fair to say that certainly these authors are unaware of any credible evidence that has resulted from ghost investigation. Ghost photos, voices and individual experiences do not stand up to outside scrutiny. However an uncounted number of investigators and groups still operate continuously in the UK and internationally, so what motivates these people?

## CLIENT REASSURANCE

Many ghost investigation cases surround a concerned family in a private home. The genuine desire to help these clients no doubt motivates a number of investigators. Being able to help a client make sense of a potentially distressing 'haunting' can be rewarding.

However equally those who have non-statutory vulnerable clients (that is potentially distressed, but not vulnerable by definition of the state) may be motivated by attempting to find evidence of ghosts within a private home setting. This is natural but can raise ethical questions. Using pseudo-scientific and spiritual methods in a person's private home will tend to produce spurious 'evidence' – ghost communications, electronic voice phenomena (EVP) or orb photographs – the presence of which can make the client's perception of a haunting worse.

ASSAP recommend putting research second and reassurance first when dealing with such clients. Ethics should be the primary consideration and ASSAP recommends investigators follow its Professional Code of Ethics.

## THRILL-SEEKING

A large number of both professional and amateur 'event' companies exist to service the need of thrill-seeking would-be ghost investigators. These tend to be 'experience evenings' revolving around spiritual mediums, demonstrations of equipment and making the paranormal reality TV experience accessible to the average person.

Whilst such events have little real research value they act as a useful outlet for thrill-seekers, so long as professionally run and no harm is done. Such thrill-seekers, in the absence of these companies, may attempt amateur investigation of their own with vulnerable clients and may cause more harm than good.

## SOCIAL GROUP GENERATION

A number of amateur groups exist that provide a social outlet for members who may investigate, attend day trips, lectures, etc. They may be founded by individuals who particularly enjoy a leadership role. Often these groups tend to enjoy the thrilling atmosphere of attending old buildings, turning the lights off and hoping to have a personal experience.

## PERSONAL VALIDATION OR CURIOSITY

Many ghost investigators may be primarily interested in seeking personal experiences to validate their own beliefs or satisfy their curiosity.

Like the rest of the motivators discussed so far, this tends to lend itself to the use of pseudo-scientific or spiritual methods. Sitting in an old building, in the dark and using gadgets and conducting séances provides the optimal setting for a personal experience. However in all likelihood these experiences are the result of ambiguous stimuli (the darkness) and creating a context of spookiness and anticipation.

Participants in such investigations may well feel they have had a convincing personal experience, or that the results of pseudo-scientific or spiritual methods are somehow meaningful, but such personal experiences do not stand up to scrutiny.

## FINDING OBJECTIVE EVIDENCE

Investigators who attempt to find objective evidence might either conduct experiments or may attempt to recreate circumstances in order to rule out phenomena in an effort to identify experiences that defy explanation.

Such motivators are perhaps less common as they do not involve use of gadgets or turning off lights and may therefore be less thrilling,

ASSAP's recommended method is gathering original eyewitness accounts, attempting to recreate the circumstances of these experiences and try to find rational explanations for the experiences.

Where explanations cannot be found the reason may be a lack of information at the time, but yet the likely explanation is unknown but quite natural. In a small number of cases there might be something unexplained and worthy of further investigation.

#### CAN GHOST INVESTIGATION ACHIEVE ANYTHING?

The ASSAP rationale is that objective investigations that recreate circumstances and rule out experiences as natural are more likely to hone down those rare unexplained events. Whereas the approach of using gadgets and seeking personal experiences risks missing out on this elusive evidence.

An alternative point of view is that more random experimentation might result in expected advances in the field. If large numbers of investigators use a large number of methods it is theoretically possible that one of these might throw up unexpected results. The counter-argument is that this has not happened so far and that is with this being the dominant method used at this time.

It is also possible that results may already have been thrown up, but that they were not identified due to the volume of methods and tools being used, or because the people using them were not adequately trained to recognise them.

#### HOW CAN GHOST INVESTIGATION ACHIEVE ANYTHING?

If one were to accept the argument that a large number of investigators using a large number of methods were a possible way forward, the way forward might be for those investigators to be better trained in order to recognise any interesting results that might arise.

However the more fruitful line of enquiry might be to rationally rule out the experiences of original eye witnesses in order to try to identify unexplainable events. Since this approach is relatively rare, more investigators moving over to this method would seem to be a logical way forwards. There will always be a large number of investigators using more random methods, whilst the rational approach is largely under-represented.

There is also a danger within the field that no progress will be made whilst we wait for expected evidence to arise. In this respect standalone research is an important way forward. Attempting to gain a greater understanding of how people experience, what factors affect this and how to measure them are important to understand. Working with the academic community to design and conduct research is one way to try to get a better understanding of the nature of ghost experience.

Stepping back slightly from the problem we need to make sure that it is worthwhile continuing investigating ghosts. So long as investigators are willing to continue investigating claims this might be considered worthwhile. However the net impact of ghost investigation should also be considered.

If a by-product of continuing ghost investigation is that potentially distressed people are reassured, then this is a major reason to justify the activity. However if this benefit is outweighed by the distress caused by unethical ghost hunters then the whole field is compromised in terms of benefits to the wider world. There is no way to quantify the net benefits of ghost investigation, but ethical training for all investigators would be a clear benefit.

#### RECOMMENDATIONS FOR THE FUTURE OF GHOST INVESTIGATION

This discourse leads to a series of recommendations for the future of ghost investigation:

1. Ethics training for those using pseudo-scientific or spiritual techniques. Recognising the different motivations for investigators, these methods will continue to dominate much of the field. In order for these not to be harmful they should be kept away from vulnerable clients and kept to more neutral settings, for example a museum or castle hired for the purpose. Ethical training, for example through the National Register of Professional Investigators, would help to achieve this. This is one reason why the NRPI is not restricted to investigators who are purely rational. The NRPI exists to raise standards amongst all types of

investigators. It exists to ensure investigators do not do harm, rather than to try to ensure good scientific practice amongst all investigators.

2. Science training for investigators. Where investigators do use a number of pseudo-scientific or spiritual methods they should be trained to recognise possible interesting evidence that might arise, so that such evidence is not lost in the stream of random or meaningless data. ASSAP now provides such training at Training Weekends and by a distance learning qualification, although such training currently cannot deal with the numbers of investigators who need or want it. Investigators better trained in science are also more capable of conducting standalone research to better understand how people experience ghosts.
3. Publishing findings. Better trained investigators publishing higher quality investigation reports would allow effective peer-review. This level of collaboration may allow other investigators to identify interesting findings and attempt to replicate them.
4. Collaboration with academia. Investigators who are better trained in science and ethics may be able to attract academic collaboration. Bringing together non-academic investigators with academics would benefit both. Allowing investigators the benefit of the trained mind of the academic, whilst providing field settings for academics to experience. Collaboration with academic is also a useful launchpad for standalone research which would allow further understanding of the nature of ghost experience.
5. More rational investigations. Rational investigations are uncommon amongst ghost investigators. The more investigators who are able to reject pseudo-scientific and spiritual methods, the more chance there is investigators will be able to identify less explainable experiences. The group may always be in the minority, but a better balance between rational investigators and others may provide the best of both worlds. Rational investigators would focus less on groups of people sitting in the dark using EMF meters and conducting séances. Rational investigators gather original eyewitness accounts, replicate circumstances, develop hypotheses to test to attempt to rule experiences out as being normal. This will allow us to hone down to those experiences less easily explainable. This method may turn its back on the traditional 'team' approach to investigations, allowing small groups to investigate in a more focussed way.

## CONCLUSIONS

Perhaps a balance is needed between large numbers of investigators using large numbers of methods, hoping that a random breakthrough might occur on the one hand, with rational investigators on the other hand honing down experiences to those less explicable.

The former method will also dominate much of the field, but the more investigators who take the rational route the better balance there might be and the more chance of standalone research and academic collaboration which would allow our understanding of ghost experience to better develop.

Better training in science and ethics will ensure that less harm is done by ghost investigators to potentially distressed clients, and would allow investigators to spot trends and evidence as it emerges.

As levels of belief and experiences continue at the present rate there will also be people who experience ghosts and people who investigate them. Very little progress has been made by host investigators so far. But rebalancing towards more rational investigation might provide a brighter future for getting to the bottom of why people experience ghosts.

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# A REVIEW OF DMT IN RELATION TO CLOSE ENCOUNTERS OF THE FOURTH KIND

*Simon Grace*

## ABSTRACT

During the 1990s, drugs trials were undertaken at the University of New Mexico using Di-Methyl Tryptamine, one of the most powerful psychedelic drugs known. Volunteers on the trials reported experiences that had many features in common with reports of alien abduction (Close Encounters of the Fourth Kind). The research lead, Dr. Rick Strassman, hypothesised in his 2001 publication *DMT the Spirit Molecule*, that the pineal gland, located deep within the brain, may be an endogenous DMT source, producing psychedelic amounts of DMT at times of extraordinary stress. Research results posted by the Cottonwood Research Foundation in May 2013 appear, for the first time, to have established the presence of DMT within the pineal of live rodents, thus confirming that DMT is endogenous to the mammalian brain. It is therefore tentatively suggested that naturally occurring imbalances of pineal DMT may be a contributing factor in the experience of a purported CE4 event.

## INTRODUCTION

This paper has been written to provide an introduction to the Di-Methyl Tryptamine (DMT) psychedelic drugs trials performed by Dr. Rick Strassman at the University of New Mexico, from 1990 – 1995. The results of Strassman's research are pertinent to a number of parapsychological experiences such as Close Encounters of the Fourth Kind (CE4, alien abduction) and near death experiences and, as such, deserve to be more widely known. This paper focuses on DMT in relation to CE4 events. *DMT the Spirit Molecule* (Strassman, 2001) which details the DMT research programme and the trial volunteers' experiences is highly recommended to readers wishing to gain a fuller understanding of this drug's effect. The author recognises that the conclusions presented in this paper are likely to be somewhat controversial, especially given the degrees of belief and scepticism associated with this subject matter.

## DMT IN RELATION TO CE4 EVENTS

"It started with a sound. It was high pitched like a tightly taut wire. There

were four or five of them. They were on me fast. As crazy as this sounds, they looked like saguaro cactus, very Peruvian in colour. They were flexible, fluid, geometrical cacti. Not solid. They weren't benevolent but they weren't non-benevolent. They probed, they really probed. They seemed to know time was limited. They wanted to know what I, this being who had shown up, was doing. I didn't answer. They knew. Once they decided I was okay they went about their business. I felt like something was inserted into my left forearm, right here, about three inches below the chain link tattoo on my wrist. It was long. There were no reassurances with the probe. Simply business. When they were on me, there was a little bit more confusion than fear. Kind of like 'Hey! What's this?' and then there they were. There was no time for me to say who the hell are you guys, let's see some ID?".

This description, provided by Ben1 (Strassman, 2001), incorporates many features that are characteristic of an apparent CE4 event. CE4 events typically incorporate the following experiences:

- "Immobilisation by a blinding blue / white light.
- A sense of floating into a white round room or operating theatre.
- Painful physical examination, often involving the removal of ova or semen.
- The implanting of an object or carrying out keyhole surgery using long, thin probes." (Pope, 1996)

One would expect that CE4 experiences are mercifully rare but this would not appear to be the case. The Roper Polls (Hancock, 2006) were a series of three national polls performed by the Roper Organisation in the United States in 1991. They aimed to gather data about unusual personal experiences. The results of the Roper Polls established that:

- One in five respondents had, at some point, woken up paralysed with the sense that a strange figure or presence was in the room;
- One in eight respondents had experienced a period of one hour more in which they were lost but could not remember why;
- One respondent in 10 had felt the experience of actually flying through the air without knowing how or why;
- One respondent in 12 had seen unusual lights or balls of light in a room without understanding their cause;
- One respondent in 12 had discovered scars on their body which they could not recall how they were acquired.

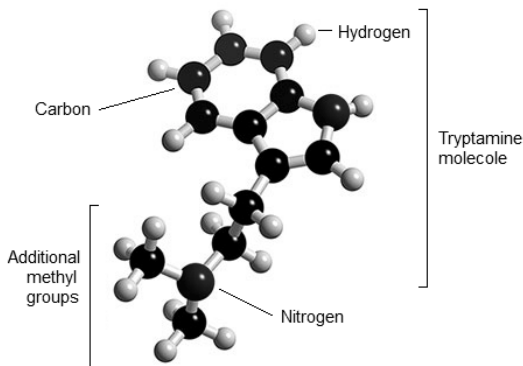
The Roper Poll designers were aware that the experiences described above are characteristic of reported CE4 events. The 2% of respondents who claimed to have experienced four or more of the above experiences were therefore

classified as likely abductees. Ben was not however an abductee. He was one of 60 or so volunteers on Strassman's DMT trial, the first psychedelic drugs trials performed in the US since the 1970s.

Psychedelic drugs fall into three principal classes:

- Phenethylamines which include well known drugs such as mescaline and ecstasy;
- Tryptamines which include drugs such as psilocybin, the active ingredient in magic mushrooms;
- Lysergamides such as LySergic acid Diethylamide (LSD). (Wikipedia, 2013)

DMT is one of the most powerful known psychedelic drugs. It is also one of the simplest consisting of tryptamine molecule with two additional methyl groups (Fig. 1).



*Fig. 1 DMT molecule (Harrison, 2011)*

Psychedelic drugs, including DMT, exert their primary effect on the brain's serotonin system, mimicking the effects of serotonin in some cases and blocking them in others. Serotonin receptors exist in high concentrations in areas of the brain associated with psychological and physical processes such as cardiovascular function, temperature regulation, mood, perception and motor control. Intravenously administered DMT takes effect within several heartbeats and volunteers are, dose depending, back to normal within 20 to 30 minutes (Strassman, 2001).

Ben's 'encounter' with non-human / alien beings whilst under the influence of DMT was typical of many of the volunteers on Strassman's DMT research

programme. Remarkable consistencies were found between the volunteers' experiences, typically:

- "Sound and vibration build until the scene shifts to an alien realm;
- The volunteer finds themselves in a landing bay, research environment or high technology room;
- The highly intelligent beings of this other world are interested in the subject, seemingly ready for his or her arrival and waste no time getting to work;
- There might be one particular being clearly in charge, directing the others;
- Volunteers frequently comment on the emotional quality of the relationships; loving, caring or professionally detached;
- The beings' business appeared to be testing, examining, probing and even modifying the volunteer's mind and body;
- The purpose of the alien contact was unclear but several volunteers felt that it was an attempt to improve them individually or as a race". (Strassman, 2001)

During the course of Strassman's DMT trials, each volunteer was tested with several different doses of DMT in order to establish the correlation between dose and psychedelic effect. In many instances the dose was of sufficient magnitude to cause the volunteer to experience the alien realm a number of times. One of the observations made by some volunteers who had such an experience was that the alien realm felt truly like visiting another world that exists independently of our own:

- A volunteer did not step back into the alien world where they had left it at the end of their last psychedelic experience;
- Time moved on in the alien realm parallel to our own time;
- The alien beings were expecting the reappearance of the volunteer.

The question that now requires addressing is that of how does injecting a volunteer with DMT in a test laboratory potentially help explain CE4 events which are experienced by everyday people who are not psychedelic drugs users? The answer to this question would appear, according to Strassman, to centre on the function of the pineal gland. The pineal gland is located near the centre of the brain, between the two hemispheres (Fig. 2).

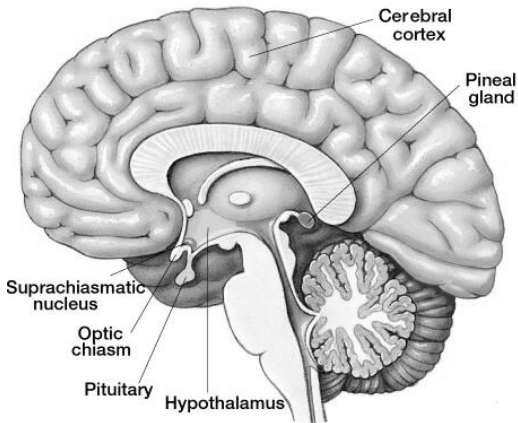


Fig. 2 Pineal gland location (Credit: healinghaven.typepad.com, 2013)

The pineal gland is located between the brain's two cerebral hemispheres. Its name is derived from its shape, which is like that of a pine cone. The pineal gland contains several neuropeptides and neurotransmitters, such as somatostatin, norepinephrine and serotonin. The major pineal function is production of the hormone melatonin, a derivative of the amino acid tryptophan. In humans melatonin plays an important role in the regulation of sleep cycles. Its production is influenced by the detection of light and dark by the eye (Encyclopaedia Britannica, 2013). Melatonin is not however 'psychedelic', meaning that it does not cause visions or any similar experiences.

Strassman has proposed that the pineal gland may produce psychedelic amounts of DMT at times of extraordinary stress in our lives such as may occur during an accident, thereby causing an out of body or near death experience. Strassman makes a strong argument for the pineal gland synthesising DMT on the grounds that this gland:

- Contains all the building blocks and enzymes required to make DMT, e.g. serotonin (highest concentrations found in the body) and the methyltransferase enzymes required to methylate tryptamine;
- Makes other substances, the beta carbolines that inhibit the breakdown of DMT by the body's monoamine oxidases, hence enhancing DMT's effects.

Strassman's proposal regarding pineal gland DMT production would appear to have been vindicated when the Cottonwood Research Foundation announced on 23 May 2013 the acceptance for publication of a paper documenting the detection of DMT in the pineal glands of live rodents (Cottonwood Research

Foundation, 2013). This finding would appear to confirm the pineal gland as an endogenous source of DMT within the brain. The Cottonwood Research Foundation's website advises that the paper will be published in the journal *Biomedical Chromatography*.

Given these research findings it is therefore tentatively suggested by the author that naturally occurring imbalances of pineal DMT may be a contributing factor in the experience of a CE4 event. This hypothesis is given more credence when it is understood that many abductees describe being 'taken' from their marital bed or a car whilst their partner or other passengers are totally oblivious to the event that appears to be unfolding in their midst, e.g. the event is 'internal' to the abductee. Further to this many abductees report sighting a UFO through the windscreen / rear view mirror of their car prior to being abducted. Such sightings may be a hallucination, a phosphene, brought on by an increased level of DMT within the brain. Phosphenes are subjective images, independent of an external light source, that originate within the eye and brain and can be induced by chemical agents such as psychedelic drugs (Hancock, 2006).

Imbalances of DMT within a subject's brain do not however offer a satisfactory explanation of CE4 events involving more than one abductee such as the classic 1961 case of Betty and Barney Hill (Pope, 1996). It must however be noted that the Hills' testimony was obtained under hypnotic regression – a technique that is now known to have its defects. This is exemplified by Alvin H. Lawson's 1976 study which compared the under hypnosis accounts of four UFO abductees with those of four student volunteers without UFO experience who imagined the abduction experience through hypnosis (Lawson, 1997). Lawson found that the accounts of both groups were very similar and also had a lot in common with perinatal memories, reports of near death experiences, shamanic practice or drug induced hallucinations. Lawson's findings would appear to resonate with those of Strassman some two decades later.

## CONCLUSION

Given:

- The DMT experiments conducted by Strassman at the University of New Mexico during the early 1990s established that the experience of a DMT 'trip' has much in common with a CE4 event;

and

- Recent confirmation that the pineal gland produces DMT within the brain;

then it is suggested that CE4 experiences may, in some instances, be explicable

as being caused by a high level of DMT spontaneously occurring within the subject's brain. Such a hypothesis is supported by the results of the 1991 Roper Poll which suggests that around 2% of the US population claim to have experienced such phenomena, e.g. 2% of the US population, some 6.28 million people, are not realistically being abducted by aliens.

In addition, this hypothesis may also be supported by the concept of 'cultural tracking' – the phenomena by which 1960s abductees' accounts describe control panels, switches and reel-to-reel tape recorders during a reported CE4 experience, and that there are no descriptions of high technology such as computer touch screens until we had invented them ourselves. Cultural tracking is often explained in terms of abductees not relating to things they did not recognise or alien technology being only a small step ahead of our own. It is suggested that it is far more likely that an abductee's experience of day-to-day technology influences what they perceive when under the influence of a psychedelic substance such as DMT. This explanation is considered to be far more likely than alien races traversing interstellar distances using technology comparable to that existing during the 1960s.

To conclude, current findings indicate that further research into this field is required as it could be a key explanatory factor into the majority of reported CE4 incidents. The Cottonwood Research Foundation will be publishing a paper documenting results of the detection of DMT in the pineal glands of live rodents in the journal *Biomedical Chromatography* in the near future.

## NOTES

The volunteers who participated within Strassman's DMT trials are identified by pseudonym.

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# ORANG-PENDEK: A NEW SPECIES OF APE FROM SUMATRA?

*Richard Freeman*

For well over a century now reports of an upright walking species of ape unknown to science have emerged from the jungles of Sumatra, a large island in Western Indonesia. Reports have been made by both native people and westerners and have included some impressive eye witnesses. The general description of the animal from a correlation of the reports runs thus...

Orang-pendek means 'short man' in Indonesian. The creature is said to be powerfully built and immensely strong but relatively short at around 3 to 5 feet in height. It walks upright like a man and rarely, if ever, moves on all fours. It is generally said to have dark brown or black fur but honey coloured or reddish hair has been reported. Sometimes a long mane of hair that falls down to the shoulders is also mentioned. The orang-pendek generally seems to be a solitary creature, though there are rare reports of groups of them being seen together.

Many Indonesians fear the orang-pendek on account of its massive strength but it is not thought of as aggressive. Mostly the creature will move away from any human it sees. It is said occasionally to use rocks and sticks as crude weapons, hurling them when it feels threatened. Like most wild animals it is probable that the orang-pendek might become aggressive if cornered or surprised.

Its diet is - in the main - herbivorous, consisting of fruits, vegetables and tubers. There are a number of reports of the animal ripping open logs to get at insect larvae. Rare reports tell of it taking fish and freshwater molluscs. Early reports tell of some of them feeding off the flesh of dead rhinoceros that had fallen into native pit traps.

Native knowledge of the creature goes back into the mists of history and there are a number of localised names for the orang-pendek around the island. It is called sedapa or sedapak in the south-eastern lowlands. Gugu is the name in southern Sumatra whilst in the Rawas district it is atu rimbu. In Bengkulu it is known as sebaba.

It should be noted that the Sumatran orang-utan (*Pongo abelii*) is found only in the far north of Sumatra north of the Batang Toru River and has never been known in Western Sumatra or Jambi (Griffiths, Singleton and Wich, 2003).

## EARLY REPORTS

One of the earliest accounts comes from William Marsden in his 1784 book, *The History of Sumatra: containing an account of the government, laws, customs and manners of the native inhabitants, with a description of the natural productions, and a relation of the ancient political state of that island.*

William Marsden (1754-1836) was an English orientalist who joined the East India Company at the age of 16 and was sent to Sumatra, where he became principal secretary (presumably a liaison) to the Dutch Colonial government. In his book, he records...

"In the course of my inquiries among the natives, concerning the aborigines of the island, I have been informed of two different species of people dispersed in the woods, and avoiding all communication with the other inhabitants. They are called the Orang Cooboo and the Orang Googoo. The former are said to be pretty numerous, especially in the part of the country which lies between Palembang and Jambie. Some have at times been caught and kept as slaves at Laboon and a man of that place is now married to a tolerably handsome Cooboo girl who was carried off by a party that discovered their huts.

They have a language quite peculiar to themselves and eat promiscuously of whatever the woods afford, as deer, elephant, rhinoceros, wild hogs, snakes or monkeys. The Googoo are much fiercer than these differing in little but the use of speech from the Orang Utan of Borneo; their bodies being covered with long hair. There have not been above two or three instances of their being met with by the people of Laboon (from whom my information is derived) and one of these was entrapped many years ago in the same manner as the carpenter in Pilpay's Fables caught the monkey. He had children by a Laboon woman, who were also more hairy than the common race; but the third generation are not to be distinguished from others. The reader will bestow what measure of faith he thinks due, on this relation, the veracity of which I do not pretend to vouch for. It probably has some foundation in truth but is exaggerated in the circumstances." (Marsden, 1784)

The 'Orang-Cooboo' of which Marsden speaks are, in fact, the Suk Anak Dalam people, the aboriginal inhabitants of Sumatra whom are sometimes called 'kubu' (dirty) by the Malay inhabitants of the island.. The 'Orang Googoo' refers to the orang-gugu, a local name used mainly in southern Sumatra. The idea of an orang-pendek - if indeed it is an anthropoid ape - mating with a human woman and her bearing its children is absurd, but it is a folkloric motif found wherever

hairy, man-like creatures are reported. This story has analogues in stories of the yeti, sasquatch, the almasty of central Asia, the di-di of South America, and many others.

Of course, the orang-pendek would have no language as we would know it, but there is an old legend in Indonesia that states that the orang-utan can speak but stays silent in the fear that if man found out that he could speak he would be sent to work. Maybe similar legends were attached to the orang-pendek.

The first Dutch traders arrived in Indonesia in the late sixteenth century, and the Dutch East India Company became an enormous economic power in the region. Much of what is now Indonesia became a group of Dutch colonies in the early nineteenth century and remained so until soon after WW2. Because of this long tradition of European influence in the area there are many reports from westerners in the early part of the twentieth century.

In 1918, the Sumatran Governor, L.C. Westenenk, wrote about the creature. He recorded an event that took place in 1910.

"A boy from Padang employed as an overseer by Mr. van H-- had to stake the boundaries of a piece of land for which a long lease had been applied. One day he took several coolies into the virgin forest on the Barissan Mountains near Loeboek Salasik. Suddenly he saw, some 15m away, a large creature, low on its feet, which ran like a man ... it was very hairy and was not an orang-utan; but its face was not like an ordinary man's..."

Westenenk also recorded another encounter. In 1917 a Mr. Oostingh, owner of a coffee plantation at Dataran, was in the forests at the base of Boekit Kaba when he saw a figure sitting on the ground about 30 feet away.

"His body was as large as a medium-sized native's and he had thick square shoulders, not sloping at all. The colour was not brown, but looked like black earth, a sort of dusty black, more grey than black. He clearly noticed my presence. He did not so much as turn his head, but stood up on his feet: he seemed quite as tall as I (about 1.75m). Then I saw that it was not a man, and I started back, for I was not armed. The creature took several paces, without the least haste, and then, with his ludicrously long arm, grasped a sapling, which threatened to break under his weight, and quietly sprang into a tree, swinging in great leaps alternately to right and to left.

My chief impression was and still is 'What an enormously large beast!' It was not an orang-utan; I had seen one of these large apes before at

the Artis (the Amsterdam Zoo). It was more like a monstrously large siamang, but a siamang has long hair, and there was no doubt it had short hair. I did not see the face, for, indeed, it never once looked at me." (Westernek, 1918)

A Dr. Edward Jacobson said that in 1916, while he was camped near the base of Boekit Kaba Mountain, some scouts told him they had seen an orang-pendek breaking open a fallen log as it looked for insect larvae. When the animal saw the scouts, it ran away on its hind legs. Jacobson also reported that he had seen some footprints at Mount Kerinci. They were like those of a human, but shorter and broader. (Jacobson, 1917)

Another Dutch settler, Mr. van Herwaarden, began researching the creature in 1916 and was initially a sceptic, but in 1918 he found a series of footprints near Moesi Oeloe. Later, he talked to a man called Breikers who had found similar tracks. Van Herwaarden eventually met three Suku Anak Dalam natives who said they had seen an orang-pendek; they said that it was about 4.5 feet tall, with a hairy body, long hair on its head, and long canine teeth.

In May of 1927 A.H.W. Cramer, a Dutch plantation employee who lived in Kerinci, reported seeing an orang-pendek from a distance of only 10 meters. He was with a native woodcutter at the time. The creature had long hair and black skin, and ran away at high speed leaving small, human-like footprints. (Anon, 1927)

Also in 1927, an orang-pendek was caught in a tiger trap but broke free. Zoologist K.W. Dameran examined the traces of blood it left and determined that it was not from a bear, gibbon or human. (Dameran, 1930)

From the 1930s onwards the interest in the creature seemed to wane. As WWII loomed people had other things on their minds.

#### LATER REPORTS

In the 1940s, 50s, 60s and 70s little was heard of the orang-pendek in the west. Apparently native people still encountered the creatures but the sightings rarely made the media.

Englishwoman Debbie Martyr began her research in the late 1980s. Debbie first visited Sumatra in July 1989 as a travel writer. Whilst camped on the slopes of Mount Kerinci at some 11,150 feet, her guide Jamruddin pointed out areas where Sumatran rhinoceros and tiger could be seen. Then, casually, he commented that in the forested mountains east of Gunung Tujuh sometimes orang-pendeks were seen. When Debbie made a sceptical comment Jamruddin

told her he had seen the orang-pendek twice himself. He told her it was still common but getting rarer in the Kerinci area due to the incursions of farmers. (Martyr, pers comm)

Debbie found that in the more populated areas around the foothills of Mount Kerinci no one had seen an orang-pendek in three years. However, people who gathered rattan (a spiny vine) in the forest had seen them more recently. In lower lying areas the creature was little known, but in remote villages in the hills there were recent reports. (Martyr, pers comm)

She gathered detailed descriptions from the headmen of villages - sometimes as much as 60 miles apart. It was 3 to 5 feet tall with a potbelly, more prominent ears than a siamang gibbon (*Symphalangus syndactylus*), and a high forehead. It had a mane of hair that could be black, dark yellow or tan, which hung down to the base of the spine. The body was covered with black or grey hair that was thicker on the limbs. All witnesses said the creature was bipedal.

One witness she spoke to, an old dukun or witch doctor living near Mura Amat, said that the orang-pendek ran with its arms held out. Many reliable sightings came from semi-cultivated areas on the edge of the forest where the animal was seen eating sugar cane and bananas. There were five such reports, one from Mount Kerinci near the village of Palompek and the others from settlements around the small town of Lempur some 33 miles south-east of the large town of Sungeipenuh. The sightings occurred before 7am and after 3pm. One witness, a 33-year-old man from close to Palompek, described his sighting thus...

"I was in my grandfather's house (a bamboo hut) in his fields and looked out and saw two orang-pendeks. One was bigger than the other. They were eating sugar cane. I went out to look at them more closely. The big one saw me. Then they both ran away. They ran like a man. Quite fast."

The witness stated they were not humans or monkeys, and was offended when Debbie suggested they might be sun bears (*Helarctos malayanus*) or siamangs.

All witnesses she spoke to rejected these explanations. They also rejected the idea that what they had seen were the forest dwelling Suku Anak Dalam people. Orang-utans are native only to the north-east of Sumatra and are quite distinct from the orang-pendek.

Debbie returned to Sumatra in September and spoke to the headman of the village of Selempaing that lies some 3,600 feet above sea level and around 30 miles south-west of Sungeipenuh. The headman said that in recent weeks he had twice seen a female orang-pendek in the fields around the village. The

headman, along with a reformed rhino poacher called Musih, acted as guides and the trio set off to explore the treacherous terrain outside of the village.

After a day's trek south they came to a forested river valley at an altitude of 4,600 feet. Here Debbie found the tracks of two orang-pendek. She followed them up a steep muddy bank for 120 feet before they became lost in a drier area. The larger of the two sets was 6 inches long and just under 4 inches wide at the broadest part. They resembled human tracks but were broader and with a larger ball. The instep was heavily flattened. She calculated that the creature that made them was a little over 4 feet tall.

She took photos that were of little use due to poor lighting, but also took two plaster casts. One was destroyed on the gruelling trek back to Sungeipenuh, but the surviving cast she showed to the Park Director at the Headquarters of Kerinci Seblat National Park. Prior to seeing the cast, he had dismissed the orang-pendek as a folktale because the local people were 'simple'. Within an hour of seeing the cast, the Director and his deputies admitted that it was not from any animal of which they knew. The cast was sent on to the Indonesian National Parks Department in Bogor. Since then, despite a number of requests, they have not published their conclusions. (Martyr, 1995)

Debbie, together with photographer Jeremy Holden, engaged in a 15-year search funded by Fauna and Flora International. Jeremy used camera traps set up in remote jungles but failed to capture the creature on film, although he did catch a glimpse of the creature once as he climbed over a ridge in the jungle. The orang-pendek swiftly moved away from him. He only saw it from the back but noted it walked upright like a man. Jeremy later moved on, but Debbie stayed in Sumatra becoming the head of the Indonesian Tiger Conservation Group. Since then she has had her own encounters with the 'short man'. (Martyr, pers comm)

My good friend Adam Davies, who together with Andrew Sanderson and Keith Townley, found and cast orang-pendek footprints, as well as hair in the Kerinci area.

Primate biologist Dr. David Chivers, of the University of Cambridge, compared the cast with those from other known primates and local animals and said...

"...the cast of the footprint taken was definitely an ape with a unique blend of features from gibbon, orang-utan, chimpanzee, and human. From further examination the print did not match any known primate species and I can conclude that this points towards there being a large unknown primate in the forests of Sumatra." (Davies, 2008)

Dr. Jeffrey Meldrum, Associate Professor of Anatomy and Anthropology, and Adjunct Associate Professor of the Department of Anthropology at Idaho State University had the following to say about the cast:

“The cast, if accurate, seems most likely to represent a primate appendage of some kind — flat footed, five digit, divergent medial digit — features not combined in other common wildlife tracks. If the cast represents a primate footprint, the very short heel, indicated by the position of the presumed hallux (medial toe) bears some resemblance to that of an orangutan foot, which boasts a remarkably short calcaneal process. However, this feature is combined with short thick digits in the cast in question, unlike the remarkable long lateral digits and shortened hallux of the living orangutan foot. It seems an unusual combination of traits in a terrestrial biped, which the orang-pendek is reported to be. Alternately, the cast might be that of a handprint, in which case the proximal position of the medial digit, the thumb, would be more appropriate.” (Davies, 2008)

As someone who has seen orang-pendek tracks in the field, I can say that Adam’s track seems to be that of a footprint rather than a handprint. I have worked with all the great apes and can say that the tracks of the orang-pendek are quite distinct from any known species of ape.

Dr. Hans Brunner is one of the world’s leading experts on mammal hair. He is a senior technical officer with the Department of Conservation in Victoria, and developed a system for identifying mammalian hair, which was widely used all over Australia and overseas because of the accuracy of his techniques. Brunner compared the hairs brought back by Davies et al to those of other primates and local animals and concluded that they originated from a previously undocumented species of primate. (Davies, 2008)

#### MY OWN INVESTIGATIONS

I have been to Sumatra in search of the orang-pendek five times now, in 2003, 2004, 2009, 2011 and 2013 respectively. Detailed accounts of these expeditions can be found in my book *Orang-Pendek: Sumatra’s Forgotten Ape*. Here I will focus on techniques used and results obtained.

#### CAMERA TRAPS

On many of our expeditions my colleagues and I have utilised camera traps of several kinds. Some are motion sensitive whilst others pick up the body heat of animals. They can take still photographs or moving sequences. Anything up to six cameras were deployed at any one time.

Camera traps have variously been placed in trees beside jungle trails, close to water, areas with rotting logs and or fallen fruit and areas where we have placed fruit as bait.

So far the camera traps have not caught an orang-pendek and indeed the only wildlife they have recorded is one small bird. Whilst testing these devices in England we found that in order to capture shots of wildlife the cameras had to remain in place for at least six weeks. In Devon we caught deer, badgers, foxes, otters and many smaller mammals and birds. As we are limited in the amount of time we can spend in the field due to lack of finances it seems that the camera traps are simply not in place for long enough periods.

#### FOOT AND HAND PRINTS

On each expedition we have found footprints and on two expeditions we have found handprints. Both foot and hand prints have been cast using plaster of Paris or the finer variation called dental cement.

Footprints have ranged from 6 to 8.5 inches long. Unlike known apes they show a long, wide heel very human-like in outline. There are four toes at the front of the foot and an offset, ape-like big toe. The heel would seem to be an adaptation to weight bearing and bipedal walking. The toes look less prehensile than known apes but more so than humans. The prints are quite distinct from all other apes and all other wildlife in the area.

The handprints are totally distinct from those of the Sumatran orang-utan. The thumb is noticeably larger and the fingers are shorter and somewhat sausage like in shape. The palm is not unlike a human palm. Altogether the shape of the hand is more like that of a small gorilla than an orang-utan. This makes sense as like the orang-pendek gorillas are primarily ground dwellers.

#### HAIR

Several times we have found and collected possible orang-pendek hair samples. The first ones collected in 2003 turned out to be from the Malayan tapir and the Asian golden cat (*Pardofelis temminckii*).

Those found in 2004 were human.

Hairs taken in 2009 were found to have degraded DNA in them according to a study by Copenhagen University. They found that the DNA was 'similar to that of the Sumatran orang-utan but with a number of differences'. Lars Thomas

said that he was 'forced to conclude that there is a large unknown species of primate in Sumatra.'

Samples from 2011 are currently with Professor Brian Sykes of Oxford University. Professor Sykes is one of the world's leading geneticists and has recently set up a research group specialising in trying to extract DNA from supposed cryptid remains.

The 2013 expedition yielded more hair samples than any other. However they turned out to be gibbon hair and fungal strands.

## EYEWITNESS ACCOUNTS

We have interviewed many eyewitnesses over the years. Their descriptions are remarkably alike. Debbie Martyr describes the creature thus...

"A relatively small, immensely strong, non-human primate. But it was very gracile, that was the odd thing. So if you looked at the animal you might say that it resembled a siamang or an agile gibbon on steroids! It doesn't look like an orang-utan. Their proportions are very different. It is built like a boxer, with immense upper body strength, something I hadn't seen before."

In the 1980s the father of Sahar Dimus, our then guide, and a friend had been cutting logs to build a house close to where the village of Polompek now stands. The area has long since been deforested. Both men saw a bipedal ape lifting up cut logs and throwing them about. It was covered in blackish brown hair and was about five feet tall. The hair on the creature's spine was darker. Its legs were short and its powerful arms were long. The face was broad and was black in colour with some pink markings. Both men fled.

The following year we talked to two witnesses who had seen the orang-pendek in a semi-cultivated area between the farmlands and the jungle near the village of Te Uik Air Putih. This area is known to the locals as 'the garden'.

The first witness, Seman, was a middle-aged man with a young child, and he had seen the creature in an area of land adjacent to a river at mid-day in February 2004. Back then the area was overgrown and the creature was only visible from the waist upward. He estimated it to be 80 centimeters tall but when we looked at the area ourselves it seemed that the animal must have been over a meter tall. The height he indicated with his hand looked like one meter as well. The animal had short black hair, a broad chest with pink skin visible on it, and a pointed head possibly indicating a sagittal crest. The ears were long. The

creature vanished and Seman said that he had the feeling it had fled to the river and swam across it, though he did not see this.

The river was a torrent when we were there, but in February it was much lower. The animal had been in view for three minutes. On visiting the area we worked out that the creature had been 22 meters away from the witness. Seman produced a sketch showing a powerfully-built, ape-like creature with broad shoulders, long arms, and a conical head. At no time did it raise up its arms, as gibbons are wont to do on the rare occasions they move about on the ground.

We returned to the same general area the next day to interview another witness. Ata was in his twenties and had seen his creature about three weeks after Seman. He heard a strange cry coming from the same area of the garden where Seman had his encounter. The noises began at 10am. They were a loud OOOOHA, OOOOHA sound. Upon investigation Ata found himself only 5 meters away from a strange beast. It was 1 meter tall and had short black hair. Its prominent chest made him think it was female. Its lower half was hidden by vegetation. He noticed that it had large owl like eyes, a flat nose, and a large mouth. It seemed aggressive and Ata said he felt the hairs on the back of his hands rise up in fear. Ata produced a drawing of a muscular, upright creature, with large round eyes. It lacked the pointed head of Seman's description. This may have been sexual dimorphism as seen in animals like gorillas.

An old man called Pak En helped to guide us in along with Sahar. Pak En told us that he had seen an orang-pendek in the jungle just above a remote valley in Kerinci Seblat three years before. He was walking along a jungle trail when he saw it approaching. It was one meter tall, upright, and powerfully built. It had black hair with red tips and a broad mouth. Its prominent breasts made Pak En think it was a female. He noticed that it grasped the vegetation as it moved. It let out an OOOOHA, OOOOHA sound. He watched it move down the trail for two minutes before it saw him. On seeing Pak En it quickly turned about and walked back the way it had come.

A Suku Anak Dalam chief called Nylam spoke to us about a sighting he had in the lowland jungles some miles from Bangko. Nylam had seen an orang-pendek in the area only three months before. He had been up a tree at the time. The animal was 1.25 meter tall and covered with red-tinted black hair. It had a broad mouth. It walked upright and held its arms like a man. It made a WEEEEHP, WEEEEHP noise and looked about itself as if it could smell its observer. Nylam watched it for half an hour.

The following year we interviewed more Suku Anak Dalam witnesses in the same general area. The first witness, who met outside the village, would not give his name. Three years previously, he had seen an orang-pendek close to the

wonderfully named village of Anoolie Pie some 23 kilometers away. It was around 4 feet tall and covered with black hair. The creature's face reminded the man of a macaque, with a flat nose and broad mouth. It stood and walked on two legs, never once dropping down on all fours. It was not a monkey, gibbon or sun bear. The creature seemed afraid of him and walked quickly away whilst looking from side to side. That had been the last sighting of an orang-pendek in the area. He told us that the Suku Anak Dalam thought that the orang-pendek was half-man/half-animal.

We also interviewed the supreme chief of the Suku Anak Dalam, a man named Tairib. Most of his people were away hunting, but he had made a special effort to visit us, and he had an amazing story to tell. Five years before, he had seen an orang-pendek as he was walking in the forest. It was 4 feet tall, with black hair that shaded into blonde and grey in places. Its face looked like a monkey's but it walked upright like a man. He took the creature by surprise and it became aggressive. It raised its arms above its head and charged at him. He fled and hid behind a tangle of rattan vines. He watched as it looked for him, turning its head from side to side. Finally, it moved away. This is one of the very few cases where the creature has displayed aggression.

Up at Gunung Tuju Sahar Diu, our guide and expedition member Dave Archer encountered the creature for themselves. On investigating alarm calls from gibbons in the jungle they moved forwards stealthily. Squatting in a tree around 100 feet from them was an orang-pendek! They could not see the face clearly as it was pressed against the tree trunk. Dave felt that it was peering at them from the side of its face. He saw the creature's eye rolling round in alarm and could see large teeth in the bottom jaw. The creature had broad shoulders and long powerful arms. The hands and feet were not in view. The orang-pendek had dark brown fur, almost black, and the consistency reminded Dave of that of a mountain gorilla. This makes sense as the jungles here are of a very similar type to those inhabited by mountain gorillas in Africa. The shape of the head recalled that of a gorilla as well but the high forehead was like that of an orang-utan. The head lacked the long mane of hair described by some witnesses. He was sure it was not a sun bear or a siamang gibbon.

From his vantage point, Dave could not get a good photograph as leaves and branches were in the way. As he moved to get a better view Sahar saw the creature climb down from the tree and walk away on two legs.

In 2011 our guide Sahar introduced us to an eyewitness in the village of Polompek in the shadow of the brooding slopes of Gunung Tujuh. Pak Entis had seen an orang-pendek in the garden area just five months before in April. He described it as around 3 feet tall but had massive shoulders and chest. He pointed to a piece of washing on a line to indicate the colour of its hair, a mid-

tan. It had an ape-like face and walked upright on two legs whilst swinging its arms. Upon noticing Pak Entis, it became alarmed and began to shake. It raised its hands above its head uttering a 'hoo, hoo' sound and moved quickly away. It was in view for around 60 seconds.

In 2013 we interviewed a collection of eyewitnesses at Polompek. This was the largest number ever gathered together.

Herman Dani had seen the creature Uhan Danda a year ago. He only got a good look at the head. The face had a flat nose and thin eyes. Its fur was grey. The creature stared at him and he ran away.

Amri had his encounter at Padutingi, about four hours from Polempek, seven months previously. The creature he saw was one meter tall with grey fur. He ran away in fear.

Rahman saw the orang-pendek five months past at Gunung Sanka about one hour away. The creature was large with black hair that faded to grey. It was moving quickly and he didn't get a good look at it. He fled.

Saba Rudin saw the creature as it crossed a jungle trail. The area was between Sungai Mina and Sungai Kuni about five hours away. The event had happened ten months before. The orang-pendek had a broad, barrel-like chest and black and grey hair. It walked on two legs like a man.

Aprisal was in the Sungai Kuni area nine months ago hunting wild pig. When he paused he saw a creature with black and grey fur and a large mouth. Afraid, he ran away. The area was about four hours distant.

Mah Darpin saw the orang-pendek after rainfall at Gunung Kacho, 9 hours distant. He saw the creature from the back, noting that it had long fur and a grey-black colour, was around a meter tall and walked on two legs. He became afraid and walked back the way he had come.

Saimi Alwi saw the creature one year before at Sungai Minya which is about four hours from Polempek. Whilst tracking he heard a noise and saw a creature squatting to eat kitan fruit. The animal was barrel chested and muscular. It had black and grey fur and stood a meter tall.

Pak Tumcuggung told us that about forty years before he had been walking through a graveyard about a mile from the village of Batanlumbhi when he saw a man-like, grey-coloured figure rise up from behind one of the grave markers. The creature stood around three feet tall. It had long grey hair, broad shoulders and a pot belly. The face looked very human with broad cheek bones. The

creature looked more like an orang-utan than a siamang gibbon. The two stood and stared at each other until Pak Tumcuggung turned and ran. He looked back and saw it still standing there watching him.

His brother saw an orang-pendek the same year. It was very like the one Pak Tumcuggung described except it had black hair rather than grey.

From these accounts we can see that the average reported height is about a meter, quite comparable with the bonobo or pigmy chimpanzee (*Pan pansicus*) although the creature seems bulkier and would probably have a body mass akin to a common chimpanzee (*Pan troglodytes*). Larger individuals are not uncommonly reported. The broadness and muscularity are often noted by witnesses as are the long arms and short legs. The animal, like the orang-utan, is seemingly solitary. It seems to spend most of the time on the ground.

#### CONCLUSIONS: WHAT IS THE ORANG PENDEK?

##### Mistakes Involving Known Animals

Some have suggested that orang-pendek can be explained by confusion with known species found in the area.

##### The Sumatran orang-utan (*Pongo abelii*)

Once considered to be a sub-species of the Bornean orang-utan (*Pongo pygmaeus*), it is now known that the Sumatran orang-utan is a distinct species that diverged 400,000 years ago, when both Borneo and Sumatra were part of the larger land mass of Sunda. (Singh, 2011)

The Sumatran orang-utan can be 4 feet 6 inches in height and weigh 200 pounds. It is primarily arboreal unlike the terrestrial orang-pendek. However, when it does come down to the forest floor, the male of the species walks upright on two legs. The orang-utan's hair is generally a rusty brown or ginger in colour, quite unlike that of the orang-pendek.

The male Sumatran orang walks upright on the rare occasions that it descends to the forest floor. Dr Darren Naish notes in his informative blog Tetrapod Zoology that orangs are more energy efficient (in terms of wattage/pounds) than humans when walking bipedally. (Naish, 2008)

At first glance male Sumatran orang-utans walking bipedally on the ground might seem like an adequate explanation for orang-pendek sightings. But on closer examination the hypothesis collapses like a house of cards in a breeze.

I have worked with both species of orang-utan in captivity. In zoos orangs spend much more time on the ground. I had ample time to study the gait of the Sumatran orang. Despite being energy efficient, the walk of a Sumatran orang is totally unlike that of a human. The animal holds its long arms up in a clumsy looking fashion. It has a rolling movement, rocking side to side as it goes. In short it looks out of its element. Witnesses describe the walk of the orang-pendek as smooth and natural looking. It does not habitually move around with its arms in the air or rocking side to side. Besides, in the wild the Sumatran orang-utan very rarely leaves the safety of the trees.

Male orang-utans, in adulthood, develop spectacular flanges on their cheekbones that stick out like leathery plates from the side of their face. This is a sign of sexual maturity and dominance over younger males. No orang-pendeks have been described as having these very noticeable features.

Finally, the Sumatran orang-utan is confined to the north of the island. There is very little evidence that it was found in West Sumatra in recent times. Debbie Martyr knows of only one instance of an orang-utan in the area and that was a captive one brought to Padang. (Martyr, pers comm.)

### The siamang (*Symphalangus syndactylus*)

The siamang is the largest of all the gibbons and is found in Malaya, Thailand and Sumatra. It grows to 1 meter in height and tips the scales at over 30 pounds. It has black fur and a very humanlike face.

However the siamang is even more arboreal than the orang-utan. Getting most of its food and drinking water in the trees it comes down to the ground only in times of extreme drought.

Once again I have kept these animals in captivity, where they move along the ground far more than they would in the wild. When on the ground, siamangs move either in a series of strange little jumps or in a mincing trot. In both cases the arms, which are proportionally even longer than an orang-utan's, are held aloft.

The siamang has a gular sac, an inflatable pouch of skin around the throat, which the ape inflates to amplify its calls. No such feature has been reported in the orang-pendek. The siamang, despite being the largest gibbon, is far too small and slender to be confused with the orang-pendek. Not only does it live in the forest canopy most of the time, it also lives in small groups whereas the orang-pendek is solitary. Siamangs seem frightened or irritated by the presence of an orang-pendek, and will vocalise noisily if one is in the same area as them.

There are two other species of gibbon that are known to live in Sumatra. However, they are smaller than the siamang, and the same arguments against them being the true identity of the orang-pendek apply.

### The sun bear (*Helarctos malayanus*)

This is the smallest of all the bear species at 60 inches long, 28 inches high and 88 pounds in weight. Sun bears have short, sleek, black hair with an almost mole-like look to it. The pale crescent marking on the chest gives the animal its name. It has been postulated that sun bears are responsible for orang-pendek sightings when standing up on their hind legs, and that their tracks have been mistaken for orang-pendek tracks. This same, rather lame, argument has been used with larger bear species in a lazy attempt to explain away larger mystery primates such as the yeti and the sasquatch. Bears generally only stand on two legs as a threat posture. They may shuffle along for a few paces on two feet, but they do not habitually walk around like that. Bears lack opposable thumbs and would be quite incapable of grasping sticks or stones and throwing them in the manner the orang-pendek is said to.

The prints of a sun bear are quite distinct; they have visible marks of the long claws, the peak of the print is in the centre and there is no offset big toe. Orang-pendek prints lack the bear's claws. They have a narrow, human-like heel and four toes at the front. The big toe is offset in the manner of other apes, but seems less prehensile, a condition to be expected in an upright walking ape that spends most of its time on the ground.

### An unknown hominin

Some theorise that the orang-pendek may be a small hominin. As far back as the 1940s, William Charles Osman Hill, primatologist, zoologist and anatomist, postulated that orang-pendek might have a possible connection to the fossils of *Homo erectus*. Along with the Nittawo (a race of small, hairy, man-like creature once said to have inhabited Sri Lanka), he believed that they might be a dwarf island form of *Homo erectus*. Island dwarfism occurs when a species of animal colonises an island smaller than the landmass whence it came. With fewer resources the species' descendents evolve into a smaller species. (Osman and Hill, 1945)

The notion of a tiny island hominin was proven in a spectacular manner in 2004. Australian Palaeontologist Mike Morwood was excavating the Liang Bua cave in the west of Flores when he made a remarkable discovery, an adult skull of a human-like creature, but of tiny proportions. Further excavations uncovered more of the skeleton and a number of other individuals. Most

incredibly of all, the remains were not fossilised. Their constitution was likened to wet tissue paper. The bones had to be allowed to dry before they could be excavated. The most recent of them dated to around 13,000 to 12,000 years ago. Beside the creatures were tools, weapons and evidence of fire use. (Morwood and Van Oostereez, 2007)

The creatures were named *Homo floresiensis* and in life would have stood only 1 meter tall. Despite having a smaller cranial capacity than a chimpanzee, it seems that *Homo floresiensis* was highly intelligent. Not only did it use fire and stone tools, it seems to have hunted pygmy stegodont elephants and giant rodents with which it shared its island home. (Morwood and Van Oostereez, 2007)

Recent work seems to suggest that *H. floresiensis* is even more incredible than we first thought. Examination of the creature's primitive wrist bones has led to a whole new chapter in its study. It now seems that, rather than being a descendent of *Homo erectus* as originally postulated, it is outside of the genus *Homo* and more closely related to the African australopithecines! The last known australopithecine, *Australopithecus africanus* died out 1.9 million years ago! (Tocheri et al, 2007)

The skull morphology has raised similar questions. Debbie Argue, a paleoanthropologist at Australian National University in Canberra recently led a study into the structure of the Flores hominan skulls. She found a number of differences in the shape of the jawbones and brow ridges that argued that the Flores specimens were not simply a dwarfed form of *erectus*. She is quoted on the Nature blog of September 27, 2011:

"It's hard to envisage *erectus* being the ancestor of *Homo floresiensis* because there are so many differences," she said. (Argue, 2011)

Argue and her team favour *Australopithecus sediba* as an ancestor of the Flores hominans. *A. sediba* lived in Africa some 1.9 million years ago. (Argue, 2011)

It seems that the Liang Bua population was killed during the eruption of a volcano around 12,000 years ago. But anthropologist Gregory Forth and others have suggested that *H. floresiensis* survived in other parts of Flores until recently and may have been the genesis of the Ebu gogo legends. The Ebu gogo were a race of hairy goblins from the folklore of the Nage people of Flores. They were said to steal crops and kill livestock with bamboo spears. They spoke in a strange mumbling language and lived in caves. After making a pain of themselves for years the Nage hatched a plan to be rid of the Ebu gogo. Getting them drunk on palm wine they waited for them to return to their caves then blocked up the entrances with palm fibre, set light to it and smoked them to

death. Some were said to have escaped into the forest. Indeed the Ebu gogo is said to survive in the deep jungles of Flores even today. The legend of the Ebu gogo's destruction by fire may be a distorted retelling of real events. Around 1830 a volcano known as Ebu Lobo erupted, spewing lava for a distance of 4 kilometers. The date matches fairly well with the date that the Ebu gogo were supposedly destroyed. Could the localised eruption have killed off a late surviving population of *H. floresiensis* or have forced them away from the area, leading to the folktale? (Forth, 2008)

It seems quite possible that *H. floresiensis* and the Ebu gogo are one and the same. It is also perfectly possible that *H. floresiensis* is still alive and well on Flores and on other Indonesian islands.

However *H. floresiensis* and orang-pendek do not match up well. The latter is larger, more primitive, and more solidly built. All of the tracks I have seen of the orang-pendek show an offset big toe, a feature indicative of an ape. All the eyewitness descriptions seem to be recalling an upright ape and not a hominin. Orang-pendek may utilise stones and sticks as primitive weapons or tools but it does not seem to fashion tools and it has no use of fire.

### An unknown ape

I have already commented on the ape-like morphology of the footprints and handprints I have found. In all the interviews I have done with eyewitnesses, what they describe sounds like an ape rather than a hominin. Long arms, massive shoulders, little neck, much body hair, short legs; these all add up to an ape.

We may ask why, in a jungle full of trees, orang-pendek is upright-walking and ground dwelling. Debby Martyr postulated that the creature was a recent development; having evolved in the wake of the eruption of the Toba super volcano around 75,000 years ago, that would have stripped the island of its trees. However, this does not explain how the Sumatran orang-utan survived. I feel that the orang-pendek has its origins further back in time.

We have already touched on bipedalism in the male Sumatran orang-utan when they come to the forest floor. But up in the trees they will also walk erect along branches. Traditionally, bipedalism is thought to have developed on the plains of East Africa when hominids first left the jungles to exploit new food sources around 5 million years ago. Standing erect, so the theory says, gave them a better view of potential predators. The vervet monkey (*Chlorocebus pygerythrus*), demonstrates this kind of behaviour, rearing up to look about it for danger. However, now it seems that bipedalism may have begun to evolve in the jungles.

During a year-long study of the Sumatran orang-utans of Gunung Leuser National Park, paleoanthropologist Susannah Thorpe of the University of Birmingham spotted apes in the trees a total of 2,811 times, including numerous instances where they walked erect. In 75% of these cases they maintained balance with their hands, and over 90% of the time their legs were stiff, unlike the bent-knee, bent-hip shuffle of chimps and gorillas, which also stand upright in trees sometimes. The apes stood erect mainly to reach for fruit whilst on fairly narrow branches. Thorp postulated that the straight legged posture helped them balance in the same way as a gymnast on a trampoline. (Hooper, 2007)

Could bipedalism have evolved in the jungles of Asia as well as in Africa?

Sunda was a large landmass that once incorporated Sumatra, Borneo, Java, the surrounding islands and the Malayan peninsula and connected them all to mainland Asia. As melting glaciers flooded the oceans 19,000 years ago, sea levels rose and the huge landmass became cut into the islands we know today. The two known orang-utans had already speciated some 400,000 years ago. We do not know why this occurred, but the more gracile Sumatran and the robust Bornean separated. The robust form populated the eastern island of Borneo and the gracile form the western island of Sumatra. (Singh, 2011)

A larger form, *Pongo hooijeri*, the size of a modern gorilla, and, presumably, a ground dweller, existed further north in what is now mainland Asia. (Junaidi and Cede, 2008)

Closely related, and known only from its teeth and jaws, was the huge pongid *Gigantopithecus blacki*. This latter species has left fossils in India, Vietnam and China, some dating as recently as 300,000 years ago. Due to the wide shape of the jawbone, it has been postulated that *Gigantopithecus* was a biped, with the neck placed directly under the skull. If this is correct and if the rest of the animal was built on the same scale, then *Gigantopithecus* would have stood 10 feet tall. Some believe that the creature is not extinct even today and it survives in parts of India, Tibet, China, the Himalayas and elsewhere, and is known as the larger type of yeti. (Heuvelmans, 1958)

All of the above, including modern orang-utans, seem to have been descended from a genus of ancient apes known as *Sivapithecus*. The three known species are *Sivapithecus indicus*, *Sivapithecus sivalensis*, and *Sivapithecus parvada*. They flourished 12.5 to 8.5 million years ago and in life had bodies shaped like chimpanzees but heads more like that of modern orang-utans. Another genus, *Lufengpithecus*, arose around 10 million years ago with three known species: *Lufengpithecus lufengensis*, *Lufengpithecus hudienensis* and *Lufengpithecus keiyuanensis*. These may have descended from an earlier form of *Sivapithecus*.

Morphologically they seem to fall between Sivapithecus and modern orang-utans. It is one of these latter species from which modern orang-utans seem to have evolved. (Andrews and Cronin, 1982)

I think that when the speciation of the modern orangs began, they split into not two, but three species. The robust *P. pygmaeus*, the more gracile and more upright *P. abelii*, and a third, smaller terrestrial species that we today know as orang-pendek. This of course is just a theory but it is, in my opinion, the best explanation for Sumatra's forgotten ape.

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# PSI? MORE WORK NECESSARY

*Brian Clegg*

## ABSTRACT

After reviewing the history of investigation of psi phenomena, there are significant issues to be faced. Many investigations have been plagued by two problems. One is poor control to avoid deception, and the other is an over-dependence on statistical measures, rather than detecting actual phenomena. This statistical approach has been dogged by technical errors. While the evidence to date suggests that it is worth continuing investigations, the field would benefit from a radical change of approach.

## ARTICLE

After taking a detailed tour of the history of psi research in putting together a recent book, it was impossible to say with confidence whether or not there were real phenomena being observed, but this is not as much of a problem as it seems. Science is not about proven, definitive facts. Many are shocked by this, but science can never provide us with the absolute truth. Even apparently solid scientific "facts" like the big bang are simply our best-supported interpretation of the current data. It is always possible for new observations and experiments to demonstrate that a cherished aspect of science is wrong. It has happened many times in the past, and it will happen again with some of the theories we now hold.

This is not a bad thing. It is how our scientific understanding evolves. Nor does it suggest, as some might say, that it means all possible theories should be given equal weight because "science can't prove anything." Some theories have a much higher probability of being correct than others. The widely accepted scientific picture of the universe is based on our current best guesses. Until other data come along that makes us change our mind, to go with anything other than the best interpretation of those data is simply silly. Why would you choose to go for a less likely option?

It seems probable from all the work that has been done that some aspects of parapsychology don't hold up to scientific testing, although I think others – telepathy particularly – still show distinct possibilities for having a basis in reality. It might seem strange to dismiss a lot of the evidence for psi phenomena. So many people claim to have experienced strange things happening. Surely there must be something there? Speak to any enthusiast for

psychic abilities and they will ask how science can dismiss so many experiences of so many people in pretty well every culture around the globe throughout all of history. After all, they will argue, there's no smoke without fire.

Unfortunately, the real world is very different from the aphorism. (And in reality there is often smoke without fire.) Those who rely on the abundant anecdotal evidence for psi phenomena need to face up to three potential problems: failings of perception, the nature of memory and the ability of people to cheat. This is why scientists are so wary of anecdotes about psi occurrences – such stories tell us much more about people and their beliefs than they do about actual things that have happened. As Robert L. Park says in his book *Voodoo Science* (Park, 2001), “data is not the plural of anecdote.”

If we are looking for something that runs counter to the known laws of nature – which is by definition the case with the paranormal – we have to weigh up the chance that there is something totally outside of our scientific understanding, which is entirely possible but doesn't happen very frequently, against the chance that someone has made a mistake or has failed to tell the truth – which happens all the time.

A particularly interesting study in memory after the event (Wiseman and Morris, 1995) specifically focused on how different people responded to apparent psi phenomena. In this experiment, convincing trickery was used to reproduce popular effects such as bending keys. A group of observers were tested on their recall of what they had seen. Some were sceptical about psi, others were convinced that psychic phenomena were real.

There were significant differences in how the two types of individual reported what they had witnessed. The sceptics were less likely to rate what they had seen as being paranormal – hardly surprising under the circumstances. But what was particularly interesting was that the members of the believers group were significantly more likely to make errors or omissions in their report of what they had seen. This was particularly the case with information that was crucial to making cheating possible. They would not notice, for example, that a key went briefly out of sight before it was bent. There is no evidence that this was conscious concealment of the facts – instead, their brains edited out what they didn't want to see.

In a second, even more significant experiment (Jones and Russell, 1980), participants witnessed two tests of ESP based on card guessing, in a format similar to the Rhine experiments. In the first test, unknown to the participants, the cards were marked to enable those doing the guessing to cheat. They got a hit rate of three out of five, rather than the expected one out of five that would

be the chance result from Zener cards. In the second test there was no cheating and the result was as predicted by chance.

The participants who were watching the event were again a mix of sceptics and believers. Those who doubted that psi was possible reported what had happened accurately, even though they were uncomfortable with what they had seen in the first run. Many of those who were enthusiasts for the paranormal reported that both tests were successful. They remembered what they wanted to remember and wiped the rest. This kind of recall effect should have no influence on properly recorded scientific tests, but certainly makes much of the anecdotal evidence open to question. For that matter, there have been many tests over the years, including the early section of Rhine's research, where results weren't recorded until some time after the test and such a memory bias could still have had an influence.

The outcome of both the experiments comparing sceptics and believers was that the believers remembered what they had seen in a way that reinforced their beliefs. They saw what they wanted to see. In different circumstances the same effect can result in sceptics missing an actual occurrence because they don't believe it possible, but in a typical psi experiment the biggest danger is that those who want the experiment to be a success (which will usually be the case with the experimenters) will be more likely to miss crucial aspects of what happened.

Indubitably the biggest problem in coming up with a definitive statement is the poor quality of scientific investigation into psi. This derives from two major issues, one or both have been present in the majority of investigations into ESP. The first problem is poor control. From the earliest days of psychic research in the nineteenth century to well into the 1970s poor control was the norm. You only have to look back at the Uri Geller experiments to see that this wasn't just an issue in Victorian times. Much – probably the vast bulk of the data produced was worthless because of this.

The second issue, which started with Rhine's experiments and has got more and more intense to the present day is focusing far too much on small variations from the predictions expected by random chance and relying far too heavily on statistical interpretation of the data. At the extreme we see experiments like PEAR's where all that was being searched for was a small fluctuation in the reading of an electronic device. This trend totally misses the point of psi research because the lab work has become detached from what it is supposed to be studying. It's as if you tried to study the tigers in a particular location by observing the way the grass has been bent by the rain, looking for tiger-like anomalies.

What the researchers seem to have totally forgotten is that they are attempting to verify the validity of hundreds of years of anecdotal evidence. Real world ESP is not about small statistical variations, it is about clear, specific communication and action. So, if you want to test for telekinesis, don't try to produce a small deviation from expected probability in the output of an electronic device. That's not what telekinesis is about. Set up an experiment where someone moves a physical object using only their mind. This cannot be about influencing the throw of a dice as many have attempted. That always was a totally crazy concept, partly because it reintroduces the statistical element, and partly because it is pretty well impossible to imagine, even if you could mentally influence the roll of a die, how you could get a particular face to end up on top. We aren't that good at doing physics in our heads.

Instead a telekinesis experiment should involve an object, carefully isolated from conventional physical forces like air movement and vibration, which the subject has to move with his or her mind. Fifty years ago this would be very difficult to do – but we now have a huge amount of expertise in isolating test equipment from external forces. Rigs like the LIGO experiment for detecting gravitational waves have to be excruciatingly good at eliminating other inputs. All you would need is a similar setup (though much smaller – the LIGO experiment is several kilometers long) in which the subject had to move an extremely light object, displace an extremely sensitive balance or put pressure on a movement detector without any means of physical contact. That would be a telekinesis experiment – but PEAR wasted their time on electronic fluctuations.

Similarly, for clairvoyance or remote viewing, forget vague descriptions of locations, which have to be scored by judges. (Judges? This isn't Psychics Got Talent, it's supposed to be science.) Dispose of guessing sequences of cards and matching success against statistical expectation. Display a randomly selected sentence from a randomly selected page of a randomly selected book on a concealed computer screen. The subject who has no means to see the screen writes down what the sentence is. If they get it right it's a hit. If they don't it's not. Simple binary judgement. They are either right or they aren't.

Of course there are potential flaws here – some words, for instance, are more common than others in any language. But in practice the sample size to select from is so large (imagine selecting from every sentence of every book on Google Books, for instance) that it won't be an issue. And anyway, if this really were a concern it would be easy enough to get round it by using books in a language the subject doesn't speak, so they would not have any expectations of specific words. And remember it's not good enough to pick up that a sentence has "the" or "a" in it. If we scored for partial sentences this would be an issue, but this is a binary yes or no. You either get the whole sentence right or you fail.

A similar approach could be used with telepathy, although you would have to resort to a fair amount of subterfuge to get around Rhine's concern that what we think is telepathy is actually clairvoyance. One way to do this would be to establish the clairvoyance level initially, then look for any extra successes on top of this. What's more important than making the distinction Rhine was so concerned about would be to try to duplicate the apparent conditions that encourage telepathy – closeness between participants and urgency of communication.

It might seem these elements would be difficult to incorporate, but it would be possible to do this by modifying classic psychology studies. A good example would be the experiments carried out by Stanley Milgram at Yale in the early 1960s. Milgram's subjects were asked to give electric shocks to another person who was behind a glass screen. Supposedly this was to encourage the other person to learn. Under pressure from the experimenter, the subjects applied larger and larger electric shocks until they were reaching lethal levels. In practice there was no electric shock – the person behind the glass screen was part of the experiment, acting out the effects of being electrocuted.

Milgram's intent, in an experiment run at a time when Nazi war trials were still under way, was to see just how far individuals would break accepted moral boundaries under orders. However it would be easy to envisage an alternative version that tested for telepathy under urgent pressure. In this, the person behind the glass would be required to type a word on a computer with no prompting as to what the word should be. If they got the word right, they would be rewarded. If they got the word wrong they would receive an increasingly powerful electrical shock. The actual test subject, sitting the other side of the glass, would know the randomly selected word in advance, and would attempt to provide that word to the victim by telepathy.

As in the Milgram test, no actual shocks would be needed to make the experiment work. But the subject, unaware of this, would be under extreme pressure to get the word across mentally as he or she saw the other individual suffer more and more. Variants could bring in other factors to see if they influenced telepathic ability. Though the distinction could not be proven, this test would be inclined to test telepathy rather than remote viewing, because only the sender is experiencing pressure.

Tests like this are entirely possible, but as yet, as far as I am aware, they have not been carried out in a formal way. It sometimes seems as if researchers are more interested in carrying out work that ensures that they are able to continue with their careers than with producing definitive results. The design of some experiments suggest the scientists are worried that a clear test could put an end

to their work, so instead they would rather make vast numbers of indecisive experiments so that they can keep turning out the papers.

There are potentially valid, if not scientifically detailed, explanations for the mechanisms of some psi phenomena. There is some evidence that has not been proved worthless. So there remains hope for those who want there to be something there. For me, coming at this with an open mind while frankly wishing that ESP did exist, I have to conclude that the existing experiments have demonstrated nothing more than coincidence, artefacts of the experimental design, misunderstanding and fraud.

It's time to switch off the life support for parapsychology in its present form and get the researchers to bite the bullet and go for the real thing.

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# SERIOUSLY BRILLIANT: ASSAP SERIOUSLY STRANGE CONFERENCE REVIEW 2013

*Wendy Isaacs*

My information pack had been thumbed through dozen of times and I had carefully earmarked my own preferential list of 'must see' guest speakers. I had been looking forward to this event since the date for ASSAP's Seriously Strange Conference was announced and finally it was here.

I and fellow BSPRI member Hayley Wakeman decided to make the most of the weekend by attending the social gathering at The Huntsman on Friday night and staying at Bath University. After offloading our luggage into our cheap but cheerful room on campus, we met up with LAPIS member Alan Pinder who we met previously on the training weekend back in November last year. As it was a lovely evening, the three of us decided to walk to The Huntsman and after the 2 or so mile hike, we arrived at the historic pub and had certainly earned a cold beverage of the alcoholic variety.

Now for any of you who have attended events organised by ASSAP before you will know that everyone is so friendly and you are made to feel part of it from the off. It was a great opportunity to catch up with people we already knew as well as making new friends. Both Dave and Nicky both took the time to visit everyone's table for a chat during the evening and the room was buzzing with conversation which was no doubt in anticipation of the exciting weekend ahead.



*Seriously Strange social at The Huntsman. Photo by Paul James Pearson.*

After a good night's sleep and a hearty breakfast, it was time to head over to the conference centre where we were joined by BSPRI members Mark Davey and Andrea Kaye. The lobby was bustling with delegates and ASSAP volunteers, one of which was fellow AAI and BSPRI member Stuart Andrews. It was great to

meet up with a lot of people we had met at previous ASSAP events, many of which had travelled from far and wide and had taken many hours to get there. This was certainly testament to how popular these conferences had become. Indeed, the interest in the paranormal field in general seemed to be gaining in popularity. With such a diverse programme ahead, I hoped that I would be able to absorb as much information as I could without overloading.

Armed with coffee, notepad and a thirst for knowledge, we filed into the lecture theatre where ASSAP's President Rev Lionel Fanthorpe opened the proceedings. First up was Christian Jensen Romer or C.J. to those of us who know him. I had been fortunate to have heard many of his talks before so I knew it was going to be interesting and he certainly didn't disappoint us. The previous night, alcohol fuelled in my campus room on my laptop, I had posted on his Facebook that I was looking forward to hearing his talk and asked him to wake me up when he finished. Fortunately for me, C.J. has a very good sense of humour. 'Let Me Convince You Your Home is Haunted' was not only thought provoking but provided us with a thoroughly entertaining insight into his life with bouts of comedy moments thrown in for good measure and was a brilliant start to the weekend.



*Delegates (L-R) Mark Davey, Andrea Kaye, Hayley Anne Wakeman and Wendy Isaacs*

After an interesting panel discussion entitled 'Ghost Fiction and Ghost Fact: Storytelling and Paranormal Research' with Stephen Volk, Tim Lebbon, Simon Kurt Unsworth, John Llewellyn Bowen and Reece Shearsmith it was time to break for lunch.

The afternoon kicked off with a panel discussion on poltergeists and hauntings and the panel included Sarah Spellman, Guy Lyon Playfair, C.J., Trystan Swale

and Nicky Sewell. Another interesting debate on whether or not poltergeists and hauntings are indeed the same. I personally think it depends how you define both so depends on how differently you view them, but the panel certainly gave food for thought on the subject and it was something I hadn't really given much thought to before.

Hayley, Alan and I decided to skip Guy Lyon Playfair's talk on 'The Twin Thing' but instead opted to take part in the Paranormal Olympics. This was a series of experiments for fun and education and included psychological tests such as ESP tests, remote viewing and psychokinesis. Hayley had taken part last time but with me being a Seriously Strange virgin, it was my first time and I must say, it certainly was a lot of fun.

Back in the lecture theatre, it was time for another interesting debate entitled 'Has Parapsychology Achieved Anything?' which was chaired by C.J. and included panellists Chris Roe, Chris French, Cal Cooper, Steve Parsons and Brian Clegg. I would say that I would have to agree with what Brian Clegg said in his own blog, that 'ologies' definitely have their place in the world of science and I certainly don't see them as woo but then I'm not a scientist....I just want to learn as much as I can so I can take that knowledge and use it to improve my methodology as an investigator and as English author, courtier and philosopher Sir Francis Bacon once said, "Knowledge is power".

On that note, after a few more talks we were given an update on the accredited qualification for paranormal investigators. I had already signed up to be on the National Register of Professional Investigators but this was something I wanted to find out more about in addition. More details would be given in the morning and for now it was time to let our hair down and party!

After a very quick change back at our accommodation, grabbing a bottle of wine to drink on the way (well, we thought it would be the student thing to do!), we took our seats in the Claverton Suite for a night of food, laughter and music with just a smidge of alcohol thrown in for good measure.

As we all tucked in to our very enjoyable three course meals it was a chance to chat away with fellow delegates and reflect on what we thought of the weekend so far. During this time, Lembit Opik appeared at our table and asked what we would like him to talk about during his after dinner speech. After a considerable intake of wine by this point in the evening, I did consider saying "the Cheeky Girls" but I thought better of it. Instead, Lembit entertained us with his rather amusing UFO stories. We then laughed at the brilliantly funny Paul Gannon followed by music from the very talented singer Rozii Chaos. The disco was a brilliant way to burn off all those calories from the meal by dancing the night away. I don't think I left the dance floor once and I am in no doubt that there are

some very embarrassing photos of me out there doing my drunken jiggling to tunes such as Moves like Jagger - in Zumba style (oh dear), Monster Mash, Antmusic, Ghost Town and Ghostbusters to name but a few.

The evening drew to a close all too quickly and it was time to stumble back to our accommodation which is no mean feat when you are not only trying to walk straight yourself but trying to keep a female wearing killer heels in an upright position...not mentioning anyone in particular....you know who you are!

The next morning after a sobering hearty breakfast, feeling more like delicate than delegate, it was time to take our seats in the lecture theatre once again. C.J. started the day off once again with more details regarding the accredited qualification for investigators of anomalous phenomena. This would be a foundation course recognised by an awarding body and would require 90 hours of study at home via the internet. The course will be in three units: Ethics and Risk Assessment, The Scientific Method and Case Management and there was no time limit to completing the course so it could easily fit in with people's busy lives. The first intake is limited to 30 people and the early bird cost is only £40 which I thought was an absolute bargain. Of course, I signed up for it straight away.

Then it was on to information on the ASSAP Training Weekend and Advanced Training weekend which will be held in Birmingham this year. I can thoroughly recommend the training weekends to anyone thinking of taking part. Not only do you learn a lot but they are immense fun too. After you have completed both weekends, if you submit a report that meets with the ASSAP standard of report writing, you will be awarded with AAI status and become an ASSAP Approved Investigator. If you are already part of a paranormal research group, it would be a good idea to take a few members along with you or better still, if you know enough members who are interested you could contact ASSAP and ask them to come to you instead.

The National Register of Professional Investigators is just £5 on top of your yearly ASSAP membership and is available to experienced investigators who sign up to the ASSAP Code of Ethics and pass an online examination and other checks. Being a member of the NRPI shows that you adhere to a minimum ethical standard in the way you investigate anomalous phenomena. I have signed up and about to undertake the examination myself.

The next talk, 'Close Encounters of the Shamanic Kind', was given by Tony Eccles. Now I know Tony was very interesting but by this time my hangover was in full swing and I had started to feel my eyelids slowly start to close which certainly was nothing to do with Tony's talk. The break allowed me to wake myself by splashing my face with water and grabbing a strong coffee.

I think for me, Professor Chris French's talk 'Weird Science: An Introduction to Anomalistic Psychology' was undoubtedly one of the highlights of the weekend. Anomalistic psychology may be defined as the study of extraordinary phenomena of behaviour and experience, including (but not restricted to) those which are often labelled "paranormal". It is directed towards understanding bizarre experiences that many people have without assuming *a priori* that there is anything paranormal involved. It entails attempting to explain paranormal and related beliefs and ostensibly paranormal experiences in terms of known psychological and physical factors. Anomalistic psychology has always been something that I have a keen interest in anyway and I had previously read a lot by the professor but this was the first time I had actually sat in on a lecture of his. Not only does he get his point across in a down-to-earth, understandable way but his use of visual experiments and interaction with the audience keeps you interested throughout.

One experiment in particular was an outstanding example of the power of suggestion combined with what is termed as "top down" processing; when the brain is primed to seek a message in random gibberish it will do so, given sufficient prompting. This was something that another speaker in particular may have learnt a lot from.

Chris played us the original track excerpt of Led Zeppelin's Stairway to Heaven and then played the same excerpt backwards. The only thing we were told at this point was that it was supposed to be a message for Satan. When Chris asked us what we could hear some delegates could pick out the odd word like Satan but nothing more.

Then for the truly brilliant bit, Chris then put the words below up on the screen and then played the backwards excerpt again. "Oh here's to my sweet Satan. The one whose little path would make me sad, whose power is Satan. He'll give those with him 666. There was a little tool shed where he made us suffer, sad Satan."

It was clear from the audience reaction that they all heard what was written on the screen, as did I, and it certainly deserved the huge round of applause it got. It has got to be one of the most amazing psychological experiments I have ever taken part in and a fantastic example of the power of suggestion. You see examples of this on the internet all the time. Paranormal investigators post clips of EVP and flash the words up on the screen what they think is being said. Automatically, your brain picks out words from the random noise. His talk certainly fuelled my interest in psychology and perhaps I would actually get around to taking some sort of course in it. I have already ordered his book which

I am very much looking forward to reading, *Anomalistic Psychology*, which is co-written by Anna Stone.

Following Chris's talk was parapsychologist Professor Chris Roe who gave us a very interesting talk on extra-sensory perception and dreams. Lunch was followed by a panel discussion, 'Are UFOs Different from Other Anomalous Phenomena?', chaired by Robert Moore and including Sacha Claire Christie, Lembit Opik, Tony Eccles and Chris French. This subject was something that was of personal interest to me as my own brother Paul used to regale me with stories of his visits to a place called 'Heaven's Gate' which overlooked the grounds of the Longleat Estate in Wiltshire. During the 1960s, Paul and his friends not only supposedly saw many saucer shaped flying objects and what he described as dancing lights in the skies above, but weird encounters on the ground too. He once told me about a 'ghost car' that drove out in front of his car when he neared the site, causing him to swerve. He had clearly observed that the vehicle hadn't made a sound and had disappeared amongst the trees. When he and his friends had got out of the car to take a look, they found no gap in the trees where it was supposed to have gone. Paul was convinced that UFO sightings and ghost sightings were connected in some way so he and his friends continued to investigate the site until one day he returned from there clearly shaken, refused to tell anyone what he had experienced and never returned to Heaven's Gate again.

Next up was John Sabol's rather loud talk 'Roll Call of the Dead: 'Auditory Manifestations of an American Civil War Present on a Haunted Battlefield'. I know it is a given that some time over a weekend like this you are likely to come across something that doesn't sit well with you. Up until this point I had taken very little notes during lectures, instead I opted to absorb the information like a sponge. Here I was now frantically taking notes on the assumption-led pseudoscientific drivel we were subjected to. It was everything that goes against ethical investigation and he constantly contradicted himself though out his talk. As taught by ASSAP, investigation should be based on evidence of eyewitness accounts through detailed interviewing techniques and this bloke never once referred to any eyewitness accounts (as I guess there were none?). It just seemed like he would just turn up at a former battlefield site, assumed it was haunted, assumed the audio he caught was soldiers talking, not taking any extraneous factors into account, assumed the words were said by soldiers, told us what was said so we would automatically hear what he wanted us to which is the power of suggestion combined with what is termed as "top down" processing. Then it was time for the photos which were obviously a clear case of pareidolia which is a psychological phenomenon involving a vague and random stimulus and not as he assumed the ghost of a dead soldier in one and a dead jogger in another!

Throughout his talk he repeated the fact he was an investigator, not a ghost hunter and carried on to insult ghost hunters everywhere by tarring them all with the same proverbial brush. In my personal opinion, it does not matter a jot whether you call yourself a paranormal investigator, paranormal researcher or a ghost hunter, if you follow an evidence-led methodology and practice good ethics, that is all that matters.....not the title you give yourself.

In a weird sort of way, I'm glad I sat in on his talk because it reminded me how far I had come as a ghost hunter myself. Ten years ago, I would have probably sat there nodding completely sucked in by it all instead of rolling my eyes at his assumption-led methodology. I did chuckle to myself when I wondered how he would fare if he submitted an investigation report to ASSAP.

After the break it was time for a really fascinating talk from Richard Freeman entitled 'Cryptozoology - n the track of living monsters'. As a child, I'd always loved reading tales of dragons, unicorns and other weird and wonderful creatures. I would always take a run and jump onto the bed after reading them but I think there is a little something in all of us that likes to be frightened by the thought of a monster under your bed lying in wait for its opportunity to grab you! ....or is that just me? Richard's talk was a fascinating insight into his journey around the world as a cryptozoologist on the hunt for the Yeti, Mongolian deathworm and the orang-pendek to name but a few.

The last panel discussion of the weekend was chaired by Dave Wood and included paranormal investigator John Fraser, sceptical ghost hunter Hayley Stevens, paranormal researcher C.J. Romer and paranormal investigator Steve Parsons.

So what is the future of ghost investigation? It suddenly struck me as I gazed at the sea of faces listening intently to the team of panellists that it certainly seemed to be going in the right direction. For some of the delegates, it was the beginning of their own journey. It seemed that no matter what our personal belief systems and backgrounds, we all share this common interest and a thirst for knowledge. I certainly have come along way since my humble beginnings as an investigator nine years ago. I was, dare I say it, the biggest woo of all but to my defence it was because I didn't know any better. I cringe when I think back to those early days of EMF meters and silver flight cases.

In 2008 I joined ASSAP and it was then that I suddenly realised that there was so much more than pseudoscience and assumption-led methodology. It was like a breath of fresh air. ASSAP came into my life at the time when I felt I had exhausted every means I had been given in regards to investigating the paranormal and suddenly I was shown by using a completely different tack that you could achieve so much more and finally be taken seriously as an

investigator. The trouble was at the time, many members of BSPRI weren't ready to embrace change within our own group and I was in the minority. I was even accused of being brainwashed when I came back from my ASSAP training investigation at Oak House.

Thankfully now, most of our members are members of ASSAP and three of us are AAs but more importantly, we all investigate using ethical, evidence-led methodology. No matter what belief system members have, within the confines of BSPRI we are Borg-like and are united in our evidence-led approach to research and investigation.

Am I proud to be a ghost hunter? Hell yeah!

I would like to thank everyone involved in the organising of Seriously Strange 2013 and I very much look forward to the next one!

# BRAIN WAVES

*Lembit Öpik*

*Lembit Öpik assesses the relationship between paranormal phenomena and UFOs and asks whether we're looking for the wrong kind of waves.*

Traditionally, UFOs and paranormal events are not seen as related. They've generally been treated as two distinct and unconnected phenomena. Aliens are occasionally attributed with extra-sensory powers. In Star Trek, Dr Spock's 'mind meld' capability is alluded to as a psychic power, but with an additional indication that even this technique is replicable by using certain technologies (1). The separation between aliens and ghosts is reflected in a considerable percentage of fictional and non-fictional writing. Put simply: ghosts are usually home grown; and aliens aren't usually ghosts.

In the world of scientific research, there has been relatively little cross-over between extra-sensory phenomena and the search for extra-terrestrial intelligence. Essentially, it is assumed that ghosts don't need flying saucers to get to earth, but that aliens do. But is this a true account of the situation? Or is there another, better, paradigm which fits what we already know?

The purpose of this article is to propose another way of looking at paranormal and extra-terrestrial phenomena which is at once both simple and profound. I offer the concept that some sentient beings evolve an advanced psychic capability. In this case, the Search for Extra Terrestrial Intelligence (SETI) and the study of parapsychology converge. My research in this field has taken me far further than I had originally anticipated, not least in terms of the implications for our understanding of the true nature of the cosmos. I offer this as only as an introduction – a thought piece – outlining my initial conclusions and highlighting where I believe this inquiry is leading. If it provides a provocative stimulus to debate, then it achieves its purpose.

Of course, none of this means anything if there are no extraterrestrials - and no ghosts either. To make it worth exploring a cohesive – and inter-connected – paradigm, which could bring the two closer together, it only requires us to prove the existence of one of the two phenomena. This drives us to also consider its implications for the other. Fortunately, *and counter to popular belief*, we do have proof – proof *positive* – of the existence of one of these phenomena – and a robust case for believing that, subject to some conditions, the other will eventually be a cosmic fact if it isn't already.

## THE REACH OF THE MIND

J.B. Rhine is a name pretty much unknown to the general public. He's not a household celebrity and hasn't been the subject of popular cultural commentary. In fact, his most public contribution to cinema is a scene in *Ghostbusters* which features a 'Zener card' test, a technique invented by psychologist Karl Zener for Rhine's experimental work (2). In the film, neither Rhine nor Zener even gets a credit for this – and it must be said that Bill Murray's version of the test is carried out in what might be called a rather unconventional, indeed 'shocking,' fashion (3). Yet Rhine is, without doubt, the father of modern parapsychology. A study of his work confirms that it provides highly persuasive evidence of the existence of extra-sensory phenomena.

One thing which even sceptics can accept is that, whatever his research shows, Rhine's results can be measured in a statistical way. If Rhine has correctly interpreted them, it would be enormously powerful statistical evidence in support of his conclusions – to a statistical level of confidence which would doubtless be accepted in most walks of scientific life.

While Rhine speculated about possible mechanisms, he never presumed to make an authoritative claim on the precise nature of those mechanisms. He placed himself firmly in the experimental camp, aiming to prove whether or not these curious powers existed in the first place. His primary mission was to formalise scientific research into paranormal phenomena, explaining what happens, but not how or why it occurs.

Some have suggested that Rhine's seminal volume, 'The reach of the Mind (4),' is so persuasive that it offers those who reject his conclusions only one option: to claim Rhine's a liar. However, such a claim would be instantly disregarded by those who have studied Rhine's contributions methodically. He had an impeccable record of scientific rigour and experimental integrity across decades of research. Indeed, one of Rhine's own central principles was explicitly to remove the risk of intentional and unintentional 'cheating' in his experiments. This is a key reason why many believe that his research is conclusive.

It is fair to note that others have pointed out that if it were 'beyond criticism,' the study would have proven the existence of PSI to such an extent that nobody would question it. These observers question various aspects of his work, not due to suspicions of experimenter dishonesty but because they challenge the statistical significance of his results. This is balanced by those who claim that Rhine's conclusions are compelling and inescapably logical. The fact that this conclusion this is not a generally accepted one is in itself an interesting phenomenon. By definition, both schools of thought cannot be right. If, as this observer believes, Rhine's findings are indeed valid, it begs the question: why

has the existence of these extra-sensory phenomena NOT been more widely accepted? Perhaps this tells us less about any weakness in Rhine's approach and more about the structure of scientific revolutions, a separate subject covered expertly by the accomplished philosopher of science T.S. Khun (5), but which – for the sake of economy – is not explored further in this work. As such, it is for the reader to draw their own conclusions on the force of Rhine's arguments – but those who seek to understand the import of his work are strongly encouraged to directly study his own writings on this subject.

Nevertheless, the proposition put forward here is that his precautions satisfy - and frequently exceed - what is expected in other psychological research. I suggest that, unless Rhine had indeed pulled off one of the most elaborate deceptions in human history - involving literally hundreds of individuals across tens of years - then his conclusions appear compelling. To readers not familiar with Rhine this may seem a heady claim; a detailed analysis of his methodology, data and secondary sources is really beyond the scope of this article and would require a separate article to do it justice.

I invite you to accept for now – for the purposes of this analysis – that extra-sensory phenomena have been proven to exist. Of course, if this is a wrong assumption, then you'll have to treat the rest of this work as just a bit of informed and absorbing fiction – but even then I hope you'll enjoy this article anyway!

THE TRUTH IS OUT THERE...

Let's turn now to the existence of extra-terrestrial visitations. It is the opinion of this observer that the evidence for close encounters of the third kind – namely actual contact - is not conclusive. While the truth is certainly out there it's not turned up on a chat show just yet.

Of the thousands of reported UFO sightings and alleged contacts, the great majority are resolved through terrestrial means. For example, established psychological theories offer a credible explanation for some alleged 'alien abduction' experiences. There is dispute about what proportion of UFO claims remains unexplained. Some say 30% are anomalous, while others put the proportion at 5%.

'True' UFO percentages are thus a matter of dispute. The Condon Project assessed around 25% of reports it studied as being "unexplained" (6), but Allan Hendry (7), which some see as a more credible study, came up with a total of around 10%. Jenny Randles (8) and BUFORA (9) feel the percentage is actually around 5%. Sceptics may deem it to be 0%. Of course, this would be somewhat

churlish, on the basis that there are self-evidently some unidentified flying objects, even if one assumes them to have a terrestrial origin.

So, the jury's out. This dispute will continue for some time, due to a simple logical obstacle. For those who wish to prove we have never been visited, they face the daunting task of showing the *non-existence* of something; one single example to the contrary is all that's needed to reveal this position is wrong. Incidentally, it's also why it is so hard to argue against dedicated conspiracy theorists. In addition, there's often a particular circularity to their arguments – in rather the same way one might claim that, while you were out, everything in your house was stolen and replaced with an exact replica.

So, instead of drowning in a search for *certainty*, let's wade about into a shallower pool of *probability*. But we can start with one very useful certain fact. Life exists in the universe: we've been busy evolving on our Blue Planet for billions of years. Clearly, the difference between a lifeless universe and one with even a single inhabited planet is a qualitative one. The difference between life on one planet and life on many planets is merely quantitative.

And this is where it gets interesting. Human beings are inherently curious. We have a 'wander lust,' something we've demonstrated in boats, aircraft and more recently in lunar modules. As long as we don't destroy ourselves in what the late Carl Sagan called 'an instant of unforgivable neglect (10),' we ourselves will unquestionably commit to interstellar voyages eventually – probably within 400 years. By then, our computing tools will have increased in their efficacy by 2 to the power of 100 if the current rate of progress is sustained, which of course, is a point of speculation rather than certainty. (11) However, just for fun, let me write that out in full:

We're looking at a 1,267,650,600,228,229,401,496,703,205,376 times increase on our current computing power by the year 2413. If we can't make a pretty good space ship when our laptops are more than a *million, trillion, trillion times more powerful*, we're just not trying and we don't deserve to be allowed to go anywhere.

In reality, we can't even imagine what the technology will be like in 100 years, let alone four centuries from now. But we can be fairly sure of human nature, and that we'll still be squinting at the horizon asking: 'I wonder what's over there.' So unless our restless souls stop musing, we'll become interstellar explorers, whether our space ships are cigar shaped, saucer shaped or the shape of a comfy scooped out asteroid.

Thus, if the human race is capable of surviving for say, a billion years, it is a racing certainty that we will explore interstellar distances in that time. Indeed,

even at the sedentary velocity of one hundredth the speed of light, we'd have the time to cross our Milky Way galaxy and return 50 times over. I imagine, of course, that we'll be able to travel a great deal faster than that by then. It's just as well! With six TRILLION planets to visit, we'll still have a great deal to look at, even across such a long period. One psychological motivation will be to find other earth like planets. And surely they must be out there. It would be an assumption as arrogant as the once cherished belief that earth is at the geometrical centre of the universe.

And here's where we move on to probabilistic thoughts. If 'earths' abound, why would life not have evolved on at least some of them too? After all, here on our earth, it seems preposterously unlikely that life began just once, in a one-off fluke incident – for example, a solitary lightning strike through the right rock pool of organic compounds. Life probably started repeatedly before taking hold, because that's how the planet seems to work. It's rare for everything to go right first time and just by accident.

Indeed, it seems counter-intuitive to imagine we came about as a result of one single event. In the same way, it is hard to believe we are the only such planet when billions of planets exist. Note that Venus is a virtual twin of our own blue world. If Venus had been just a little further from the sun, it could well have replicated our own planet's evolutionary story. It is a twist of fate that we are terrestrials rather than Venusians... or possibly even Martians – a subject I've covered in a previous article for ASSAP (12).

Having said all that, let's take the very worst case scenario. Let's imagine other earth-like planets exist but are not inhabited - although that strikes me as wildly improbable. In this case, it's odds-on likely that when we find these planets, we'll take full advantage of them, notwithstanding the environmental and moral debate for and against doing so. Terra forming would take some time, but it's all achievable with patience. Thus, as long as humanity can survive its own self destructive tendencies, there will eventually – and certainly – be life on other planets thanks to *nature* – or *human nature*. Thereafter, evolution will ensure local adaptation to atmosphere, gravity and starlight, to suit the local environment. So, if the universe doesn't supply us with neighbours, we'll make them ourselves (unless, of course, we do die before we have the chance). It's a binary situation: there are no other realistic possibilities.

I personally take the view that other life exists – because it's narcissistic to imagine that earth 'is all there is' as far as life is concerned. In a common sense kind of way, it would seem a bit of a waste of a universe if there isn't. And, since we also have local proof that intelligence is an evolutionary outcome, if life has evolved elsewhere, smart creatures have also probably evolved elsewhere. However, as we can see, even if they haven't, we'll eventually make long, long

journeys, and find new homes, and settle there, hopefully without evicting or killing anyone.

The story so far therefore goes like this: extra-sensory phenomena have been conclusively demonstrated in a statistically credible fashion; and even if intelligent life doesn't exist on other planets yet, it will do as long as the human does not destroy itself.

If this analysis is reasonable, then it opens new lines of exploration which, up till now, have been the stuff of exotic science fiction rather than scientific discourse. It's time to consider the relationship between the extra-terrestrial and the paranormal.

### GHOSTBUSTERS VS ALIEN

Let's go to the movies! Now, there are other vehicles I could have used here for this thought experiment. I could have taken my examples from speculative science and futurism; for example the increasing body of material relating to the intriguing question of 'uploading' human consciousness onto computers. Still, even this idea is a favoured subject of Hollywood in iconic films such as *The Matrix* (13) and the underrated, but remarkable and chilling, *Forbin Project* – an early treatment of the development of consciousness and decision-making in an electronic mind (14). So, cinema isn't the only way to pursue this investigation, but it's fun and I hope you don't mind if I take it as 'good to go for now.'

We've already mentioned the delightful and iconic entertainment *Ghostbusters* (15), in which Bill Murray and his chums tackle irksome spirits using a collection of creative and fanciful tools – a number of which look like toy water pistols. At no point is there any suggestion that any of these mischievous spooks originate from other planets - or that they arrived by space ship. Far from it; the entire premise of the film rests on the presumption that the ghosts are focused on human – rather than alien – affairs. This, by implication, is why the *Ghostbusters* can defeat the ghastly ghouls without recourse to a 'war of the worlds' type response.

Not so with *Alien* (16). There's nothing psychic about it at all. It's just a very violent beast. Interestingly, we are teased with an implied link between the *Alien* and earth in the protracted and – at times – highly confusing prequel to the whole *Alien* archipelago – *Prometheus* (17). It's a film which leaves the majority of viewers stumbling out of the cinema vaguely shaking their heads in bafflement. However, there's no suggestion in the film that supernatural forces are at play. This is typical of the mainstream sci-fi alien genre – perhaps because having to fight nasty psychic aliens might be too much even for most of

Hollywood's actors to handle. However, there are one or two brilliant examples where film-makers have sought to bring the two together. Let's look at one of the best.

#### THE MONSTER IN THE ID

In the classic – and philosophically insightful – movie *Forbidden Planet* (18), inter-stellar explorers from earth come across the far off world of Altair IV, where Dr Morbius lives with his daughter Altaira. After various adventures and frightening scrapes, we discover that the former non-human inhabitants of the planet were annihilated in an instant as a result of supernatural forces which they themselves provoked. The 'monster in the Id' found physical manifestation and wreaked a terrible revenge upon all on the planet.

This is a 'must see' film for anybody interested in the possible relationship between extraterrestrial intelligence and paranormal activity. The core message of the film is: if you get smart enough, you might be able to connect directly with the psychic world. But be careful what you wish for! As you venture through the field of psychic self actualization, you may inadvertently sow the seeds of your own instant and total destruction.

What interests us here is the suggestion that suitably advanced species may be able to make a serious step towards harnessing the extra-sensory phenomena which have been observed here on earth by J.B. Rhine and others. The species – known in the film as the Krell – had no intentional self-destructive tendency, and had planned to use the power of the supernatural to make their own existence easier, enabling them to devote more of their time to higher order activity rather than the mundane chores of daily life. Regardless of their dramatic fate, it is surely tenable to argue this would be a plausible aspiration for species capable of doing this. Perhaps in a million – or a billion – further years of evolving, humans will develop a stronger relationship with their psychic being. If we access this ability then we, too, could face the peril of awakening the 'monster in the Id.' The fate met by the Krell could then befall us too, and we could be snuffed out in an Armageddon apparently of our own design, yet reflecting religious scripts such as of the Book of Revelation in the Christian Bible. Clearly there are questions of faith which this hints at, and I'll comment on those later.

But what if there is a limiting factor which prevents us from accessing these powers until we are capable of handling them peacefully and responsibly? What if there is some condition which acts as a 'failsafe' to prevent immature and belligerent species from stumbling into their own extinction? A rite-of-passage could prevent the grizzly events of *Altair IV* from becoming our reality. This implies that various 'classes' of intelligent species could inhabit our universe –

some have earned their psychic stripes and others have not. What implications would this have for our understanding of the cosmos?

#### E.T. PHONE HOME

When the stranded interstellar traveler E.T. ends up befriendng the boy Elliott, one of his main priorities is to get in touch with the folks back home. Having grasped the purpose of a telephone he implores his earthly host for use of said equipment. (19)

This tells us two things: firstly, E.T. is willing to burden his human friend with a spectacularly huge long-distance phone bill. And secondly, E.T. is not capable of communication, at an extra-sensory level, with his home planet.

Should aliens have the ability for some degree of telepathic communications, this would change everything. There would be less need for intercoms or radiotelephony – or no need at all. Interstellar travellers would be able to transmit messages to each other as waves of thought, and we would not detect those messages as radio waves. They would not be detectable by Jodrell Bank or any other listening stations on earth. S.E.T.I. would be looking for the evidence and never find it.

The implications of this are hard to overstate. For a start, this could provide an explanation as to why we haven't picked up radio signals – despite the belief of many that life ought to exist in abundance in the cosmos. Perhaps it's less surprising if they've evolved past walkie-talkies. Maybe civilisations only depend on that sort of communication for a few million years, or for an even shorter period, before finding a more elegant, wireless and thought based form of interaction. In that case, we'd be lucky to catch them during their temporary phase of radio communication, and unable to tune into their mind-to-mind communication thereafter.

Secondly, one can extrapolate from this to the idea of remote viewing – namely, the ability to observe distant scenes psychically, without the need for making a journey in person. If so, aliens might observe earth from the comfort of their own home planet and without the need to land here at all. Faced with the option of making the trip, or making the thought, the latter would surely be the preferred option. The alien visitor, called 'prot,' in the film *K-Pax* (20) saves himself some time by travelling on a beam of light, which sounds quite efficient. Yet, the speed of thought might be even quicker. The *K-Pax* alien also inhabits a human body which has become available. Without taking this too far, one could postulate some kind of 'alien abduction' experience which employed this kind of remote viewing activity. This, at a push, might provide a platform for alleged

close encounters, though this has to be treated with great caution, given the controversy around such incidents.

Such a scenario also introduces another interesting possibility. If aliens can psychically observe us, they could presumably also psychically interact with us in other ways. The distinction between alien visitations and paranormal phenomena then distills into a co-terminus field of study. Our interpretation of the source of certain phenomena could be a *mis*-interpretation of what's actually occurring, and why. And if there is a cosmic psychic 'force,' it could well be that this is occasionally accessed by those with a demonstrable extra-sensory capability on earth.

There are interesting philosophical implications in this scenario. If advanced species do develop some sort of telepathic ability, then the concept of that Force, as represented in Star Wars Episode IV (21), becomes altogether plausible – and pretty much a 'Force of Nature.' A collective psychic consciousness such as that connects not only advanced species, but also provides some kind of platform for faith in a higher power. Once we open our minds up to these kinds of possibilities, we flirt with the idea of a 'conscious' universe – which some may wish to interpret as religiously significant.

#### THE ANOMALIES

All of this does kick up a number of anomalies, each of which is worthy of an entire paper on its own. To grasp the flavour of the issues, here's a summary of three of the most testing ones.

Firstly, if extraterrestrials have a highly developed psychic ability, what prevents this from 'messing up' the quantum related 'order' in the universe? As anyone who has a grasp of quantum mechanics will confirm, our universe is not absolute. Rather, it is probabilistic. In other words, there aren't really certainties, rather than events which are more or less likely to happen. This uncertainty and randomness is actually a necessary condition for the existence of true free will. Without it, we'd be trapped in a causal universe, where free will is merely a false impression. However, at the other extreme, if we could perform tasks reliably using extra-sensory capability, this could buck probabilistic physics to such an extent that the whole of conventional theory becomes unstable.

The implications of being able to defeat the laws of probability are monumental. You would, in effect, no longer be prone to the rules we currently feel bound by. People could pass through walls, levitation and telepathy would be commonplace. Such a world would be incomprehensibly different to our own

earth as it currently seems, and the very nature of our corporeal existence would change.

Secondly, what about time? Do extra-sensory phenomena occur simultaneously across vast distances or do Einstein's limiting laws of relativity confine these phenomena? Could we communicate directly with alien species at beyond the speed of light according to a sort of 'absolute' time frame, where midday here on 13th of February, 2015 is the same time there, and our message does not have to go through the hassle of a long and protracted journey at 300,000km/second? This would break one of fundamental principles governing our understanding of the universe. Yet so do extra-sensory phenomena, because they cause statistically improbable events to occur to a measurably significant degree in a controlled and observed experimental environment.

Thirdly, what if there really is 'evil' in our souls? Are psychic powers in any way morally discriminating? This leads us to the realm of faith and spirituality. It could be that a condition of entry to this powerful psychic club is to understand and handle ourselves in a 'good' way, whatever this might mean. Having the capacity to create chaos in the operation of the laws of physics could be limited to those unwilling to use it to regularly do bad things.

Knowing the answers to these kinds of questions could be a test we and other species must pass for access to the cosmic club of extra-sensory existence. It also offers an explanation for the apparent silence in a cosmos where life could abound: we can't handle the truth yet, so we don't get told about it.

There's one more point here, which isn't so much an anomaly as an observation. There's no guarantee that the more advanced we become, the more psychic we are. Many animals have been cited as having displayed an awareness of everything from a death in the family to an approaching tsunami. Not much research exists to establish whether these are psychic senses or something else. Testing cats and dogs for such abilities could be as useful as testing humans. Defining that experiment is a challenge! But it's not an impossible one.

## NEW WAVE?

Our understanding of extra-sensory phenomena is patchy. For example it's not clear if these gifts function erratically – or have a built in 'protection against misuse.'

Nevertheless, a rich seam of inquiry awaits those willing to take the matter further. Pursuing the subject will reveal far more than just the possible nature of extraterrestrials and their relevance to paranormal phenomena. This

investigation may go some way to explaining why it is that we haven't yet confidently ascertained whether sentient beings exist elsewhere.

If their mode of travel and communication is based on thought rather than flying saucers, then to all intents and purpose, they may already be amongst us. Our main challenge is then not so much to listen out for radio signals, but to ask new questions about how else we may communicate with them. After all, there's no point searching for waves of light at any frequency if we should be looking for waves of thought: no radio telescope on earth is equipped to detect those.

Advanced extraterrestrials may possess advanced or consciously developed forms of the extra-sensory powers that may be possessed by some humans; and if one accepts the authenticity of the works of researchers such as Rhine – as I do – it seems enormously likely that this is indeed the case.

Of course, it may be that radio waves turn out to be the beginning and the end of the matter. However, to this researcher it seems far more probable that this isn't all there is. If so, we may well experience 'first contact' the psychic way... when we're considered 'ready.' Let's face it, we've still got a lot of growing up to do. If that's what's holding everything back, when the time comes, we could finally discover who else is out there when we also realise that, in a very real sense, the Force is with us – and always was.

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# THE TWIN THING

*Guy Lyon Playfair*

Is there a special bond between twins, especially identical or monozygotic (MZ) ones? Can they read each other's minds? Are they telepathic? These questions have often been asked but never satisfactorily answered. Reliable reports of unusually close twin connections date back to at least 1781, when John Wesley commented on the 'strange sympathy' of a pair he knew who, among other things, had simultaneous identical dreams even when living far apart (Jennings, 2005, 94-5). Yet serious research into this strange twin sympathy had to wait nearly two centuries, and it was not until as recently as 2012 that the first comprehensive review of one of the most under-researched subjects in all of science found its way into a peer-reviewed scientific journal. (Jensen and Parker, 2012).

Why this delay? There are too many reasons to go into here, but one is that many twins never have any experience of telepathy at all, as one named Alex makes very clear on the website [multiples.about.com](http://multiples.about.com):

"As an identical twin who knows many other twins I can tell you for a fact that twins don't have telepathy. Any that say they do are either pulling your leg or attention-seeking."

This somewhat extreme view is supported by Professor Richard Wiseman (2011), who explains that:

"Twin telepathy is due to the highly similar ways in which they think and behave, and not extra-sensory perception."

Similar dismissive remarks by other 'experts' have led to the subject being relegated to the bin marked Taboo, from which it has only recently been retrieved, and I am glad to say that I was one of those who helped retrieve it. My interest in the subject began on 27 November 1975, when I heard on the radio that *Guinness Book of Records* editor and identical twin Ross McWhirter had been shot dead on his doorstep. If there was any truth to the traditional belief in a 'special connection', surely such a traumatic event as a murder would activate it? Cutting a long story short, I was told by a colleague of Ross's brother Norris that no, he had not reacted at the time, or if he had he was unwilling to talk about it.

However, many years later I met Norris's son Alasdair who told me that yes, he

had reacted. As he put it:

“We were getting ready to go to my sister’s school play, and I was standing in the drawing-room with my father. Suddenly, for no apparent reason, he slumped down into a chair. He looked dazed. I was terrified and thought he had suffered a heart attack. A few minutes later he recovered; the phone rang and it was the police.”

Just a one-off coincidence, you may think. I’m not so sure. This was first-hand evidence I could not ignore, so I started to look for more of it, finding plenty especially from mothers of young twins. One told me how one of her boys had yelled his head off at the exact time that his brother was having a painful injection in hospital. Another described how one of her newborns suddenly went into convulsions at the precise moment his twin was in the process of suffocating and turning blue – his life was saved just in time. A third told me how one of her six-year-old girls would tell her when her sister was having – or about to have – an epileptic fit. Asked at my request how she knew, the reply was “Oh Mom, it’s no big deal. I just know.”

I now have a bulging file of similar case histories, and it is clear that telepathy tends to happen when it has to, as in times of crisis, danger, pain or any kind of distress. I have accounts, many of them given to me by those involved, of twins reacting when the other one falls downstairs, breaks a leg or a nose, burns an arm, has a panic attack, gives birth (even prematurely), commits suicide or, as described above, is shot dead.

It is equally clear that it tends not to happen when asked by scientists to do boring experiments, such as guessing cards. There has to be some kind of surprise stimulus. So in 1997, when I was able to arrange an item on twins for the Carlton TV series *The Paranormal World of Paul McKenna*, I suggested doing a live experiment that involved some kind of shock or surprise that could be recorded as it happened for all to see on a polygraph. Paul liked the idea, and in due course he helped provide the first public demonstration of twin telepathy in action. While one twin sat quietly in the studio in front of a carefully constructed pyramid after being effectively hypnotized (which you aren’t allowed to do on TV) into just thinking that the twin in another soundproof room down the hall was going to ‘pick up her brainwaves’.

The special effects team had done a good job on the pyramid which, on a hidden cue from Paul, exploded with a loud bang, flashing lights and clouds of coloured smoke, giving the nicely relaxed twin quite a surprise. As viewers were able to see, at the exact moment of the explosion, her sister’s polygraph showed a most unusual reaction as the recording needles shot almost off the chart.

As polygrapher Jeremy Barrett, who had no idea what was going on in the studio, commented: "She certainly picked up something from somewhere. It looks to me like shock or surprise".

It was a very encouraging start in what I felt was the right way to demonstrate twin telepathy without doing anything unethical, such as shooting one of them dead. I was able to help set up three similar experiments, for the American *Discovery* and *National Geographic* channels, and for the popular British *Richard and Judy* programme. They all gave promising results, though none was a strictly controlled experiment. All I would claim is that they showed that further research was fully justified. Yet who was going to do it, and who was going to pay for it?

In 1998 I had given a talk at the conference of the Society for Psychical Research (SPR) in York, at which I appealed to fellow members to do some long overdue research into twin telepathy. Only one member showed serious interest. This was Adrian Parker, now professor of psychology at the University of Gothenburg, and one of the first in the U.K. to receive a Ph.D with a parapsychology-based thesis. He was also one of the first to use the Ganzfeld set-up to induce clairvoyance, and had an impressive track record of success and positive experimenter effect.

Cutting another very long story short, I managed to get him in touch with the Twin Unit at King's College, London, probably the largest of its kind in the world with some 11,000 twins on its books. Although they had never done any telepathy research, they were quite open to the idea and granted Adrian 'visiting scientist' status, meaning he could use their facilities and their twins provided that he could supply the funding. They even invited him to their annual garden party and allowed him and his colleague Göran Brusewitz to carry out a large-scale questionnaire among the 200 or so twins who attended.

This showed fairly conclusively that at least a third of all identical twins questioned (and almost exactly half that number of non-identical ones) have experienced some kind of telepathy, some just once or twice but others quite often.

Adrian and I started scratching our heads and wondering why, if MZ twins are supposed to be identical, there should be such a difference among them with regard to telepathy? It seemed clear, as Orwell might have put it, that some identical twins are more identical than others. How could this be?

I came across a possible answer quite by chance, in a paper by a team from the University of Indiana (Sokol, 1995), who had studied a very large number of twins and found that what made them different was the timing of the splitting of

their egg. The later the split, the closer the twins would become. So it seemed to us that the late splitters might also be the most telepathy-prone. It seemed a hypothesis worth testing, and results of the first trial were promising – in an experiment (again financed by a TV company, this time a very sympathetic Danish one) the most successful subjects turned out to be late splitters who experienced telepathy frequently. These experiments are described in the paper already mentioned (Jensen and Parker, 2012).

Adrian was able to follow up this success with an experiment held at King's College, yet again financed by television (ABC Night Line) because no other source of funding was available. This time he used two polygraphers – one to record the signals during the sessions, and the other asked to study the chart later without knowing what had been recorded, and to mark the points at which he thought there had been some kind of stimulus. He chose the correct points twice as often as would be expected by mere chance guesswork.

Shortly after this experiment was published (Parker and Jensen, 2013) I had a surprise visit from a young design student from a London college who told me she wanted to investigate herself and her twin sister, and had actually designed and built a device with which to do so which could be worn under clothing with electrodes fixed to the neck and back. It was in fact a miniature polygraph, although it only recorded one channel, that of galvanic skin response. This has proved to be the most sensitive of the four used on my earlier experiments, the others being chest and thoracic respiration and heartbeat.

For a trial run I suggested that Twin A (I won't name her until she is ready to go public) should sit watching a blank screen for ten minutes and listening to the soothing sound of running water, while her sister B, who was separated from A's view and hearing range, watched a horror film. Both were wired into the same distant computer, so that their 'miniographs' were displayed side by side together with the film B was viewing.

Neither twin could see the screen until the experiment was over, and when they played it back afterwards there was a very interesting finding. B's chart showed a dead straight line until a particularly gruesome event on the film, when it rose rapidly as could be expected. What was not to be expected was that A's chart line also rose although she was doing nothing at all except stare at a blank screen and listening to the sound of running water. Even less expected was the fact that her line began to rise shortly before her sister's. It seemed that not only had she picked up B's stress at a distance, but had done so before the stressful event took place.

This was just a pilot study, reasonably well controlled by a sympathetic professor and as yet unpublished – you're reading about it here first. If it proves

to be repeatable, it will make it possible to do good research into twin telepathy at minimal cost.

So, in just ten years or so this research has made more progress than it did in the whole of the past two centuries. We have established that some twins are telepathy-prone and some aren't. We have formed hypotheses to account for this difference. So far, the early/late split one is the only one to have been tested, but there are others. There are indications that personality is an important factor, extroverts being more prone to telepathy than introverts. There is also evidence from experiments with non-twins that artistic subjects, especially musicians, are also promising subjects. There is material here for a thesis waiting to be written.

If enterprising researchers such as Adrian Parker can get the funding for large-scale experiments, we may soon be able to provide scientific support for a phenomenon many twins know to be true, as expressed concisely by Californian supermodels Sia and Shane Barbi (Bearn, 2002):

Sia: We have that twin thing going on. Wherever we are in the world, we kind of know what the other one's doing.

Shane: That's right. It's instinctive. It's a twin thing.

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# THE MATHEMATICS OF BELIEF: BAYESIAN INFERENCE IN PARANORMAL RESEARCH

*Andrew May*

Belief plays a crucial role in the study of anomalous phenomena. Avid devotees of a particular fringe theory will cling to it no matter how much evidence builds up against it. At the other extreme, a hardened skeptic will refuse to believe in anomalous phenomena, regardless of any amount of evidence. The objective researcher needs to know when to discard one belief and switch to another, based on the accumulated evidence.

Bayesian inference is a mathematical technique that is designed to do exactly this. From the end-user's point of view, the details of the mathematics are not important; they can be programmed into a computer application with a suitably user-friendly interface. Bayes' theorem, the equation at the heart of the Bayesian approach, can – like any equation – be envisaged as a black box with inputs and outputs. The inputs are one's prior beliefs together with the available data, while the outputs indicate how one's beliefs should change in light of the data.

In science, the term "inference" refers to the process by which conclusions are drawn based on accumulated evidence. During the twentieth century, one particular form of inference grew to dominate the field, based on frequentist statistics. Frequentist inference is especially suited to the analysis of the carefully designed and controlled experiments that predominate in mainstream science. The name "frequentist" comes from the idea that if a large number of identical experiments are undertaken, then the most pertinent outcomes are the ones that are observed most frequently.

Bayesian inference is an alternative to the frequentist approach. It is very different in its language and philosophy – a fact that has sometimes led to heated debate between proponents of the two methods. If applied correctly, however, the two approaches are equally valid, and the best one to use in a particular situation will depend on practical considerations. Traditional scientists working in a laboratory environment will usually favour the frequentist approach, because its methodology is familiar to them, and they can design their experiments with frequentist analysis in mind. On the other hand, Bayesian methods have proved successful in situations where there is less

control over the form and quality of the data, in applications as diverse as image processing, military data fusion and spam filtering.

This paper will argue that Bayesian inference is also a useful tool in the scientific analysis of anomalous phenomena, for two important reasons:

- It explicitly addresses the issue of the user's subjective beliefs and preconceptions. These are present in any scientific investigation, but are usually hidden away in assumptions that may only be hinted at in the write-up of the analysis. In the Bayesian approach, the subjective assumptions are dealt with in a way that is methodical and transparent.
- For people who are not trained scientists, the syntax and vocabulary of Bayesian inference is less obscure than that used by frequentists, and closer to everyday speech. It acknowledges that there may be a whole range of possible explanations of the available evidence, and puts numerical values on the degree of belief one can have in each of these explanations based on the weight of evidence.

## BAYES' THEOREM

The Reverend Thomas Bayes was a Presbyterian minister who lived in the eighteenth century. By way of a hobby, he appears to have dabbled in statistics – a subject that was still in its infancy. After his death in 1761, a friend named Richard Price found an unpublished “Essay towards solving a Problem in the Doctrine of Chances” among his effects. Together with some additional material of his own, Price published the paper in the most prestigious scientific journal of the day, the *Philosophical Transactions of the Royal Society of London* (Bayes and Price, 1763).

This paper, now 250 years old, is among the most controversial mathematical works ever published. The formula at the heart of it is now known as Bayes' theorem. Some people consider this to be the most powerful equation in all of statistics, while others dismiss it as the product of hopelessly muddled thinking. To understand why Bayes' theorem has generated such heated debate, it is necessary to take a close look at the mathematical concept of probability.

In statistics, probability is a numerical quantity that can hold any value between 0 and 1, which in layman's terms is equivalent to saying it can run from 0% to 100%. If an event has a probability of zero, then it is impossible: it will never happen. At the other extreme, a probability of 1 means there is a 100% chance of the event occurring: in other words, it is a certainty. A probability of 0.5 means there is a 50:50 chance of it occurring, and so on.

A conditional probability is the probability that an event will occur *given a set of assumptions*. In statistical inference, this “set of assumptions” is referred to as a hypothesis, which can be represented by the letter  $H$ . The probability that a particular event  $E$  will occur on the assumption that  $H$  is true is then written symbolically as  $P(E | H)$ . Probabilities of this type are the key to classical, frequentist inference – the higher the value of  $P(E | H)$ , the more frequently event  $E$  will be observed if hypothesis  $H$  is true.

Bayes’ theorem inverts a conditional probability. It takes  $P(E | H)$ , the probability of observing event  $E$  given hypothesis  $H$ , and transforms it into  $P(H | E)$ , the probability that hypothesis  $H$  is true given that event  $E$  has been observed.

Is this a good thing or a bad thing? The answer is relative: the way people react to Bayes’ theorem depends on their frame of reference. An ordinary person with no grounding in the philosophy of science may see no problem at all. The idea of assigning a probability to a hypothesis is implicit in everyday speech: “What is the chance my laptop has a virus?”, “What is the chance another player is holding three aces?”, “What is the chance the house is haunted?”

To an adherent of frequentist statistics, however, it is a logical fallacy to formulate a question in this way. The hypothesis  $H$  is essentially a cause, and the observed event  $E$  is an effect. Cause must precede effect. An effect can be probabilistic, but (so the argument goes) a cause cannot. Hence the quantity  $P(H | E)$  that is calculated by Bayes’ theorem is meaningless.

Although this argument is still aired by some people, it is erroneous – or at least, it is not a statement of absolute truth. It is valid within the frame of reference of frequentist statistics, but that is not the only frame of reference that can be used in science. Within a Bayesian frame of reference, which uses a fundamentally different definition of probability, Bayes’ theorem is perfectly valid.

The original paper by Bayes simply expounded the theorem and showed how it might be used, and Price’s framing comments added little to this. The first person to really pick up Bayes’ theorem and run with it was Pierre-Simon Laplace (1749 – 1827). Laplace was the greatest scientist of his time, sometimes referred to as “the French Newton”. Despite his eminence, however, Laplace did not persuade others to follow in his footsteps. For the rest of the nineteenth century and much of the twentieth, frequentist statistics dominated the field, and the Bayesian approach was relegated to the sidelines.

Philosophical distaste for applying probability to hypotheses was only part of the reason why Bayesian techniques fell into disuse. There was also a practical

consideration, based on the mathematical forms of the Bayesian and frequentist approaches. Bayes' theorem is essentially a numerical sausage machine – or, to put it in technical terms, a recursive formula. Data is put in one end, a handle is turned, numbers are crunched, and the answer comes out at the other end. In the days before digital computers, practical implementation of Bayes' theorem was tedious in the extreme. On the other hand, the frequentist approach was ideally suited to the graphs and look-up tables of the pre-digital age. It was only when digital computers began to be developed in the mid-twentieth century that the solution of recursive formula – numerical sausage machines – like Bayes' theorem became a practical proposition.

Recently declassified papers show that the great digital pioneer, Alan Turing, used Bayesian methods in solving the Enigma code during the Second World War (GCHQ Press Office, 2012). Later, during the 1960s, a simple form of Bayesian sausage machine called a Kalman filter was incorporated in the guidance system of the Apollo spacecraft (Grewal and Andrews, 2010). The fact that the first major successes of the Bayesian approach came in such history-making endeavours is significant. If you want to know how useful a mathematical technique is, you should ask what it has achieved in the real world, not how many academic papers have been written about it.

## HOW IT WORKS

As with any technical subject, Bayesian inference has its own jargon. The conditional probability  $P(E | H)$ , which is the be-all and end-all of the frequentist approach, is usually referred to as the likelihood. This may sound like a synonym of "probability", but it is convenient to give it a different label to distinguish it from the Bayesian probabilities that will be introduced in the next paragraph. The historical reason for using the term likelihood is connected with the frequentist view of statistics, but for practical purposes it can be interpreted as "the probability of event  $E$  occurring on the assumption that hypothesis  $H$  is true".

The inverse probability derived from Bayes' theorem,  $P(H | E)$ , is referred to as the posterior probability. Posterior means "after a measurement has been made":  $P(H | E)$  is the probability that hypothesis  $H$  is true given that event  $E$  has been observed. The other Bayesian probability – the input to Bayes' theorem – is the prior probability. This is the probability that would be associated with hypothesis  $H$  before any measurement has been made, and is usually written as  $P(H)$ .

The mathematical details of Bayes' theorem can easily be found online, for example in Wikipedia or Wolfram MathWorld (Weisstein, undated). From the user's perspective, however, it is sufficient to think of the mathematics as being

encapsulated in a black box which has a number of inputs and outputs, as shown schematically in Figure 1.

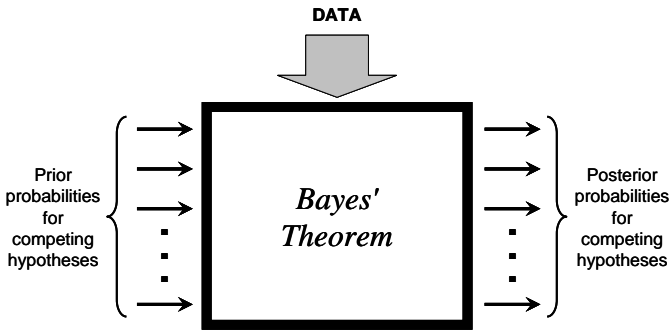


Figure 1: Bayes' theorem viewed as a "black box"

The black box can be viewed as a chunk of computer code that can be used in different ways:

- It could be embedded in a mobile application, with a touch-screen interface that allows the user to enter prior probabilities, collects data in whatever form is appropriate, and then displays the resulting posterior probabilities.
- It could be applied recursively (like the "sausage-machine" mentioned earlier), with the posterior probabilities from one iteration becoming the prior probabilities of the next.
- For complex problems, it could be used to construct a "belief network", in which the posterior probabilities from one layer of black boxes are used as data to feed into the next layer (this is the most powerful application of Bayesian inference, and will be returned to later).

## CHANCE AND UNCERTAINTY

There are two reasons why our knowledge of the physical world is less than perfect. One is the operation of chance, and the other is uncertainty – whether it is uncertainty about the laws of nature, or uncertainty about the accuracy of our measurements. Chance and uncertainty are completely separate, although they are easily confused.

When we flip a coin, we say there is a 50% chance of getting heads rather than tails. If it is a perfectly normal coin and not a trick one, then this is a precise statement of fact: there is no uncertainty involved. Of course there is uncertainty as to whether we will actually get heads or tails, but there is no uncertainty about the probability. It is exactly 50%.

On the other hand, if a weatherman says there is a 50% chance of rain tomorrow, it is a different matter. This figure is not an “exact” probability in the way it is for the coin toss. Predicting the weather is an uncertain business, and the probability figure is an approximation encompassing both chance and uncertainty.

Virtually all real-world applications of Bayes’ theorem will be closer to predicting the weather than tossing a coin. So again, the probabilities are going to involve both chance and uncertainty. However, to show how the method works in ideal circumstances, it is instructive to consider an example in which uncertainty plays no part at all.

#### A CONTRIVED EXAMPLE

Suppose you have ten coins, nine of which are normal coins with a heads side and tails side, while the tenth has two heads. You pick one of the coins at random without looking at it. In Bayesian terms, there are now two competing hypotheses: either you picked a normal coin, or you picked the double-headed one. It is common practice in statistics to refer to the least interesting hypothesis as the null hypothesis, so in this case our null hypothesis is that the coin is normal, which we can represent by  $H_0$ . In this particular example, there is only one other possible hypothesis – that the coin is double-headed – and we can refer to this as  $H_1$ .

Since there was a one in ten chance of picking the two-headed coin, the prior probabilities are  $P(H_1) = 0.1$  and  $P(H_0) = 0.9$ . There is no uncertainty in these numbers, because the example was deliberately contrived that way. Hence the prior probabilities are clearly and precisely defined – a situation that will rarely occur in the real world.

Before testing the coin by flipping it, we can also compute the likelihoods – the probabilities that different outcomes will arise given the various hypotheses. In the case of a coin toss, there are two possible outcomes: either heads, which can be denoted by  $E_1$ , or tails,  $E_2$ . If the coin is normal (null hypothesis), then there is a 50:50 chance of heads or tails. Hence the likelihoods can be written  $P(E_1 | H_0) = 0.5$  and  $P(E_2 | H_0) = 0.5$ .

If the coin is double-headed, then there is only one possible outcome. It must be heads; tails is impossible. Hence  $P(E_1 | H_1) = 1$  and  $P(E_2 | H_1) = 0$ . As with the priors, there is no uncertainty about the likelihoods in this contrived example – they are rigorously precise numbers.

The next step is to flip the coin, observe the result, and update the probabilities from “prior” to “posterior”. Even without using Bayes’ theorem, we can apply a bit of common sense at this point. If the coin comes up tails, then we know it must be a normal one: there is no way it can be double-headed. So we can write down the posterior probabilities without doing any calculations at all:  $P(H_0 | E_2) = 1$  and  $P(H_1 | E_2) = 0$ .

If the outcome of the toss is heads, then common sense has less to say about the posterior probabilities. It is a perfectly sensible outcome for a normal coin, and it is the only possible outcome for a double-headed one. So the posterior probability of the latter hypothesis will be slightly higher than its prior value of 0.1, while that of the former is slightly reduced from its prior value of 0.9. Application of Bayes’ theorem allows us to fill in the numbers:  $P(H_0 | E_1) = 0.82$  and  $P(H_1 | E_1) = 0.18$ .

Now suppose you continue to flip the coin, and get ten heads in a row. The probability of doing this with a normal coin is very low: less than one in a thousand. On the other hand, it is the only possible outcome if the coin is double-sided. So the posterior probabilities are now strongly in favour of the hypothesis that you picked the double-sided coin:  $P(H_0 | 10 \times E_1) = 0.01$  and  $P(H_1 | 10 \times E_1) = 0.99$ .

Figure 2 shows how the posterior probabilities change if the coin is flipped ten times and comes out heads every time. The hypothesis that the coin is double-headed – originally only an outside chance – becomes more and more likely as successive heads are thrown.

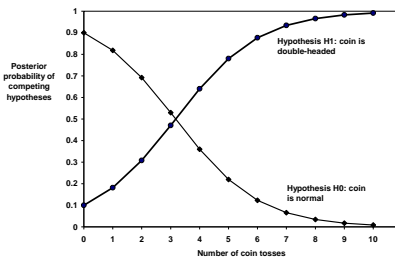


Figure 2: Bayes’ theorem applied to successive coin tosses

## THE MATHEMATICS OF BELIEF

The preceding example was deliberately chosen to exclude the kind of uncertainty that exists in most real-world situations. At the start of the experiment, you knew there was only a one in ten chance of picking the double-headed coin. In terms of belief, it was rational to believe that you had picked a normal coin, while being aware that there was an outside chance you were wrong and had picked the double-headed coin.

As the coin comes up heads throw after throw, your initial belief looks less and less tenable. After six throws, the probabilities of the two hypotheses are almost the reverse of the starting situation. By this point you should seriously consider changing your belief. After ten throws, with the probability that the coin is normal reduced almost to zero, it would be irrational to cling to your original belief any longer.

## APPLICATION TO ANOMALOUS PHENOMENA

By now, the potential usefulness of the Bayesian approach in paranormal research should be starting to manifest itself. The coin-tossing example above involved a double-sided coin, but what if it was a normal coin wielded by someone who claimed to have psychokinetic abilities? Despite the superficial similarities, however, there are fundamental differences in the situation which make application of the Bayesian methodology far from straightforward. Unlike our contrived example, there are huge uncertainties in the definition of hypotheses and the assignment of probabilities to them. In spite of these difficulties, many people over the years have attempted to apply Bayesian inference to anomalous phenomena.

As long ago as the 1880s, a man named Francis Ysidro Edgeworth published a paper on "the calculus of probabilities" in the *Proceedings of the Society for Psychical Research* (Edgeworth, 1885). Edgeworth was no crank: he was a political economist who went on to become a professor at Oxford University and the President of the Royal Statistical Society. On the first page of his paper he outlines what would now be described as a parapsychology experiment, and asks "What is the probability in favour of an agency other than chance...?" This clearly shows a Bayesian take on statistics, since a frequentist would never talk about the "probability of an agency" – only about the probability of an event.

More recently, the use of Bayesian inference in paranormal research has been promoted by, for example, Utts (1991), Sturrock (1994) and Simmons (2000). To quote from this last reference: "Bayes' method is far more amenable to Fortean applications than the traditional statistical methodology we have become used to, as it acknowledges the crucial role that subjectivity plays in the

process. If there is one thing that bedevils the effective analysis of Fortean phenomena, it is subjectivity.”

Simmons also makes the point that the relevant data is often anecdotal in nature, and mixed in with irrelevant “noise”. This scrappy nature of the data, together with the unavoidable issue of subjectivity, are characteristic of other areas where Bayesian methods have been applied successfully, from marketing (Rossi and Allenby, 2007) to counter-terrorism (Hudson et al, 2002). This is not to say that Bayesian inference can make sense out of nonsensical data, or extract a signal out of noise in which no signal is present – but it is a technique that can at least be attempted in situations that would be difficult to pin down with more conventional methods.

#### EXTRAORDINARY CLAIMS

“We are so far from knowing all the agents of nature, and their diverse modes of action, that it would not be philosophical to deny phenomena because they are inexplicable in the current state of our knowledge. But we must examine them with more scrupulous attention, the more difficult it appears to admit them.” The great pioneer of Bayesian inference, Laplace, wrote those words two centuries ago (Laplace, 1814). More recently, Marcello Truzzi summarised the same idea more succinctly: “an extraordinary claim requires extraordinary proof” (Truzzi, 1978).

The notion that extraordinary claims require extraordinary proof follows directly from Bayes’ theorem. The easiest way to see why is to consider an alternative formulation in terms of odds rather than probabilities. The odds of an event are defined as the probability the event occurs divided by the probability it does not occur. This gives a big number for events that are very likely, and a small number for events that are unlikely. If an unlikely event is described as having odds of “a hundred to one”, this refers to the odds against the event happening: it would be expected to occur on just one occasion for every hundred occasions it failed to happen.

In the Bayesian case, we are interested not in the odds of an event happening, but the odds that a hypothesis is correct. It turns out that the posterior odds, after the evidence has been taken into account, are equal to the prior odds multiplied by the ratio of the likelihoods associated with the evidence. This ratio is usually referred to as the “Bayes factor”, although a less common but more descriptive term is the weight of evidence. Using this latter term, the relationship can be summarised as “*the posterior odds equal the prior odds multiplied by the weight of evidence*”.

This simple formula should be at the forefront of any paranormal investigator's mind. If there is good reason to believe in a hypothesis before any evidence is obtained, then even a small amount of positive evidence will boost confidence that the hypothesis is correct. On the other hand, if the prior odds are initially very low, then a large "weight of evidence" is required to raise the posterior odds to a level where the hypothesis can be taken seriously. In other words, extraordinary claims require extraordinary proof.

#### THE PROBLEM OF SUBJECTIVITY

An "extraordinary claim" is one that has a very low prior probability of being true. But who decides what the prior probability is? This is where the subjectivity inherent in the Bayesian method makes its appearance. Critics often focus on the subjective assignment of priors as being a fatal weakness of the Bayesian approach. But this misses the point: the priors are just the start of the process. The upward or downward trend taken by the probability depends on the data, not on the priors. An upward trend, regardless of its starting point, indicates strengthening belief in a hypothesis, and vice versa. Figure 2 shows how the probabilities quickly lose any memory of their prior values as data is entered into the system. A theoretical result, called the Bernstein–von Mises theorem, shows that in the long term the posteriors always become independent of the assumed priors.

All analysis techniques involve some degree of subjectivity. The unusual thing about the Bayesian approach is that the subjective element is more visible than usual, because investigators have to say what priors they used (Goldstein, 2006). To take an extreme example, a sceptical debunker might analyse a sequence of parapsychology experiments and conclude that the posterior odds of an anomalous effect are just one in a million. But on closer inspection, it might turn out that the sceptical author assigned prior odds of one in a billion. In other words, the weight of evidence shifted the belief in favour of the anomalous hypothesis by a factor of a thousand.

#### HYPOTHESIS TESTING

The real danger in the Bayesian approach comes not in the assignment of priors, but in the definition of hypotheses. In the original coin-tossing example, which was deliberately contrived, there were just two hypotheses: either the coin was normal, or it was double-headed. The real world is rarely as clear cut as that.

In the alternative version of the coin-tossing experiment, we know the coin is normal. Hence, according to the null hypothesis, the ratio of times we would expect to see heads or tails is 50:50. But what is the ratio according to the alternative hypothesis that something anomalous is going on? Is it, as in the

case of the double-sided coin, 100:0 – i.e. that we will always see heads? Or is there just a slight bias towards heads – for example 60:40 or 55:45? There is not just one alternative hypothesis but a whole range of them, and they all need to be taken into account. Unfortunately, not all studies do this.

Another point that is often missed is that a “hypothesis”, in the context of statistical testing, simply refers to a pattern of behaviour. It does not relate to an underlying cause. A hypothesis test can indicate that a particular set of results are anomalous, but it cannot say whether or not a paranormal mechanism is involved. The anomaly may be due to sleight of hand tricks or a flaw in the experimental set up. The same point was made by Edgeworth (1885): after describing “the evidence which the calculus of probabilities affords as to the existence of an agency other than mere chance”, he goes on to say “The calculus is silent as to the nature of that agency – whether it is more likely to be vulgar illusion or extraordinary law. That is a question to be decided, not by formulae and figures, but by general philosophy and common sense.”

The fact that a particular effect may have alternative explanations, some more mundane than others, must be borne in mind when assigning prior probabilities. Both sceptics and believers have a tendency to fall into the trap of the “excluded middle” – assuming that the only possible explanations of the data are chance on the one hand and the paranormal on the other.

An example of this can be seen in Ray Hyman’s Bayesian analysis of an experiment involving Natasha Demkina, who claims to be able to diagnose ailments using “X-ray vision” (Hyman, 2005). While Natasha may genuinely imagine she uses X-ray vision, the concept is scientifically ludicrous. Hyman therefore assigns a very low prior probability to this hypothesis. But the only other hypothesis he considers is that Natasha was using pure guesswork – i.e. that the odds of success were no better than mere chance. But this is equally ludicrous: a person like Natasha does not become an international celebrity simply by blind guesswork. Some people have the intuitive ability to diagnose ailments using just their five senses – in fact this is the standard method of diagnosis in Traditional Chinese Medicine. Assuming this third hypothesis – which Hyman excluded – would be expected to yield results somewhere between the two extremes, exactly as observed.

By making the artificial assumption that there were only two hypotheses, Hyman came close to shooting himself in the foot. He wanted to prove that Natasha did not have X-ray vision, but by limiting himself to the two extreme hypotheses he was only able to do this using rather tortuous arguments. Had he accepted the possibility of a middle hypothesis, he would have had little difficulty eliminating both the extremes.

## BAYESIANS VERSUS FREQUENTISTS

To date, the commonest use of Bayesian inference in paranormal research has been in the significance testing of parapsychological data. This is an area where the Bayesian approach can be compared head-to-head with more traditional frequentist methods (Sturrock, 1997).

Alarming, the two approaches often appear to give conflicting results. This is not as strange as it sounds, however, because they are asking fundamentally different questions. The Bayesian approach asks the question people want to know the answer to: "What is the probability that the observed results are due to a hitherto unknown anomalous effect?" On the other hand, frequentist tests ask a more convoluted question: "What is the probability that the observed results could be produced in the absence of an anomalous effect?"

As a general rule, the Bayesian approach gives a more sceptical answer than the frequentist one. If the null hypothesis  $H_0$  refers to the assumption that nothing anomalous is taking place, then the Bayesian test will often come out in favour of  $H_0$  while the frequentist test rejects it. In some situations, this effect is so pronounced that it is given a name: Lindley's paradox (Lindley, 1957). These extreme cases arise from a misuse of the Bayesian approach, however – the erroneous assumption that there is just one alternative to  $H_0$  when in fact there is a whole range of hypotheses.

Even when care is taken to avoid Lindley's paradox, the Bayesian approach may indicate a lower significance for the anomalous results than a frequentist test. In this case, the Bayesian result is likely to be correct while the frequentist one is misleading (though not incorrect). This is because the frequentist test focuses on  $H_0$ , and may say that the probability of obtaining the observed data based on  $H_0$  is relatively low. But it still may be the case that  $H_0$  is more probable than any of the competing hypotheses – and only the Bayesian approach can bring this out.

This is not to say that Bayesian inference is a magic bullet that can effortlessly produce the single "correct" answer every time. There is still the thorny issue of subjectivity to contend with. Three recent studies – by Wagenmakers et al (2011), Rouder & Morey (2011) and Bem et al (2011) – all applied Bayesian statistics to the same body of parapsychological data, and came to three mutually exclusive conclusions. This does not mean that such studies are worthless, but it does mean that they need to be read very carefully in order to understand the assumptions and procedures that were used.

## WITNESS CREDIBILITY

Paranormal research often involves witness reports of an event  $E$  which appears to support some anomalous hypothesis  $H$  (this may be a UFO, or a ghost, or an out-of-place animal – the details are unimportant). Since the hypothesis is inconsistent with mainstream belief, its prior probability  $P(H)$  is small. On the other hand, the witness may be highly credible – for example a trained observer such as a police officer or member of the armed services. This means that the likelihood  $P(E | H)$  – the probability that the witness would describe the event correctly on the assumption that hypothesis  $H$  is true – is very high.

The general tendency in paranormal research is to focus on the fact that  $P(E | H)$  is high, and ignore the fact that  $P(H)$  is small. But both factors need to be taken into account – a credible witness reporting an extremely improbable event may still be mistaken. This can be brought out using Bayesian analysis.

A textbook example that is often cited involves the witness to a late-night road traffic accident (Tversky & Kahneman, 1982). The witness claims the accident involved a blue cab, implying that it belonged to the smaller of the two cab companies in the city. The larger company operates green cabs, which account for 85% of all the cabs in the city, while only 15% are blue. Tests indicate that the witness is a good one – he can correctly identify the colour of a cab in 80% of cases, while he only gets the colour wrong in 20% of cases. Nevertheless, his testimony is dubious. Application of Bayes' theorem shows that the probability the cab was indeed blue, the colour the witness claimed, is only 0.41, while the probability it was green is higher: 0.59. The credibility of the witness is outweighed by the low prior probability of the cab being blue.

## BAYESIAN SEARCH

There is no limit to the number of alternative hypotheses that can be considered within a Bayesian framework. In a search problem, for example, the target of the search may be at any location within the search area. One way of handling the situation is to divide the area into a grid of  $N$  cells, and define  $N$  mutually exclusive hypotheses corresponding to the target being in each of these cells. There is also a null hypothesis, that the target is not within the search area at all.

A recent paper (May, 2012) described how a software application based on this approach could be used to support a cryptozoological field expedition. Before starting the search, the search team would input prior probabilities for each of the grid cells, based on expectations as to the likely habitat of the species being sought. The display would then superimpose the probability distribution on the search grid, as illustrated in the upper part of Figure 3.

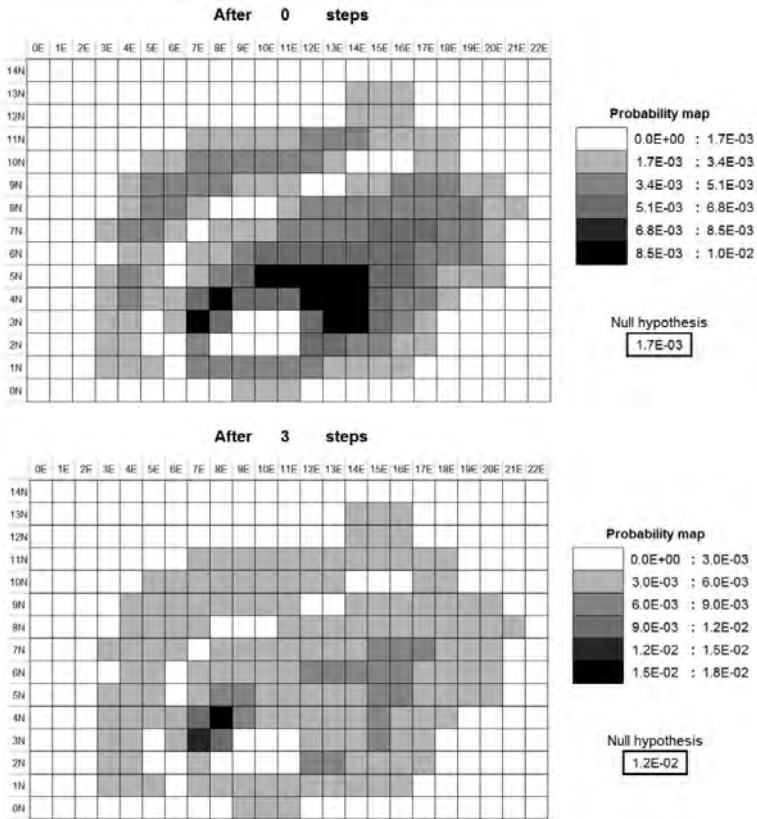


Figure 3: Bayesian search software

The obvious first step is to investigate the cells with the highest prior probabilities. Depending on the evidence found, Bayes' theorem can then be used to update the prior probabilities to posteriors. This will change not just the probability of the cell that has been searched, but the whole probability map. Evidence that the target is nearby reduces the probability that it is in more distant cells, while failure to find evidence in one particular location increases the probability that it is somewhere else. Hence the probability map changes with progressive search steps, as illustrated in the lower part of Figure 3.

Tools of this kind are not meant to do the search team's thinking for them, but to aid their thinking in a way that may not be intuitively obvious. Having conducted an initial analysis of the area to produce a prior probability map (which all search teams will do, whether or not they think of it in these terms),

there is a natural tendency to cling to this prior belief even as evidence mounts up against it. The software tool indicates when it is time to change tack and start looking in a different part of the woods.

## BAYESIAN BELIEF NETWORKS

The discussion so far has assumed that there is a direct link between the hypotheses of interest and the observable data. But this is not always the case. A classic example involves military threat assessment, where the user needs to choose between the hypothesis that a particular aircraft is hostile and the hypothesis that it is friendly. In this situation, there is only an indirect link between the desired result and the various parameters that can be observed.

One way to deal with the situation is to use a Bayesian Belief Network, or BBN (Krieg, 2001). A BBN can be viewed as a series of interconnected nodes, where each node is an instantiation of Bayes' theorem. It has its own set of hypotheses, and pre-assigned prior probabilities associated with these hypotheses. As an example, a simple aircraft classifier might consist of three nodes. One of these nodes relates to *aircraft type*, and some of the raw data – such as observed size and shape – would feed into this node. Other data, such as altitude, course and speed, would feed into a second node relating to *aircraft behaviour*. The posterior probabilities emerging from these two nodes would then be used as data feeding into the third and final node, which addresses the question we are actually interested in: “*Is the aircraft about to drop a bomb on us?*”

BBNs are used in a range of applications, from military ones of the type just discussed to medical diagnosis. The latter is particularly suited to this approach, because it typically involves combining numerous snippets of heterogeneous data to form a coherent picture. For this reason BBNs are increasingly common, not just in conventional medicine but also complementary disciplines such as Traditional Chinese Medicine (Lukman et al, 2007).

Many types of paranormal research also involve “combining numerous snippets of heterogeneous data to form a coherent picture.” Figure 4 shows a hypothetical network that might be used by an investigator following up a witness report of a ghost sighting.

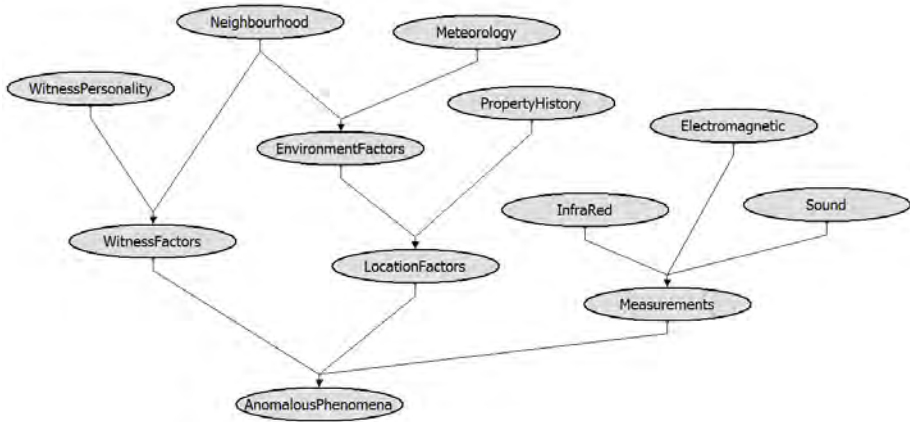


Figure 3: BBN applied to the investigation of a ghost sighting

This example was produced using a Microsoft application called MSBNx (Kadie et al, 2001). It is intended for illustration only – in reality a BBN applied to this situation would need to go into a much greater depth of detail than the example shown here. But the basic principle is clear enough. In order to get to the issue of interest – “Does the evidence indicate the presence of anomalous phenomena?” – a whole range of factors have to be taken into account, such as the credibility of the witness, the location and history of the property, and any on-site measurements that have been made. By breaking the situation down into a network of relatively simple nodes, it is possible to turn an initially intractable problem into a tractable one.

## CONCLUSIONS

Bayesian inference provides an approach to scientific investigation that allows subjective beliefs to be handled in a mathematically rigorous way. As such, it is particularly suited to the analysis of potentially anomalous phenomena. Several researchers have applied the technique to parapsychological data, but there are many other areas of paranormal research where it could be of use, particularly if coded up in the form of a “user-friendly” software application.

The Bayesian approach is not a magic bullet – it cannot make sense out of nonsense. Its ability to deal with subjective beliefs is one of its great strengths, but also a weakness. Three recent studies applied Bayesian methods to the same data and came to three different conclusions. This is not to say that such studies are worthless, but they do need to be read carefully to understand the precise assumptions and procedures that were used.

First and foremost, the Bayesian approach is a way of thinking about the world: "the posterior odds of a hypothesis equal its prior odds multiplied by the weight of evidence". Even without going into any mathematical detail, this is something that all paranormal researchers should keep in mind.

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# PARANTHROPOLOGY: TOWARDS A PARAPSYCHOLOGICAL ANTHROPOLOGY

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This paper will explore the development of an approach to the study of paranormal experiences, phenomena and beliefs that integrates the findings and methodologies of both anthropology and parapsychology. This is not necessarily a new idea, having precedents throughout the history of anthropology (Schroll and Schwartz, 2005; Hunter, 2009; Luke, 2010; Laughlin, 2012), and beginning with the efforts of Andrew Lang in the late nineteenth century to promote what he termed 'comparative psychical research.' Lang saw distinct similarities, across both time and space, in narrative accounts of paranormal experiences and phenomena, which led him to conclude that something more than mere 'hallucination,' 'delusion' and 'trickery' was going on. He wrote, for instance, of similarities in descriptions of apparent spirit manifestations cross-culturally:

[...] from the Australians [...] in the bush, who hear raps when the spirits come, to ancient Egypt, and thence to Greece, and last, in our own time, in a London suburb, similar experiences, real or imaginary, are explained by the same hypothesis. No 'survival' can be more odd and striking, none more illustrative of the permanence, in human nature, of certain elements. (Lang, 1894, p. 19).

Lang considered these cross-cultural similarities to be particularly important observations (not least because they seemed to provide independent, cross-cultural, evidence for certain phenomena), and as such was critical of both his contemporaries in anthropology and members of the Society for Psychical Research (of which he was also a member), for not sharing ideas and insights: the anthropologists were unwilling to take the literature of psychical research seriously, and the psychical researchers were unwilling to investigate accounts of ostensibly paranormal phenomena documented in the ethnographic literature. It wasn't until the twentieth century that a real cross-pollination of ideas finally began to take shape.

In 1968 a posthumously published book by Italian philosopher and anthropologist Ernesto de Martino (1908–1965) presented a synthesis of the findings of anthropology and parapsychology. One of the most significant observations de Martino made was that laboratory investigations of psi involve a

complete reduction of the emotional and environmental contexts within which psi experiences naturally occur. He wrote that 'in the laboratory, the drama of the dying man who appears [...] to a relative or friend, is reduced to an oft repeated experiment – one that tries to transmit to the mind of a subject the image of a playing card, chosen at random.' This, he suggests, represents 'an almost complete reduction of the historical stimulus that is at work in the purely spontaneous occurrence of such phenomena' (de Martino, 1968). In other words; the drama of real life is ignored in the laboratory experiment. It is precisely at this juncture that the ethnographic methodology of anthropology succeeds in illuminating the nature of the paranormal: through documenting its occurrence in the midst of the social drama that allows psi to manifest in its most elaborate forms. De Martino's contribution to the development of an anthropological approach to the paranormal was an important one, though it is very often overlooked by contemporary researchers.

Significant contributions to this developing trend in anthropology were later published in the book *Extrasensory Ecology*, edited by Joseph K. Long (1974), inspired partly by Long's own unusual experiences while conducting fieldwork in Jamaica, and in an important edited volume published by the Parapsychology Foundation in the same year (Angoff and Barth, 1974). Both books brought together articles from leading theorists in anthropology and parapsychology and were groundbreaking in their presentation of a seriously reasoned anthropological evaluation of the evidence from parapsychology. Both books took seriously the implications of the parapsychological data for theory development in anthropology, and were the seeds for what would eventually emerge as the anthropology of consciousness (Schroll and Schwartz, 2005).

The *Society for the Anthropology of Consciousness* was established in 1989 as a member of the American Anthropological Association, and has subsequently developed as an anthropological sub-discipline with a stated interest in states of consciousness and consciousness studies, shamanic, religious, and spiritual traditions, psychoactive substances, philosophical, symbolic, and linguistic studies, and anomalous experiences (<http://www.sacaa.org/>). The roots of the anthropology of consciousness go right back to the early pioneering work of E.B. Tylor and Andrew Lang, whose interests in the experiential origins of supernatural beliefs were clear precursors to the movement.

The anthropology of consciousness also has roots in slightly more recent trends in intellectual thought, including specifically transpersonal psychology (cf. Lajoie and Shapiro 1992), and, slightly later, transpersonal anthropology (Schroll and Schwartz, 2005, p. 6-24). Transpersonal anthropologist Charles Laughlin defines transpersonalism as 'a movement in science towards seeing experiences had in life, that somehow go beyond the boundaries of ordinary ego-consciousness, as data' (Laughlin, 2012, p. 70-74). Such experiences may

include any number of ostensibly paranormal experiences and alterations of consciousness, as well as including more mundane (though not necessarily any less meaningful) experiences such as dreaming, *deja vu*, coincidences and so on.

Typical methods in the anthropology of consciousness include active and immersive participation in rituals and other performances, and a deliberate attempt to attain the states of consciousness that are important to the particular society under investigation; this might include, for example, consuming culturally significant psychoactive substances, and participating in other forms of consciousness alteration. Indeed, Charles Laughlin has defined the transpersonal anthropologist as one who is 'capable of participating in transpersonal experience; that is, capable of both attaining whatever extraordinary experiences and phases of consciousness enrich the religious system, and relating these experiences to [...] patterns of symbolism, cognition and practice found in religions and cosmologies all over the planet' (Laughlin, 1997). Laughlin's approach has gone on to inspire other anthropologists, notably Michael Winkelman, who has taken a biogenetic structural approach to shamanism (Winkelman, 2000), and has put forward the suggestion that the anthropological debate over magic might benefit from parapsychological insights - essentially putting forward the possibility that magical systems around the world might be tapping into psi for their efficacy (Winkelman, 1982).

Other approaches to the study of the transpersonal and paranormal within an anthropological framework have also developed. Anthropologist Patric Giesler, for example, has proposed a methodology, which he terms 'psi-in-process,' for investigating the social and cultural factors involved in the manifestation of psi phenomena, as and when they occur in the field. Such an approach attempts to overcome the limitations of classical laboratory based parapsychological research by conducting experiments in the field, as de Martino suggested, with minimal reduction of the natural environmental setting. Giesler's own research has, for example, investigated psi phenomena in the context of Brazilian Umbanda spirit possession rituals using standard parapsychological tests. For example, in an experiment with mediums from the Afro-Brazilian groups Candomble, Caboclo and Umbanda, Giesler modified Helmut Schmidt's random number generator PK experiments using culturally meaningful target symbols. Giesler's experimental results were significantly above chance and were suggestive of PK ability (Giesler, 1985). Giesler's approach takes a significant step away from anthropology's more traditional bracketing out of questions of ontology, common in phenomenological and social-scientific approaches to supernatural beliefs. He writes:

[...] one of the purposes of anthropology is to explain the ontology, development, and function of the beliefs, practices, and claims of

magico-religious experiences [...] it should assume that psi could exist and then proceed ethically on that assumption. (Giesler, 1984, p. 287-328)

Another particularly important book in bringing about a new anthropological approach to the paranormal, and specifically in taking the extraordinary experiences of ethnographers engaged in fieldwork seriously, was David E. Young and Jean-Guy Goulet's *Being Changed by Cross-Cultural Encounters* (1994). In their introduction Young and Goulet suggest that their book attempts to do three important things:

(1) provide personal accounts by anthropologists who have taken their informants' extraordinary experiences seriously or who have had extraordinary experiences themselves, (2) develop the beginnings of a theoretical framework which will help facilitate an understanding of such experiences, and (3) explore the issue of how such experiences can be conveyed and explained to a 'scientifically-oriented' audience in such a way that they are not automatically dismissed without a fair hearing. (Young and Goulet, 1994, p. 12)

A more recent development is the notion of paranthropology (see Hunter, 2012 and Hunter, 2012b for further elaboration), a term first coined by the linguist Roger W. Wescott (1925-2000) in Joseph K. Long's book *Extrasensory Ecology*, which, in many ways, takes these ideas and expands upon them through the incorporation of parapsychological insights. Anthropologist Fabian Graham differentiates paranthropology from more traditional approaches to the anthropology of religion according to the way in which the two approaches relate to the objects of religious and paranormal beliefs. While the anthropology of religion has tended to focus primarily on systems of religious belief, bracketing out or negating the ontological status of the objects of such beliefs, a paranthropological approach accepts the possibility that the objects of supernatural beliefs may have some form of independent ontological reality, and proceeds from there. He writes:

...paranthropology [defines] itself in relation to the phenomena themselves, and not [in relation] to the belief systems, scientific or religious, that have evolved to support the phenomena. (Graham, 2012, p. 20-21)

Paranthropology, therefore, takes a bold step in attempting to interpret systems of supernatural belief from the perspective of those who subscribe to them. In studies of spirit mediumship, for example, a paranthropologist will take seriously their informants' beliefs about, and experiences of, spirits in an attempt to gain a more rounded appreciation of what such beliefs and

experiences mean (Blanes and Espirito Santo, 2013; Hunter and Luke, 2014 for ethnographies that attempt to do this). Further to this, and in line with the immersive approach recommended by Edith Turner, and transpersonal anthropologists such as Charles Laughlin, the paranthropologist will attempt to participate, as far as possible, in the rites, rituals and performances under study in order to develop an 'insider' perspective (Bowie, 2013). A truly rounded study of spirit possession, for instance, cannot be complete without an appreciation of the experiential component, which certainly plays a central role in the development of traditions of practice and belief. Such an approach might also come under what parapsychologist David Luke calls 'first-person parapsychology' (Luke, 2012).

#### PARAPSYCHOLOGY'S MAIN FINDINGS AND THEIR RELATION TO ANTHROPOLOGY

A criticism that is often leveled against parapsychology is that over the last 130 years, since the Society for Psychical Research was established in 1882, the discipline has been unable to formulate any definite conclusions with regard to the nature of the phenomena it investigates. Strictly speaking, however, this is not the case. Indeed, parapsychological research has resulted in the development of several key concepts, including the significant role of altered states of consciousness, mindset and culture in the production of psi phenomena. This last section will present some of parapsychology's main findings with an aim to demonstrating how they can help illuminate the ethnographic data, as well as showing how ethnographic data can supplement parapsychological research.

##### 1) Altered states of consciousness

Potentially, parapsychology's most important finding is the recognition of the ubiquitous role of altered states of consciousness in the experience of the paranormal (Kelly and Locke, 1999; Luke, 2011). Frederic Myers, a founding member of the Society for Psychical Research, was well aware of this fact. In his classic *Human Personality and Its Survival of Bodily Death* (1903), Myers devotes entire chapters to discussions of various altered states of consciousness, including somnambulism and sleep, which he considered to be intimately related to the types of experiences reported by mediums. Early psychical researchers also recognised the fact that many paranormal experiences occurred during sleep, and near-sleep, states (sleep being perhaps the most common form of altered consciousness). The evidence from the Ganzfeld studies, and from the sleep ESP studies conducted by Stanley Krippner and Montague Ullman in the 1970s, also point towards the central role of altered states in the mediation of psi experiences.

The significant role of altered states of consciousness with regard to psi is also attested to in the anthropological literature, most notably in the literature on shamanism and spirit possession. The anthropologist Erika Bourguignon, for example, provides ample evidence that altered states of consciousness are near universal, and that in the majority of cases they are thought to provide direct access to the spiritual realm (Bourguignon, 1973, p. 3-38). Paranthropologists should, therefore, be aware of the role of altered states of consciousness, and techniques for the alteration of consciousness, in their investigations of paranormal beliefs, practices and experiences in the field.

## 2) Mindset and cultural setting

When we consider the types of paranormal experiences recounted by anthropologists engaged in ethnographic fieldwork, Schmeidler's sheep/goat study (1943), and Batcheldor's experiments with table-tipping (1984), prove particularly insightful because of their emphasis on the role of mindset and belief in the manifestation of psi phenomena. Batcheldor writes of his research on the role of belief in the induction of psychokinesis:

What seems to matter is the balance of belief over doubt at the very instant when a PK event is about to occur, rather than the long-term attitude of belief or doubt that exists before the sitting commences. Thus, it is a far cry from a vague general belief in the paranormal to believing that the table in front of you is going to levitate right now. (Batcheldor, 1984)

The types of paranormal phenomena reported by anthropologists are far more intense than those investigated by parapsychologists in laboratory settings: Bruce Grindal's experience of a corpse re-animating during a divination session (Grindal, 1983), or Edith Turner's witnessing the extraction of a malevolent spirit during a healing ceremony (Turner, 1998), are of a much greater magnitude of weirdness to the psi effects documented in the laboratory.

There are, however, significant and revealing differences between the contexts in which such phenomena arise in the field, and in the laboratory. Perhaps chief amongst these differences is the culture within which they occur. Grindal and Turner's experiences arose while immersed in cultures that both expected and intended such phenomena to occur, while laboratory based psi experiments are conducted in a culture that is, on the whole, averse to the notion of paranormal phenomena. If Schmeidler and Batcheldor's work on the impact of belief on psi functioning is correct, then the dominant attitudes within a given culture must surely have a significant effect on the strength of psi phenomena, and the forms in which they manifest. Structuralist anthropologist Claude Levi-Strauss sums

this up nicely in a discussion of the efficacy of magical cursing and healing. He writes:

There is [...] no reason to doubt the efficacy of certain magical practices. But at the same time we see that the efficacy of magic implies a belief in magic. The latter has three complimentary aspects: first, the sorcerer's belief in the effectiveness of his techniques; second, the patient's or victim's belief in the sorcerer's power; and, finally, the faith and expectations of the group, which constantly act as a sort of gravitational field within which the relationship between sorcerer and bewitched is located and defined. (Levi-Strauss, 1986, p. 168)

## PSI AND CULTURE

Psi and cultural expectation appear, therefore, to be intimately interconnected. The field of transcultural psychiatry, being the study of mental illness across different cultures, provides a useful illustration of the influence of culture on consciousness (and *vice versa*). Transcultural psychiatry recognises that illness is a culturally constructed category, and that different cultures recognise the signs of mental illness in different ways. In other words, different cultures possess different types and expressions of mental illness. There are, as a consequence, many so-called 'culture-bound disorders' (Kiev, 1972, p. 78-108), with symptoms that only occur within particular cultural contexts. A classic example of such a culture-bound disorder is an unusual Malaysian ailment known as *koro*, which refers to a particular disorder, recognised in the DSM-IV as a culture-bound illness, whereby a man becomes convinced that his genitals are shrinking, or retracting into his body. *Koro* is a specific culturally recognised symptom of underlying mental distress. The physical symptoms are the outward expression of disorders of consciousness. The European disease known as hysteria during the nineteenth century also provides a good example. Many of the symptoms observed in hysteric patients simply do not occur in the present day; examples include rigidity of the body, convulsions, faintness, nervousness, sexual desire, insomnia, and many others, but at the time were culturally recognised bodily expressions of underlying mental distress (Hustvedt, 2011). In his book *Crazy Like Us: The Globalization of the Western Mind* (2011), Ethan Watters describes the concept of culturally recognised symptom pools for mental illnesses which allow them to take on distinctive, often significantly different, cultural guises. He writes:

People at a given moment in history in need of expressing their psychological suffering have a limited number of symptoms to choose from [...] When someone unconsciously latches on to a behaviour in the symptom pool, he or she is doing so for a specific reason: the person is taking troubling emotions and internal conflicts that are

often indistinct or frustratingly beyond expression and distilling them into a symptom or behaviour that is a culturally recognised signal of suffering. (Watters, 2011, p. 34)

Now, I am not trying to suggest that psi phenomena are the product of mental illness, rather I am suggesting that both psi and mental illness are aspects of consciousness and that their expression is fundamentally affected by the expectations, categories, and beliefs of the people experiencing and observing them. Just as the symptomatic expression of mental illnesses vary across cultures, drawing from culturally recognised symptom pools, so too do expressions of psi. This would explain why, for instance, the ritual healing practices of the Ndembu in Zambia (Turner, 1998), utilise different symbolic systems and procedures to those employed by, for example, psychic surgeons in Brazil (Greenfield, 2008), and yet both are efficacious. Or, why manifestations of spirit mediumship practices and experiences vary in their cultural expression, and yet retain underlying core similarities (Hunter and Luke, 2014).

## CONCLUSIONS

The ideas presented in this paper appear to coalesce into something resembling a coherent model: a model that emphasises psi as a feature of consciousness and that shows the role of culture in modulating the expression of psi, perhaps something like a filter or lens. I feel that it is important, however, to highlight the incompleteness of this model, particularly with regard to our relative ignorance of the fundamental processes involved. It is also important to note that the factors outlined here (the role of belief and intention, the use of altered states of consciousness, and so on), are only a few of potentially countless factors. Indeed, it seems that it would be almost impossible to gain a complete picture of what is 'really going on' (van de Port, 2011) when it comes to the issue of psi and the paranormal without a great deal more research, both in the laboratory and in the field. Nevertheless, these initial observations are important ones and should help to point us in the direction of an anthropological approach to the paranormal that is inclusive of the data and research methods of parapsychology, while also preserving the ecological conditions that anthropology is best suited to study.

In concluding this short paper, it is my hope that the reader will have found something of interest in the preceding pages, and that they might be inspired to further their own inquiries into the nature of the paranormal, not from a culturally isolated perspective, but rather from a holistic cross-cultural perspective. This, combined with a multi-disciplinary approach, I believe, is the way forward: it is our route towards engaging and understanding the mysteries of the paranormal, and to providing us with fresh insights into the nature and meaning of human existence.

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# INTERCONNECTIONS: DIFFERENCES AND SIMILARITIES BETWEEN UFOS AND OTHER ANOMALOUS PHENOMENA

*Robert Moore*

## ABSTRACT

This article attempts to demonstrate that the reported attributes of at least some "UFO" events are comparable with other classes of "anomalous" phenomena; most notably those with a "psychical" or "paranormal" aspect. However, it also ponders the question as to whether such shared attributes either infer that UFOs have a "supernatural" origin...or merely suggest that identical prosaic causes underlie other seemingly related "unexplained" occurrences.

Even in 2013 it remains highly controversial to suggest any link between UFOs and other classes of anomalous phenomena; the conception that UFOs are a physical manifestation distinct from other "paranormal" experiences still reigning supreme within "Ufology". Nonetheless, many notable researchers, ranging from Jenny Randles (Randles and Warrington, 1979) Manfred Cassirer (Cassirer 1988, 1993) to John Keel (Keel, 1970) have provided numerous examples of psi-like phenomena seemingly manifesting in the context of so-called "high strangeness" UFO events. It therefore seems prudent to at least examine the possibility of such connections, given it may provide important clues to the true nature of at least some "UFO" incidents.

## "THE DAMNED" - THE COMPOSITION OF ANOMALOUS PHENOMENA

But what is actually encompassed by the term "anomalous phenomena"? Notable compilations of reputed "unexplained" events have been made by Fort (1917), Rickard and Michell (Rickard and Michell, 1977) and Welfare and Fairley (Welfare and Fairley, 1980). While each differs notably in content and emphasis, they infer that the corpus of anomalous experiences potentially of relevance to this article covers the following:

- Exotic precipitations - "ice falls", "blood rains" to "fish falls"
- Psychic abilities - clairvoyance, telepathy, psychokinesis and precognition
- Ghosts and poltergeists

- Religious visions - encounters with angels, demons, saints and gods
- Encounters with mythic beings - Black Dogs, faeries, angels and demons
- Cryptids - a term encompassing anything from lost, believed extinct animals to out of place animals ("alien big cats") to "monsters" (Bigfoot and the Loch Ness Monster)
- Crop circles and other transient anomalous ground traces made by seemingly invisible agencies

An early commentator on anomalies, Charles Fort, coined the term "The Damned" as a generic label for such events. While documented for many centuries, the scientific community have generally downplayed, dismissed or ignored claims of this nature; hence Fort's provocative attribution. While conventional wisdom attributes this marginalisation to an academic consensus deeming such events to have prosaic explanations, some commentators believe their exclusion from informed discourse results from entrenched orthodox thinking; one that automatically rejects data inconsistent with current scientific paradigms, regardless of quality or merit (Fort 1917, Sheldrake, 2012).

But what specifically indicates that UFOs have any connection with these other classes of anomalous phenomena?

#### CULTURAL SIMILARITIES

On a cultural level the general conceptions of many anomalies are dominated by a singular populist theory, i.e. ghosts are generally seen as "spirits of the dead" while UFOs are thought to involve observations of "extraterrestrial spacecraft".

In the main, such theories tend to be poorly supported by the dataset they are advocated to explain, being associated with numerous paradoxes. For example (in relation to ghosts) this is represented by questions such as "where do ghosts get their clothes from?" or (in regard to UFOs) "why are they so shy given they've travelled so far?". This logical disconnect has led to the proposition of alternative explanation schemas. In general such amended concepts generally fail to displace the culturally preferred paradigm; examples include the earthlights theory for UFOs (Devereux, 1989), electrical hypersensitivity (Budden, 1998) and the "recording" hypotheses in regard to ghosts (i.e. Rae Heath, 2005).

Most (if not all) anomalies feature a large signal-to-noise ratio. Most apparitions, for example, can be traced to natural occurrences such as hallucinations, misperception of natural phenomena, optical illusions or hoaxes (Hanning, 1976; ASSAP 2013). Nonetheless, a residue of cases appears difficult to explain in prosaic terms. In regard to UFOs, the vast majority of are also explicable, in this instance as misperception of natural objects and man-made

phenomena...and hoaxes! There is also a residue of hard-to-explain cases, generally cited as consisting of anything from 15% to 5% of all UFO sighting accounts (Hendry, 1980; Randles, 1979).

Many classes of anomalous phenomena have a notable psychosocial dimension in the sense that they have an apparent association with periods of cultural stress. For example, it is notable that many ghost origin myths often connect their associated manifestation(s) to a historic "time of trouble" such as the Reformation, the English Civil War or the endemic smuggling that blighted eighteenth-century England. They may, additionally, be associated with past reputed local tragedies such as a murder, execution or personal mishap. It must be equally noted that many such apparition origin stories are, on further investigation, subsequently revealed to be fictitious. Past phases of claimed aerial anomalies are often associated with times of notable social stress, often manifesting during the prelude to war. In this context it is therefore notable that the majority of "classic" UFO events occurred during the Cold War (1947-1989).

Furthermore, many types of anomalies may be seen, at least conceptually, to possess a *symbolic* dimension; apparitions (for example) subliminally representing ideals such as wandering "lost souls", the afterlife, "unfinished business" and the past, while cryptids signify a fear of wild nature and the "monsters" that lurk within it. Similarly, the psychosocial concept of UFOs could symbolically encompass ideals such as modernity, atomic energy and space travel.

In moving on to the subject data itself, it is interesting to note that virtually all classes of anomalies relate to transient events based on anecdotal accounts. Many occur at night and (less often) during the day. All also exhibit a "staggered" ratio of strangeness, the majority involving "low strangeness" incidents; noises, fleeting glances and kinetic phenomena in relation to apparitions, or simple "lights in the sky" in regard to UFOs (Hendry, 1980). In many cases the most exotic events relate to encounters with an entity of some description.

Many types of supposed anomalies are typified by a corpus of "iconic" photographs often promoted by their advocates as demonstrating their physical reality. Unfortunately, most (if not all) are potentially explicable, often as hoaxes, or remain doubtful in terms of depicting a unique manifestation. In any event, what photographs that do remain are poor quality and, at best, inconclusive (i.e. Rickard and Kelly, 1981).

The nature of physical evidence associated with many anomalous phenomena, while different in form, is oddly similar in context, usually involving alleged environmental effects and indirect damage caused by an anomalous presence

but rarely (if ever) manifesting persistent anomalous artefacts. On the other end of the objectivity spectrum, many anomalous phenomena are commonly and distinctively associated with the ability to suddenly vanish. As with ghosts and other classes of supposed supernatural beings a surprising quantity of UFO entity reports reportedly occur within a domestic setting, most notably the witness's bedroom – a circumstance inspiring John Keel to coin the term “bedroom invader” to describe such events (Keel, 1970).

While alleged UFO entities are generally presented as representing flesh-and-blood extraterrestrials, many such reports feature psychical elements. Some cases, from Risley (see below) to Kelly Hopkinsville (Hynek, 1972; Nickell, 2006), allude to entities moving in a “floating” motion, comparable to that described in ghost observation, while others - notably the 1974 Aveley abduction claim (Collins, 1978) - contain described perceptions comparable to out-of-body experiences (OOBEs). It is equally commonplace for UFO entities to reportedly communicate with a form of “mind speech” matching the popular conception of telepathy, a claim appearing in cases diverse as George Adamski's claimed 1952 encounter with a “Venusian” (Adamski and Leslie, 1970) to contemporary abduction claims (Hopkins, 1982).

For brevity, two cases out of many must stand as examples where UFO-like phenomena manifest in an ambiguous manner, both in terms of classification and in regards to possessing both physical and subjective aspects:

At Livingston, Scotland at 1015 hours on 9 November 1979, a forestry worker encountered an exotic form resembling a hovering rimmed sphere (or hemisphere) with elaborate surface features compared to “rotors” and “portholes”, with portions reportedly fading in and out of view. The participant was thereafter approached by two spherical objects mounted with spikes and lost consciousness. Possibly connected physical traces were later found. While the incident is generally classified as a UFO event, the “object” was never seen either to land or take off (Campbell, 1982). From a sceptical perspective the traces have been ascribed various prosaic origins, with the “craft” being accounted for in terms of an exotic hallucination. In this regard it is notable that the Livingston UFO is comparable to the Jaggeroth spaceship featured in the Doctor Who episode “City of Death” initially broadcast in September and October 1979 (Slater, 2010).

The Risley, Cheshire entity event, occurring at 2330 hours on 17 March 1978, related to the observation of a dull silver-coloured 7-foot being with outstretched arms protruding oddly from its “chest” and luminous eyes emitting beams of light. The entity reportedly moved in an impossibly stiff gait and reputedly walked through a fence, leaving it undamaged. The witnesses' car thereafter experienced seemingly anomalous damage to its electrical fittings.

Later, allegations were made that this event was instigated by a rag week hoax involving an individual dressed in a fireproof suit (Randles and Wetnall, 1978). Such a case, while not specifically related to either class of anomalous experience, share similarities with both ghosts and UFO entity encounters.

Such references to paranormal manifestations in high strangeness UFO cases are far from unique. Both classic British 1970s era UFO entity claims and contemporary abduction narratives in general heavily feature "mind speech", events comparable to out-of-body experiences and aspects of incorporeity; from "floating" exhibited by both entities and experiencers to claims that greys aliens can pass through walls. As noted above, even the Risley entity reputedly passed through a wire fence, while the "UFO" recounted in the Livingston incident reportedly phased in and out as existence as it was observed.

It also remains commonplace for investigators to discover that high strangeness UFO witnesses are often the focus for psychical experiences (Randles and Warrington, 1979), psychical sensitivity often being cited as the rationale for certain people being more prone to observing ghosts than others.

In many UFO cases the suspicion lurks that even the most seemingly physical incidents have paranormal overtones. The now famous "Saucer Sam" case that involved a British jet fighter pilot observing a highly reflective disc over Germany on 30 July 1952 (reportedly also detected by radar) was only seen by one of the four pilots present, the witness later stating that "I was meant to see it". (Clarke, 2012)

But, to be balanced, we must also acknowledge the differences....

To begin with, the form and context of anomalous experiences are significantly different. The term "UFO" is used to define claimed observations ranging from anomalous aerial phenomena such as archetypically shiny discs and triangles "from elsewhere" up to figures with a distinctive non-human appearance clad in attire suggestive of technological sophistication. This is, of course, notably distinctive from apparitions, which involve observations of diffuse figures or apparent individuals clad in conventional or archaic clothing. In most instances ghosts have a conventional human form, although observations of spectral animal and vehicles, most notably phantom aircraft, have occasionally been alleged (see Clarke, 1999 for an example of the latter).

A few classic apparitions describe apparitional forms comparable with those recounted in some UFO accounts, most notably Swifte's 1817 reputed encounter in the Tower of London with a diffuse "glowing pillar" (Swifte, 1817). Additionally, the visages of some ghosts reportedly exhibit startling mutilations, most classically the absence of a head. UFO entities rarely exhibit such features

although some reported exhibit abnormalities comparable to a badly drawn cartoon, as seemingly was the case with the “being” reportedly observed at Risley.

But are such differences more symbolic and contextual rather than actual? It is pertinent at this juncture to note Paul Devereux’s observation that the populist range of British apparitional forms are seemingly archetypal (even stereotypical) in form: the monk, the white lady, the cavalier, the black dog, etc. He further makes the observation that many apparitions generally have origin myths dating back no further than the Early Modern era, a time of greater literacy. It is notable that the concept of “historical ghost” has conceptually become the norm, in the wake of educational reforms that have propagated a greater awareness of the past (Devereux, 2001).

Another, equally notable, difference is that apparitions are repeat events and place-centred and tend to involve the same reputed entity over a long period of time. UFOs are transient and spontaneous, the same UFO rarely being seen again at the same locus (or anywhere else for that matter). Nonetheless, there are exceptions: most notably the “VAWCON” incident that reportedly occurred in November 1978 at Huntington, Cambridgeshire. This pertained to the claimed observation of a detailed low-level “UFO” with distinctive surface features, most notably a “probe” and what resembled vectored thrusters akin to those used on Harrier jump-jets. Additionally, one portion of the “UFO” was inscribed with symbols and the word VAWCON. This “UFO” was seen several times over period of a week at the same location. In some ways, this case represents a “UFO” with some of the popular attributes of a ghost, e.g. being repeatedly observed in a specific location (National Archives, released 2005).

While ghosts are rarely communicative and reportedly ignore the presence of any observers, UFO entities described in CE3 and CE4 events are more responsive to their observers, either reacting in fear or initiating communication. UFO entities are, in fact, more comparable with mythic-type entities such as phantom hitchhikers, angels, faeries and demons than ghosts, in that the entity concerned is both willing and capable of communicating with “observers” (McClure, 1983; Goss; 1984). In a few cases the dividing line between alien entities and “mythic” beings is very thin – most notably represented by the protracted 1970s era so-called “Stranger in the City” case that involved a single Sheffield resident and several psychically perceived anomalous entities. These figures were depicted as a fusion of angelic beings and UFO entities, with even their supposed names (Mik-Ael, Uriel and Aroniel) being comparable with angels featured in biblical sources and ritual magic texts. It is notable that the quality and depth of information issued both by UFO entities and anomalous/mythic beings are generally vague and generic, with the

Leeds entities issuing doomsday prophecies that subsequently never came to pass (Watson, 1989).

#### ANOMALIES AS A FORM OF "JEALOUS PHENOMENA"

Relevant to this discussion is Robert's Sheaffer's concept of "jealous phenomena", one inspired by the allegorical behaviour attributed to animals in classical and medieval era bestiaries. In terms of paranormal phenomena, it pertains to the reported elusive, evasive behaviour of cryptids, UFOs and similar manifestations, along with the difficulty to acquire definitive proof for their objective existence. This is in stark contrast with natural phenomena, for which proof is easy to acquire and their existence easy to demonstrate. Sheaffer concludes that these "jealous" aspects suggest such anomalies do not represent a novel phenomenon, merely events with prosaic causes, given an inflated status by misperception, delusion and fabrication (Sheaffer, 1986).

While sceptics feel this "jealous" aspect supports the notion of a mundane solution, other commentators (most notably John Keel and Jacques Vallee) believe it is symptomatic of their exotic origin; in essence their wilfulness is an aspect of their paranormal origin. Both Keel and Vallee claim such anomalies represent a control system, aimed at manipulating belief for the benefit of an exotic agency. Keel cites ultraterrestrials, supposed supernatural beings from another dimension, as the perpetrators, while Vallee is more circumspect – allowing for the possibility of a secret, powerful human agency with a global reach (Keel, 1970; Vallee, 2008).

#### THE NATURE OF RELATIONSHIPS WITHIN ANOMALIES

At this juncture we must ponder the reasons for any connections between high strangeness UFO events and other anomalies. One could deny there is any connection and stick to the concept that any apparent links are spurious. Traditionalists from either camp would stress the differences and ignore or gloss over the similarities – "ghosts are ghosts and UFOs are UFOs!" An ETH advocate may equally suggest PSI manifestations associated with UFO entities merely indicate they have access to highly developed "mental sciences".

But, if so, what of the similarities that manifest throughout many significant UFO incidents? We could rule that both are connected – but only because UFOs and other anomalies have subjective origins and use the same neurological mechanisms and processes to manifest. While there has been some success in identifying possible prosaic causative factors the underlying mechanism remains elusive; but it is notable that many of the events cited above involve only one protagonist.

While we may have comparable events within different classes of phenomena it does not figure that all reports have the same causative factors –after all, not all UFO incidents are instigated by Chinese lanterns, and not all apparitions result from the activity of hoaxers. Hence, for theoretical purposes it may be productive to define all anomalous events – not only UFOs – as either *low strangeness* events likely to have a variety of mundane causes or as *high strangeness* incidents that are difficult to account for in prosaic terms.

Likewise, relationships between different classes of reputed anomalies are possible, regardless of their actual reality status. Hoaxing, for example, has been a major factor in all classes of phenomena, from crop circles and UFO events to ghosts. Where xenonormal processes are involved they could be generating a common class of hallucinatory experience classified as either “paranormal” or “ufological” based on arbitrary culturally-defined parameters. Of relevance here is Randle and Warrington’s “spheres of influence” theory (Randles and Warrington, 1979) and Persinger’s geomagnetic hypothesis (Persinger, 1977), both of which advocate exotic natural effects capable of generating hallucinatory experiences.

Similarities between anomalies may, therefore, result from them sharing similar (or identical) cognitive and perceptual processes but dominated by subjective factors that mould the context of a manifestation based on the participant’s conceptions. Any differences could merely be due to context, with the subconscious mind generating and editing an anomalous “experience”, adjusting its form to best fit the circumstances of a given experience. This is especially the case of manifestations occurring in a domestic (i.e. bedroom) setting, which are at least *potentially* explicable in terms of hypnopompic/hypnagogic hallucinations. It is tempting to infer many classes of anomalies are only perceived *subjectively*, explaining both the poor quality of physical evidence and any similarities.

Another possibility is that seemingly different anomalies that share specific attributes may have a shared *exotic* causation; suppose, for example, that UFOs ARE a form of “ghost”, with certain UFO and apparitional events representing a time “echo”; basically a psychical transfer of information from the past (or the future) into the present. Based on this conception, events involving “the past” and occurring on ground level are generally interpreted as “ghosts”, or as “UFO entities” if notably exotic in appearance. Time echoes, on the other hand, that manifest in an aerial context and originating from “the future” are generally reported as UFOs, or as “ghost planes” if involving an echo originating from the past. It may be that the perception of such phenomena is fed indirectly into the human perception system, explaining some of their common psychical attributes – and accounting for the dearth of any objective evidence. Such an explanation schema, while doubtless aberrant to sceptics, is nonetheless worthy

of at least some modest consideration. At present, this conception suffers fatally from the apparent lack of a plausible (or at least *conceptual*) generative mechanism and its reliance on actual psychical based perception. That stated, if the generation and perception could instead involve xenonormal processes and be thus clearly and scientifically defined, these objections could be circumvented, resulting in a testable theory with clear parameters.

A "time echo" hypothesis does not, however, explain classic entity and abduction experiences whose professed context is overtly one of contact with beings from "elsewhere". Likewise, a subjective theory has difficulty explaining multiple witness cases. Nonetheless, optical illusions and misperceptions can also be multiply perceived, involving an effect or physical focus perceived in a subjective manner. Hendry proposed the idea that inexplicable UFO events may be generated by different causative factors (Hendry, 1980); this may equally be the case for other anomalies.

## CONCLUSION

It is safe to say that (in regard to UFOs) the vast majority of events have prosaic causes, with little, if any connection to other classes of anomalies. Many are only comparable in the sense that most anomalies are explicable in mundane terms – albeit involving different causative factors. Nonetheless, it seems undeniable that some UFOs reportedly exhibit incorporeal and paranormal attributes, which (combined with other factors) places a distinctive question mark over their claimed physical status. Many of our assumptions about the nature and divisions between anomalies are mostly cultural in origin, a factor which doubtless affects our general perception of them. For the sake of parsimony, we should look for shared xenonormal solutions to such manifestations prior to accepting any extraordinary explanation schema. Furthermore, it is likely that a mundane solution proposed for one class of anomaly is likely to have utility for other (apparent) classes of event. However, the remote prospect exists that such solutions could be found wanting in some instances, and may thus require a novel explanation. Again, this could indicate interconnections between UFOs and other anomalous phenomena and have notable consequences for both anomaly research and our understanding of reality.

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# ALIEN EXPERIENCES: JUST A FORM OF SLEEP PARALYSIS?

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A preliminary content analysis of differences and similarities in features between the two experiences.

## ABSTRACT

Sleep paralysis has been argued for as explanation for alien experiences (e.g. Holden and French, 2002) along with some empirical support. However, there are many opposing arguments, such as the general inadequacy of sleep paralysis to account for a large number of features of alien experiences (McLeod et al, 1996) and challenges against the empirical data. The previous focus on prevalence of sleep paralysis in alien experiencers as a group, and some similarity between the two experiences, has avoided the question of how similar or different they can be overall. To counter this, a Content Analysis was completed on 14 cases of alien experiences and 14 cases of sleep paralysis experiences, noting the presence or absence of 30 features (15 representative of each experience). The findings challenge the hypothesis that the two experiences are the same and provide support for them potentially being two different experiences. However, with some findings there was a suggestion of a degree of crossover between the two experiences, which might account for a level of misinterpretation in the results of previous studies. A larger analysis is suggested, along with a more subtle exploration of the phenomenology of the alien contact experience, possibly including the potential relevance of out-of-body experiences and altered states of consciousness.

## INTRODUCTION

Alien contact or abduction experiences (ACEs) exemplify an experience which is commonly rejected by mainstream science's views of what is possible, yet appear completely real to usually sincere experiencers and are more prevalent than is generally thought (Clark, 2000). However, actual prevalence rates are unclear or difficult to establish. A commonly quoted estimation is that 3.7 million Americans, or 2% of the US population (estimated from 119 out of a sample of 5,947), have had abduction experiences based on a Roper poll (Hopkins, Jacobs, & Westrum, 1992). This has since been challenged to be an over-estimation due to the use of indicators of an experience (see Blackmore, 1998), but Rodwell (2010) cautions that, referring to those who actually describe such personal experiences (of which she has personally investigated

over 2000), this is likely to be under-representative of the true amount, due to people not talking openly about experiences through fear of ridicule. Also, there can be more subtle contact experiences which are less publicised than abduction accounts and also be under-reported (Rodwell, 2010).

Holden and French (2002) note that due to the emphasis on particular features being variable between both experiencers and researchers, a universal definition of such experiences is unobtainable. However, descriptions of ACEs reveal them to be a richly detailed and involved experience with a variety of psychological and physical implications for the experiencer (Appelle, Lynn and Newman, 2000). Suggested criteria for alien abductees include the person having either conscious or hypnotically recovered memories of being taken from their normal environment by non-human beings to an unusual enclosed location, which is assumed or seen to be a spacecraft, and where a physical examination or telepathic communication may take place (Rodeghier, 1994). Also, the abductee often experiences a sense of paralysis while such examinations occur, which experiencers believe is imposed by the beings (McLeod, Corbisier and Mack, 1996).

Holden and French (2002) deny the possibility of the experiences being of real alien contact because of weak independent evidence and therefore suggest that an alternative explanation is needed. A variety of psychological theories have been proposed to explain ACEs. For a more in-depth critical overview of these see Appelle (1996) and Appelle et al. (2000). One popular theory among psychologists is that sleep paralysis (SP) can explain them (e.g., Blackmore, 1994, 1998; French, Santomauro, Hamilton, Fox and Thalbourne, 2008; Holden and French, 2002; McNally and Clancy, 2005; Spanos, Cross, Dickson and DuBreuil, 1993). SP “consists of a period of inability to perform voluntary movements at sleep onset (hypnagogic or predormital form) or upon awakening, either during the night or in the morning (hypnopompic or postdormital form)” (American Academy of Sleep Medicine, 2001, p. 166), which is commonly associated with *hypnagogic* and *hypnopompic* hallucinations (Hufford, 1982). The experiencer becomes aware of their paralysis and appears to have normal waking consciousness mixed with dream mentation (French et al, 2008). The hallucinations can include seeing or hearing an apparition come towards them, feeling pressure on their body or as if being strangled, and being unable to move until the state is broken when the hallucinations stop (Hufford, 1982).

#### ARGUMENTS FOR SP AS AN EXPLANATION

SP is often attributed to a supernatural cause across various cultures, including modern Western societies (Santomauro and French, 2009), such as the *Old Hag* in Newfoundland (Hufford, 1982) and *Kanashibari* in Japan (Fukuda, 1993).

Santomauro and French (2009) claim that ACEs are one of these interpretations. They argue that the widely held view among ufologists that memories of abductions are often deliberately erased by the aliens, whilst the general memory of being paralysed and experiencing hallucinations surrounding the abduction remains, is a fanciful interpretation, but one which would be possible if the person did not know that SP is a common sleep disorder, often estimated as occurring at least once in up to 40-50% of people (American Academy of Sleep Medicine, 2001). They also suggest that without prior knowledge of SP, alien contact experiencers (ACERs) would be motivated to find another explanation, and if the person has a prior belief in alien abductions, this might be a natural conclusion (Santomauro and French, 2009).

French et al. (2008) also suggest that ufologists take SP features to be indicators of abductions, when the person may have no actual memories of alien encounters. A detailed false memory could in theory be produced, if techniques are used to recover the memories that are believed to be repressed, such as hypnotic regression (French et al, 2008). Holden and French (2002) suggest that SP may be a reasonable explanation because many ACEs are related to sleep, for example nearly 60% in one study (Spanos et al, 1993). Also, ACEs are often remembered as a form of bizarre dream or containing a dreamlike quality, and often include perceived paralysis (Appelle, 1996). There is some limited quantitative evidence showing ACERs to have a higher prevalence of SP than controls (Blackmore and Cox, 2000; French et al, 2008; Holden and French, 2002; McNally, Lasko, Clancy, Macklin, Pitman and Orr, 2004).

#### ARGUMENTS AGAINST SP AS AN EXPLANATION

Appelle et al. (2000) previously argued that a direct link has not been made between the two experiences. Indeed, out of 250 respondents to a sleep website (University of California in Los Angeles, UCLA), where approximately 50% had formed a paranormal interpretation of their SP episodes, none had formed an alien interpretation, which potentially weakens the proposed relationship (Terrillon and Marques-Bonham, 2001). More importantly though, some aspects of ACEs have been shown to be incongruent with SP. Mack (1996) pointed out the inadequacy of SP in explaining ACEs because it cannot account for a large amount of features, only the few that appear similar. Many ACEs have a high degree of consistency including specific details (Appelle, 1996), appearing cross-culturally and even in very young children, despite some not being reported in the media (McLeod et al, 1996). Also, an analysis across multiple investigators found both prominent and obscure details are reported repetitively irrespective of investigator (Bullard, 1994). This is in contrast to the wide range of imagery that is reported in SP.

Mack (1996) highlighted that SP episodes of long duration occur in what would be an easily identifiable disorder of narcolepsy, which is relevant because abduction scenarios normally last for a significant amount of time. This is in contrast to the typical duration of SP episodes from a few seconds to minutes (Sherwood, 2004). There is also evidence that some ACERs develop phobias relevant to their experience and not specifically related to sleep, with symptoms of anxiety and trauma not explainable by SP (McLeod et al, 1996). Challenging the argument of SP memories being reconstructed during hypnosis is that many ACERs had not undergone hypnotic regression, for example only 30% of one sample (McLeod et al, 1996). Appelle (1996) argues that many hypnagogic/hypnopompic hallucinations are of static images or scenes and experiencers are usually aware they are not real, which is in opposition to the general experience and self-interpretation of ACEs. Further to this, there is no evidence that alien figures are seen in such hallucinations (Appelle, 1996), not to mention that many ACEs do not occur at night (McLeod et al, 1996), for example 40% in Spanos et al.'s (1993) study.

A challenge to the empirical evidence presented in favour of SP as an explanation can be made. A small number of indicators used to identify SP in ACERs (Blackmore and Cox, 2000; French et al, 2008) may result in false positives if such features are equally endorsed by each type of experiencer (e.g., paralysis or sense of presence). For example, French et al. (2008) only used one question from the Nocturnal Experiences Questionnaire (NEQ; French, Rose, and Blackmore, 2002) relating to paralysis. If paralysis was a feature of two different experiences then endorsement of such an item might distort findings. Also, it could be possible that an individual person has both types of experience (ACEs and SP) with some overlap of features, either simply due to coincidence or related in some way. This is unclear because previous studies have not directly checked details with ACERs (e.g., the other features of their experience surrounding those used to identify SP, or whether they have experienced SP as phenomenologically different to their ACEs), possibly due to them assuming that ACEs are SP.

This assumption is noticeable in McNally and Clancy (2005) and McNally et al. (2004), as they simply interpreted some features of reported ACEs as being representative of SP (e.g., being paralysed and seeing figures in the room), whilst ignoring the other features because they were recovered through hypnosis (e.g., medical experiments onboard a UFO). Further to this, only limited sample sizes have been used to gather such data, making the findings more vulnerable to such distortions. More generally, false positive and false negative reports between paranormal phenomena and hypnagogic/hypnopompic hallucinations have been found to occur (Sherwood, 2002, 2012), and a similar thing may happen for interpretation of ACEs (by

either experiencers or researchers), perpetuated by the limited understanding of which features correspond and which do not between the experiences.

## RATIONALE FOR THE PROPOSED RESEARCH

In light of the outlined arguments, a greater understanding of which aspects of both differ and which correspond would be beneficial. Holden and French (2002) do note that there are many differences between SP and ACEs and much more research is needed. Santomauro and French (2009) argue for a greater awareness about SP in the public, and for health professionals to reduce distress which the experiences can cause. Implicit in this, is the notion that that experiencers will benefit from a non-supernatural explanation for their experience. On the one hand this could be relevant for ACEs, but on the other they might feel their experiences are being explained away unfairly as SP or some other psychological artefact, especially if their experience is of a profound or spiritually transformative nature (Rodwell, 2010). Therefore, this research could help benefit understanding of both considerations, achieved with a Content Analysis (CA) of numerous features occurring in both experiences, exploring the proportions of each between experiences.

Previously, CA has been conducted on aspects of repressed sexual abuse in ACEs (Powers, 1994), on SP (Sherwood, 2004), and in a study comparing SP and dreams (Parker and Blackmore, 2002), however a direct comparison between ACEs and sleep paralysis experiences (SPEs) has not been completed as far as is known. No specific hypotheses are being made about individual features, despite the theoretical assumption that some of them will be equally represented in both experiences, whereas others will be more prevalent in the experience type they were representative of, identified from the relevant literature.

## METHOD

### SAMPLE DETAILS WITH INCLUSION AND EXCLUSION CRITERIA

ACEs were obtained through an alien contact investigator, who is the chairperson of a UK UFO group (details removed for confidentiality), through which cases of possible alien contact are investigated. Information on cases was obtained either from a written report posted to the group's website or contained within emails from the experiencer to the investigator. These represented the sampling units for the analysis (Krippendorff, 2013). The inclusion criteria involved both alien abduction and visitations (or other experiences which suggested alien contact) to avoid the risk of a limited response rate for a specific experience type.

In most cases, those experiences originally investigated involved some form of perception of alien beings, however there are also experiences which are identified from a range of additional information without seeing the beings directly. For example, sometimes experiencers can perceive the being as something else familiar ("screen memories") temporarily or for the whole experience (Alien contact investigator, personal communication April 22, 2013). However, these experiences are still relevant because of additional information suggesting alien contact. Similarly, there are UFO sightings where additional information suggests they may have experienced alien contact. Because experiences of this type form part of an in-depth investigation, the interpretation of the investigator is assumed to be correct in terms of such cases being relevant for this research.

Cases needed to include a visual experience, to exclude experiences of just hearing voices which might be interpreted as alien contact, but with no additional information. The other exclusion criteria were lack of enough information on any one specific experience to be able to conduct the analysis. This was determined by an initial judgement and using the rule that at least 10 of the features could be answered directly, with others answered indirectly. One case had to be excluded for this reason. The final sample included 14 ACEs (mean age = 46, age range 21-65), with 10 males and 4 females.

SPEs were obtained from a variety of published literature, including 5 cases from a key book (Hufford, 1982, p. 32-40, p. 40-46, p. 58-66, p. 73-81) and 2 from a recent book (Adler, 2011, p. 69, p. 100) containing numerous cases, and 1 from Stores (1998), 1 from Hufford (2005), 1 from McCarty & Chessham (2008), 2 from French & Santomauro (2007), 1 from Santomauro and French (2009), and 1 from French (2009). The same number of cases was chosen using the rules previously outlined. To avoid any personal bias in choosing specific cases, the first cases discovered that fulfilled the criteria were used. However, a number of sources were used because many (e.g., journal articles) contained only 1 or 2 cases, and the key book with cases was published 30 years ago, so more recent cases were also included. The ACEs occurred over a number of previous decades until recently so this was comparable (specific periods of time not noted). The 14 cases included 6 males, 7 females and 1 unknown (mean age = 32, age range 19-58, with 5 unknown).

#### SELECTION OF SPECIFIC EXPERIENCE FOR ANALYSIS AND DEFINITION

A specific experience (if the case included multiple experiences) was chosen based on it being most relevant for the nature of this research (i.e., an ACE which best represented either an abduction or visitation) and fulfilling the rules stated above. These represented context units (Krippendorff, 2013). If there were multiple experiences matching these criteria then the one with the greater

amount of features was chosen. The experience's beginning and end was defined as the periods containing a distinct event where something noticeably unusual seemed to be happening. This would normally be occurring in the same period of time (e.g., in one night), although a full conscious memory at the time was not required, as often ACERs have a conscious memory but a blackout at the end, or later flashbacks of parts of an experience.

#### DEVELOPMENT OF FEATURES AND CODES

Individual features of both experiences were identified separately from literature to form a coding manual (too large for inclusion here so please contact the author for enquiries regarding this). These represented recording/coding units (Krippendorff, 2013). Features representative of ACEs were identified from the following: Appelle (1996), Appelle et al. (2000), Carpenter (1997), French et al. (2008), Holden and French (2002), Mack (1994), McLeod et al. (1996), Rodwell (2010), Wright (1997). Features representative of SP were identified from the following: Adler (2011), Cheyne and Girard (2009), Cheyne, Newby-Clark, and Rueffer (1999a), Cheyne, Rueffer, and Newby-Clark (1999b), Holden & French (2002), Hufford (1982), Sherwood (2004), and Terrillon and Marques-Bonham (2001). The Sherwood (2004) source is a qualitative CA of SP features so was particularly relevant.

Experience features were selected for their relevance, but so that they would not be impossible to occur in the other experience by its definition. For example, with the *travelling to a different location* (ACE) feature, during SP the person is physically confined to their environment, but SP can lead to an out-of-body experience (OBE), a related anomalous experience, which can include the perception of travelling to other locations (Terrillon and Marques-Bonham, 2001). The features selected totalled 30 with 15 for each experience, however even though an equal amount was aimed for, a number were present in both. In this instance, a feature was labelled as representing the particular experience for which it appeared more commonly in or best represented.

Aside from a few exceptions, feature codes were whether the feature was present or not, so were mutually exclusive to each other and exhaustive. For the few exceptions, these were also developed to be mutually exclusive and exhaustive. Also, features themselves were developed to be individual. Definitions, inclusion and exclusion criteria of the features are included in the coding manual. See Table 1 below for the features chosen (split by the experience type they belong to) along with their relevant codes, and groups they were categorised in (purely for descriptive purposes).

Table 1

*List of features split by experience type with feature codes and grouping*

Feature	Feature codes	Feature category
<u>ACEs</u>		
Entity form	Humanoid, Not humanoid, Unsure	Entity
Entity appearance	Alien, Human/other, Unsure	Entity
Entity number	One, Multiple, Unsure	Entity
Communication with entity	No communication, Telepathic communication, Verbal communication	Communication
Travelling to other location	Different location, Original location	Environment
Unusual location	Unfamiliar, Familiar	Environment
Medical examination	Not present, Present	Specific event
UFO sighting	Not present, Present	Specific event
Missing time	Not present, Present	Surrounding circumstances
Physical mislocation after experience	Not present, Present	Surrounding circumstances
Damage to body	Not present, Present	Surrounding circumstances
Felt close with the Entity	Not present, Present	Emotions/Feelings
Time distortion	Not present, Present	State of consciousness

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Altered state of consciousness	Not present, Present	State of consciousness
Other paranormal phenomena	Not present, Present	Paranormal
<u>SPEs</u>		
Entity sits on chest/Strangles	Not present, Present see nothing, Present see something	Specific event
Sexual intercourse with entity	Not present, Present	Specific event
Experience associated with sleep or waking activity	Sleep, Awake	Surrounding circumstances
Sense of presence	Not present, Present	Emotions/Feelings
Intense fear	Not present, Present	Emotions/Feelings
Distorted hearing	Not present, Present	State of Consciousness
Disorientation/Confusion	Not present, Present	State of Consciousness
Paralysis	Paralysed, Movement part of the time, Movement all of the time	Bodily feelings
Movement/Floating Sensations	Not present, Present	Bodily feelings
Pressure on body/Breathlessness	Not present, Present see nothing, Present see something	Bodily feelings
Vibrations/Energy surges/Other	Not present, Present	Bodily feelings
Sensation of being touched or pulled	Not present, Present	Bodily feelings

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Humming/Buzzing/ Other noises	Not present, Present	Auditory
Footsteps/Tapping/ Other sounds	Not present, Present	Auditory
Out-of-body experience	Not present, Present	Paranormal

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Some features directly relate to aspects closely surrounding the experience (e.g., noticeable damage to body soon after the experience) so these are included in the definition of experience. However, because ACEs can have aspects specifically related to them involving additional events earlier or later in the person's life, these were noted down separately. These included the presence or absence of: SP noticeably different than their ACEs, OBEs, other paranormal experiences, UFO sightings, additional ACEs, hypnotic regression for recovering memories of their experience, and independent corroboration of their experience. Criteria for these are detailed in the coding manual. For SPEs, just presence of additional episodes was noted.

## MATERIALS

Materials included the coding manual and the ACEs and SPEs coding forms - separate Excel spreadsheets with case numbers 1-14 as rows and features from the coding manual (plus surrounding features) as columns. ACEs were emailed an information sheet, consent form, participant information form containing questions about gender, age, whether they had SP which was different than their ACEs, further comments space, and later a debrief sheet.

## PROCEDURE

ACEs were recruited through an email advertisement via the alien contact investigator, which included an information sheet, consent form, and participant information form. They were asked to contact the author directly and email back the completed forms. Once consent was received case details were sent to the author, either in the form of a case report published on the website, emails to the alien contact investigator about their experience, or both. This was initially assessed to check it fulfilled the inclusion criteria (see sample section). A particular experience was then identified from their reported ACE history on which a CA was carried out, noting the relevant code for all 30 features in the coding manual into an Excel spreadsheet. This is considered a useful method because CA is an unobtrusive technique which produces an analysis of expressive contents of sources (Krippendorff, 2013), in this case

features representing an experience. If something was unclear the ACEr was contracted to clarify this, however use of this was minimised so that the ACEs were generally assessed in the same way as the SPEs. Additional information not used for the main analysis was identified from their case details. SP cases fulfilling the criteria were obtained from literature, on which the same CA procedure was conducted using a separate Excel spreadsheet. The prevalence of each feature between the two experience types was then assessed using multiple Chi-square analyses on the statistical software package SPSS. ACErs were emailed a debrief sheet after study completion and offered to request general feedback on the findings.

## ETHICAL CONSIDERATIONS

Ethical approval was achieved through Lancaster University (where the research was conducted) based on the British Psychological Society ethics guidelines. Issues considered included anonymity for ACErs because of the controversial nature of their experiences, which they might wish to be kept private. Any information provided to the author was kept private and participants were given a participant number to withdraw their data if they wished to. Participants were informed that their experience would be assessed fairly in terms of the aims of the study, so they were reassured that their experience would not be explained away unfairly. Exclusion criteria aimed to be minimal and the one excluded case was contacted personally to explain this and they felt comfortable with the decision.

## RELIABILITY

To validate the coding scheme's ability to produce similar results for multiple coders (Neuendorf, 2002) inter-coder reliability was sought. Unfortunately time constraints only allowed for a raw percent agreement calculated on 1 case from each experience randomly selected. Coding for the 2 cases was compared with that of another coder known to the author. This produced inter-coder reliability of 100% for both experience types, naturally higher than the minimum suggested coefficient amount of 0.80 (Neuendorf, 2002).

## VALIDITY

Validity for the ACE sample was sought by exploring a range of relevant literature to develop a *a priori* coding, rather than from the data itself, to avoid features only representing the specific sample. Operational definitions were matched to the conceptual features for internal validity, with mutually exclusive and exhaustive categories (Neuendorf, 2002). Face validity was checked here and believed to be met. Once codes were constructed, content validity for

features was sought by contacting the alien contact investigator for a comment on how well the features for ACEs represented the phenomenon:

"I have been a direct investigator of contact experiences from around the world for a number of years, and therefore have a good understanding of the many aspects which regularly occur throughout them. The list of features which Andrew (the author) has selected for his study is a very good representation of the most commonly reported features during experiences of this type. While some of the features listed under SP do also occur on some occasions, I am aware that there is a degree of cross-over between the two lists, so this is not an issue" (Alien contact investigator, personal communication, April 22, 2013).

Content validity was not possible to check for SP, but the selected features were developed from a number of sources and were checked that they were generally agreed upon by most authors. Whilst not being a random sample, for partial external validity, the original investigations completed confirmed whether a person's experiences appear to be representative of common characteristics of ACEs.

## RESULTS

### ACEs BACKGROUND FINDINGS

It was found that 50% of ACErs had previously experienced SP. However, it should be noted that the specific question asked was whether they had experienced it as something noticeably different than their ACEs. For OBEs outside of their experience, 71% had experienced them. There were 64% who had had paranormal experiences outside their experience, 71% who had experienced UFO sightings, and 71% who had multiple ACEs. Regarding extra information about their experience (but not included in the main analysis), only 7% had undergone hypnotic regression to recover any memories, representing only 1 person, who already had many conscious memories prior to this. Also, 50% had some form of independent corroboration of their experience.

Corroborative evidence ranged from more subtle to more significant corroboration. An example of the former, in Case number 7, is where the ACEr was woken up by beings and taken elsewhere in his home to witness his father passing away, then was taken back to his room. The following morning he found out his father had passed away in the night and what he had witnessed matched exactly what had happened as confirmed by his mother. For an example of the latter, in Case number 3, the ACEr was driving his car at the time of the incident and both he and his passenger witnessed a UFO flying overhead just before he suddenly found himself inside a craft with a being for a period of time, then suddenly they found themselves driving the car on a completely different road

with a sudden shock about what had happened, but with no conscious memory of how it occurred. Whilst such examples could have various interpretations, on face value the ACEs appear to corroborate with 'external reality' in some way (e.g., some aspect of the experience being real in the former case, and some aspect of the experience occurring for another person in the latter case).

#### SPEs BACKGROUND FINDINGS

It was found that for prevalence of self-reported additional SPEs (as identified in the case by the person or secondary author), 79% had experienced them.

#### CONTENT ANALYSIS FINDINGS

Chi-square tests were completed on the 30 features if statistical assumptions were met, otherwise feature codes were combined in the contingency table if suitable, or Fisher's Exact Test statistic was referred to. A criterion of 5% was used for all testing of significance. Features which had codes combined due to limited observations leading to small expected counts (violating an assumption of Chi-square) were as follows: Entity appearance (*Unsure* combined with *Human/other*), Communication with entity (*Verbal communication* combined with *No communication*), Paralysis (*Movement part of the time* combined with *Movement all of the time*).

See Table 2 for a summary of which features had a significant association with a particular experience (i.e., significantly more prevalent in), organised into the separate experience types they belong to. Also, the code this relates to is noted in the ACEs and SPEs columns, along with the percentage of cases with the particular feature.

Table 2

*Summary of significant findings organised by experience type*

Feature	ACEs	SPEs	Chi-Square(x <sup>2</sup> )/ Fisher's Exact Test
<u>ACEs</u>			
Entity form	Humanoid (71%)	Humanoid (43%)	x <sup>2</sup> = 5.60 (p = 0.018)
Entity appearance	Alien (43%)	Alien (0%)	x <sup>2</sup> = 15.56 (p < 0.001)
Entity number	Multiple (71%)	Multiple (0%)	x <sup>2</sup> = 15.56 (p < 0.001)

Communication with entity	Telepathic communication (57%)	Telepathic communication (14%)	$\chi^2 = 5.60$ ( $p = 0.018$ )
Travelling to other location	Different location (64%)	Different location (0%)	Significant Fisher's Exact Test ( $p = 0.001$ )
Unusual location	Unfamiliar (43%)	Unfamiliar (0%)	Significant Fisher's Exact Test ( $p = 0.016$ )
Medical examination	Present (36%)	Present (0%)	Significant Fisher's Exact Test ( $p = 0.041$ )
UFO sighting	Present (36%)	Present (0%)	Significant Fisher's Exact test ( $p = 0.041$ )
Other paranormal phenomena	Present (36%)	Present (0%)	Significant Fisher's Exact Test ( $p = 0.041$ )
<u>SPEs</u>			
Entity sits on chest /Strangles	Present (0%)	Present (64%)	Significant Fisher's Exact Test ( $p = 0.001$ )
Intense fear	Present (7%)	Present (100%)	24.27 ( $p < 0.001$ )
Disorientation /Confusion	Present (43%)	Present (0%)	Significant Fisher's Exact Test ( $p = 0.016$ )
Paralysis	Paralysed (0%)	Paralysed (100%)	28.00 ( $p < 0.001$ )
Pressure on body /Breathlessness	Present (0%)	Present (93%)	$\chi^2 = 24.27$ ( $p < 0.001$ )
Footsteps/Tapping /Other sounds	Present (0%)	Present (51%)	Significant Fisher's Exact Test ( $p = 0.02$ )

*Note: Code and percentages included in columns are either presence of a feature or the most relevant for the particular feature type.*

As above, but representing those features with no significant association with a particular experience (i.e., a similar prevalence in both experience types), see Table 3.

Table 3

*Summary of non-significant findings organised by experience type*

Feature	ACEs	SPEs	Chi-Square(x <sup>2</sup> )/ Fisher's Exact Test
<u>ACEs</u>			
Missing time	Present (21%)	Present (0%)	Non-significant Fisher's Exact Test (p = 0.222)
Physical mislocation after experience	Present (14%)	Present (0%)	Non-significant Fisher's Exact Test (p = 0.481)
Damage to body	Present (36%)	Present (29%)	Non-significant Fisher's Exact Test (p = 1.000)
Felt close with the entity	Present (21%)	Present (0%)	Non-significant Fisher's Exact Test (p = 0.222)
Time distortion	Present (21%)	Present (0%)	Non-significant Fisher's Exact Test (p = 0.222)
Altered state of consciousness	Present (36%)	Present (7%)	Non-significant Fisher's Exact Test (p = 0.165)
<u>SPEs</u>			
Sexual intercourse with entity	Present (0%)	Present (0%)	No cases
Experience associated with sleep or waking activity	Sleep (79%)	Sleep (100%)	Non-significant Fisher's Exact Test (p = 0.222)
Sense of presence	Present (14%)	Present (50%)	Non-significant Fisher's Exact Test (p = 0.103)

Distorted hearing	Present (0%)	Present (0%)	No cases
Movement /Floating sensations	Present (7%)	Present (14%)	Non-significant Fisher's Exact Test (p = 1.000)
Vibrations /Energy surges /Other	Present (7%)	Present (14%)	Non-significant Fisher's Exact Test (p = 1.000)
Sensation of being touched or pulled	Present (14%)	Present (14%)	Non-significant Fisher's Exact Test (p = 0.385)
Humming /Buzzing/Other noises	Present (7%)	Present (0%)	Non-significant Fisher's Exact Test (p = 1.000)
Out-of-body experience	Present (14%)	Present (0%)	Non-significant Fisher's Exact Test (p = 0.481)

*Note: Code and percentages included in columns are either presence of a feature or the most relevant for the particular feature type.*

A specific note regarding *Sense of presence* - this had expected counts of 4.5 in 2 of the 4 cells of the contingency table (just violating an assumption of the Chi-square test) and the Fisher's Exact Test was not significant ( $p = 0.103$ ), showing sense of presence did not have different proportions between experience types. However, this finding should be cautioned because whilst the prevalence of this feature was evenly split (50%) within SP experiences, it was only present in 2 (14%) of the ACEs, and the Chi-square itself was significant ( $p = 0.043$ ), suggesting an association between the feature and SP.

## DISCUSSION

### IMPLICATIONS FROM SURROUNDING FEATURES

Whilst only a limited amount of surrounding features was noted for ACEs, the findings do present some suggestive implications. There were 50% of ACEs who had also experienced SP separately to their ACEs. Assuming nobody misunderstood the question they received, the interpretation of whether this prevalence is particularly meaningful is debatable. Prevalence of SP can reach this amount as it is estimated that up to 40-50% of people can have the

experience at least once (American Academy of Sleep Medicine, 2001) and in one study it was noted as being at 62% (Ness, 1978). Cheyne et al. (1999a) note that whilst rates previously varied from as little as 3% to 62%, rates between 25-40% have been found more recently, and that hallucinoid experiences and SPs have often been assessed in the same question. This makes prevalence of just SP alone difficult to determine. In light of this, the prevalence of SP in ACERs appears to be slightly higher than found in the studies referenced above.

However, even if this was considered a particularly high prevalence (in relation to the 25-40% rates), two different interpretations can be made for this; one perspective would argue this represents that at least some of the ACEs were actually episodes of SP. An alternative interpretation is that something specific to this group is causing a greater amount of SP. One suggestion of this alternative approach is that as stress and sleep disturbances can cause a greater risk for SP, the trauma, phobias and fears (especially if related to sleep because of fears of being taken in the night) associated with ACEs, particularly abductions, could actually trigger a SP episode. The fact that experiencers noted that their SPs were noticeably different to their ACEs is congruent with this proposal and challenges the former interpretation. For example, why would one person interpret one of their experiences as alien contact and another as SP? Unfortunately, it was beyond the scope of the research to gather details about their experiences of SP, so it is unclear how different the experiences were.

A high percentage of the group had previously experienced OBEs, other paranormal phenomena, UFO sightings, and other ACEs. This suggests that their ACEs are not isolated incidents but connected to other ostensibly paranormal events. The prevalence of OBEs (71%) is a lot higher than the prevalence commonly found in general population of approximately 10% (Alvarado, 2000), and suggests some relationship between this and ACEs indirectly or directly. Also of particular interest, is that only one person had undergone hypnotic regression to recover memories for their experiences (who notably already had numerous conscious memories). This challenges the argument that a SP episode gets transformed into an ACE after false memories are constructed under hypnosis (Holden and French, 2002).

Further to this, 50% of ACERs had some independent corroboration for their experience. Whilst this is not conclusive evidence, it challenges the argument of SP being the underlying cause, because supposedly the hallucinations are entirely subjective, with the only objective thing being the bodily paralysis and responses to the experience (e.g., difficulty breathing). This finding is in correspondence with other findings that independent sightings of UFOs during abduction can occur, and less often an experiencer found missing from where they should be (McLeod et al, 1996). The former event is difficult to explain as the result of SP. One possible suggestion is that the ACER could view the UFO in

real life, then have SP that night which has alien-related content (due to the sighting). Whilst logically a SP episode is more likely to contain alien-related content if a UFO has been witnessed beforehand, this interpretation depends on the UFO sighting triggering a SP episode. The likelihood of this occurring is debatable and arguably less likely than the previous suggestion of prior abduction experiences leading to a heightened vulnerability of SP.

#### IMPLICATIONS FROM FINDINGS FOR DIFFERENCES BETWEEN EXPERIENCES

For ACEs, 9 out of 15 features were significantly different than in SPEs. These were: *Entity form, Entity appearance, Entity number, Communication with entity, Travelling to other location, Unusual location, Medical examination, UFO sighting, Other paranormal phenomena*. More humanoids, appearing as aliens and as multiple beings, were seen in ACEs, as found in the general literature (McLeod et al, 1996). Also, there was more telepathic communication, travelling to a different location during the experience and the location perceived during the experience being unusual. Travelling to another location, usually a UFO, is also a common characteristic of experiences, although sometimes there is just the memory of being onboard (McLeod, et al, 1996). This aspect of the experience is in direct opposition to the SPEs which all involved staying in the normal location the person slept in.

There were more medical examinations, UFO sightings, and paranormal phenomena during ACEs. The medical examinations are a key feature of abductions (McLeod et al, 1996) and the fact that no such similar feature was found in SPEs raises the saliency of the distinction between experience types. The UFO sightings suggest that some experiences were related to an external presence, which the SP argument would have to account for (i.e., hallucination of a UFO before the beings enter the room). This is found in other cases (Mack, 1994) and the key issue for SP is that, if the UFO was seen before paralysis (which triggers the hallucinations; Cheyne et al, 1999a) in the abduction experience, this relationship would have to be explained as a coincidence (seeing the UFO just before a SP episode) and then interpretation of this episode as an abduction. The paranormal phenomena mostly related to people being levitated and being passed through walls in their home, which are commonly interpreted as the result of alien technology (McLeod et al, 1996). However, such experiences are also features of OBEs so this needs to be also considered.

For SPEs, 6 out of 15 features were significantly different than in ACEs. These were: *Entity sits on chest/Strangles, Intense fear, Disorientation/Confusion, Paralysis, Pressure on body/Breathlessness, and Footsteps/Tapping/Other*. All of those were more present in SPEs than ACEs, except the opposite for *Disorientation/Confusion*. This feature was noticed to also occur in the ACEs

literature so this is perhaps not so surprising, but it was considered as a feature of SP (Sherwood, 2004). It is possible the feature combines two different aspects. For ACEs there is sometimes the feeling of confusion over the person's own behaviour or a lack of fear in the situation, rather than a general disorientation (Alien contact investigator, personal communication, May 3rd, 2013). This lack of fear is largely absent from SP episodes because of the intense fear normally associated with them, so this feature might be more appropriate for ACEs here.

However, the other 5 features are definitive of SPs. *Entity sits on chest/Strangles* was not present in any of the ACEs. *Intense fear* was only present in one, whereas it was present in all SPEs. Notably the ACEs were characterised by the person feeling calm. Interestingly, irrespective of whether SP was involved or not, fear would be expected in such a terrifying situation (McLeod et al, 1996), but the lack of fear found here points towards the confusion feature mentioned previously (despite only a few mentioning this), or that the encounters themselves do not produce fear perhaps encouraged by multiple experiences.

The finding that all ACEs experienced movement rather than paralysis (with just one experiencing both) is in noticeable contrast to SP, which naturally has paralysis as its core feature. However, not all of those coded as having movement were able to confirm they could move their body as normal, leaving the chance that some were paralysed but something stopped them directly checking this, such as being fearful of moving (Hufford, 1982), or alternatively not feeling in a panic and trying to escape. This could lead to some false negatives of paralysis (Hufford, 1982). Despite this possibility, the fact that none reported complete paralysis is informative because in SP the hallucinations stop as soon as the person breaks out of the paralysis. There is also the suggestion from literature that any paralysis reported, might be caused by the beings, as some can notice being paralysed by a touch of the hand or instrument held by a being (Mack, 1994). Similarly, the total lack of *Pressure on body/Breathlessness* in ACEs is interesting because this is another key feature of SP and was present in all but one of those cases. This was the same for *Footsteps/Tapping/Other* but less common in SPEs as expected.

#### IMPLICATIONS FROM FINDINGS FOR SIMILARITIES BETWEEN EXPERIENCES

For ACE features, 6 features that were not different to SPEs were: *missing time*, *physical mislocation after experience*, *damage to body*, *felt close with the entity*, *time distortion*, and *altered state of consciousness*. However, all 6 features had more instances of not being present in both experiences, so caution needs to be applied in interpretation of this. Also, as they were representative of ACEs and not SPEs, they were not expected in the latter. Their general lack of

presence for ACEs could be due to a number of factors. For example, reporting of missing time can only occur when a person is in a situation where they can notice a discrepancy with time or another person raises this, irrespective of its actual occurrence. Congruent with this, is that it had no occurrence in SPEs and only 21% of ACEs. Similarly, some aspects of physical mislocation could be subtle and go unreported, with only 14% reporting this and no occurrence in SPEs as expected (because there is no physical movement). Alternatively, these could just be relatively rare events.

Damage to body is of interest as a greater amount was found in both ACEs (36%) and SPEs (29%). However, this could be misleading because it combines a number of aspects, such as headaches and extreme tiredness to finding unexplained cuts or other unexplained symptoms. Tiredness and headaches could occur after SP episodes because the fear associated with them can cause a person to stay awake at night attempting to avoid an episode. Of course the same can be said for ACEs but SPEs do not report being sick, finding unusual cuts or other significant effects on the body as ACEs do, who can also sometimes find what they believe to be an implant after an experience (McLeod et al, 1996). Alternatively, the headaches and tiredness in both experiences could be due to the trauma of the experience, but this correlation may not indicate the equivalence of the experiences.

Feeling close to the entity was not present in SPEs which would be expected due to the fear produced. Because it was only present in three cases of ACEs, this might be an attribute that is related to the specific beings observed, however this is a feature which has been reported. This realisation might also be influenced by the person's particular state of mind during the experience. The similar prevalence of time distortion suggests that whilst not a feature of SP, this specific altered state of consciousness can occur in ACEs although was relatively rare with less than a quarter in this sample. Similarly, whether the person experiences this might be influenced by some aspect of the experience itself or the experimenter's state of mind during this. However, for the few who mentioned it there was a definite feeling of time being different during the experience.

Similar to this and perhaps connected is the general altered state of consciousness feature; however this was slightly more common with 5 cases reporting it, and 1 SP case. This feature represents the experience feeling surreal, dreamlike, or the person feeling different to their normal waking self, even if they believe to be awake and having a "real" experience. The 1 case reported the experience as being hazy but not like a dream (Hufford, 1982, p. 42). Whilst SP is an altered state of consciousness, the experience itself feels like a normal perception of the environment with the person of firm belief they are awake (Hufford, 1982). So there is some suggestion of a difference here even though not present in all cases. Despite this, Hufford (1982) notes that a change

in perception has been reported by some SPEs (but normally involving increased clarity).

For SPE features, 9 out of 15 features that were not different to ACEs were: *Sexual intercourse with entity, Experience associated with sleep or waking activity, Sense of presence, Distorted hearing, Movement/Floating sensations, Vibrations/Energy surges/Other, Sensation of being touched or pulled, Humming/Buzzing/Other noises, and Out-of-body experience.* Sexual intercourse was not present in any case for both experiences so this similarity is not meaningful for the current exploration. Both experiences were more associated with sleep, which is expected for SP and partly expected for ACEs. People commonly report ACEs during the night which could be interpreted as either indicative of the experience being SP, or people being taken when they are most vulnerable, or another interpretation. However, the former cannot explain why 3 of the ACEs occurred when the person was awake. All 3 occurred in cars and notably also reported missing time. The sense of presence feature is misleading because the Chi-square statistic was actually significant, but considered not significant because 2 of the contingency table cells had expected counts of 4.5 (slightly under the required amount of 5), and the Fisher's Exact Test was not significant. Whilst the feature was present in 7 of the SPEs, it was only in 2 of the ACEs, so is different but would be more pronounced if more of the former had included this.

Distorted hearing was not found in either experience so is not meaningful here. Similarly, movement or floating sensations is not informative because only 1 of the ACEs and 2 of the SPEs reported this. This will be discussed further for OBEs. The same proportions were also found for vibrations or energy surges, so nothing of significance can be concluded from this. The sensation of being touched or pulled was more interesting because whilst having a sensation without a visual impression is a feature of SP, if an ACE was real and the person saw the being touch them they would also experience the bodily sensation. For just the sensation 2 cases for each experience reported this, however 3 of the ACEs reported the sensation along with seeing being touched. It is still difficult to make a conclusion here. Because only 1 ACE, but no SPE, had included humming or buzzing noises it is difficult to determine the significance of this. However, the ACEr noted that his mother had also heard the humming at the same time, which challenges the notion that appearance of this feature is evidence of SP (which is only heard by the experienter).

OBEs had only a slightly higher prevalence of 2 ACEs. However, this feature can be combined with movement or floating sensations because these can sometimes precede a full OBE (Hufford, 1982). Therefore, a more relaxed definition of OBE included 3 ACEs and 2 SPEs. It is unclear what to conclude here because whilst OBEs were considered as a possible feature for SP they do

not occur in every experience. The same can be said for ACEs and it is possible they are not directly related to the experience, but instead occur as a side-effect of some psychological or physical aspect of the experience.

However, in contrast to the above finding is that 71% of ACEs had previously had OBEs. This raises the question of whether the amount of OBEs within the ACEs is higher than reported, because experiencers may have been unaware of having an OBE during their experience. Despite this, it can be argued that an OBE (with or without SP) is an unlikely complete explanation for the ACE because of the salient differences between the experiences and OBE-related features would be expected to be more noticeable across ACEs. ACEs may be especially prone to having OBEs for some reason, but then the question still remains unanswered regarding an OBE within an ACE, as to whether the latter is caused by the former (i.e., the beings and environment seen are to do with the OBE-state), or the reverse (i.e., indirectly as a natural side-effect of the experience, or the OBE is directly caused somehow). However, both of these interpretations contradict the features reported suggesting a physical experience, which is one of the complications in this field of research (McLeod et al, 1996).

## LIMITATIONS

There are a number of inherent limitations in this study. Firstly, although the total sample size of 28 was relatively decent, as I was comparing between 2 different groups 14 for each the size was quite small for a CA which is benefited by larger samples sizes. This may have impacted findings because a number of features were not present at all or in very limited amounts, some of which were expected to be present, but these can vary within experience types so might need a larger sample to capture. Also, random sampling was not used which may have ensured a greater generalisability from the samples to their respective populations. The design of this study is notably not equivalent between experience types in terms of the general amount of material contained in a case (ACEs tended to be much larger due to an in-depth investigation which could produce more detail than presented in some SP cases), and contact was available for the former but not the latter. Also, the former were written from the perspective of the investigator's reporting and analysis of their experiences, whereas SP accounts tended to be written from a first-person perspective.

The inclusion criteria for ACEs was quite wide, as long as their experiences could match the requirements of the study, because it has been noted that other forms of alien contact have been focused less than 'classic' abductions (Rodwell, 2010). However, a distinction could be made between alien abductees and alien contactees (who are not technically abducted but in contact with aliens) and that they might have a different range of features present (Hough and Rogers, 2007;

McLeod et al, 1996). Some of the cases involved visitations and it is unclear which these would fall under, although their inclusion is relevant for this research because it allows for a wider range of experiences to be compared against SP and it could be argued that visitations are likely to be most similar to SP. To rule out the potential criticism though, perhaps one specific type of alien contact needs to be compared with SP (assuming enough participants can be gained).

Another limitation is that only one experience per person was being analysed with meant a large amount of information was being missed, potentially with other features. This discrepancy was noted upon reading some cases. Features could vary between a person's individual experiences and there is a chance that had a different experience been chosen within a case, the features may have differed. This was minimised however with most cases involving a specific experience that was the most relevant for inclusion. Finally, as already mentioned there are some potential interpretation issues with some of the features (disorientation or confusion, altered state of consciousness), despite attention being drawn to the inclusion and exclusion criteria in the coding manual. More generally, is the issue of manifest content compared to latent content (Neuendorf, 2002). The former was aimed for so features would be noticeable in the data, however in some instances features were identified with the surrounding information.

## FUTURE RESEARCH

Suggestions for future research are to gain a larger sample whilst countering as many of the limitations outlined above as possible to see if the findings are upheld. This could also include other more subtle features, such as the interpreted threat of the beings and emotions experienced in ACEs. Cheyne et al. (1999a) and Cheyne (2003) using Factor Analysis, established a three-factor structure of SP with specific features clustering around factors labelled *Intruder*, *Incubus*, and *Unusual Bodily Sensations* (later named as *Vestibular-Motor hallucinations*). If a similar approach was used for ACEs this might provide two-fold additional information, whether the pattern of features differs from the SP Factor Analysis and more generally, identifying whether there is a structure of features within ACEs.

Beyond this, based on consideration of findings, a study specifically exploring the altered state of consciousness and OBEs within both experiences is suggested. This could explore further whether ACEs represent an alteration of consciousness different to SP. Also, how much an OBE during SP could change the experience or begin to resemble an ACE. This might be relevant because it appears to be the only way within SP for a perception of movement and travelling to another location, outside of a dream which can follow a SP episode

(Sherwood, 2004). A Grounded Theory could be a useful method to compare between co-occurrences of particular features within ACEs. For example, the features present when an OBE occurs during the experience. Another potential challenge for the SP explanation is that of the apparent association ACEs can have with surrounding experiences in their life either prior to their ACE(s), such as paranormal experiences, or as a result of their ACE(s), such as a spiritual transformation (for an overview, see Rodwell, 2010). This current research only included prevalence of a few surrounding 'features' for ACEs but the meaning of this for the ACE is another area requiring further research in relation to the SP argument and in general.

## CONCLUSION

In conclusion, the findings of this study, where significant, seem to challenge the argument that ACEs are SP, because there were many features only present in ACEs and many key SP features missing from ACEs. This latter finding is perhaps more strong evidence because if a SP episode was given additional details relating to ACEs (under hypnosis or another method), it could be argued that the features relevant to SP would still persist. However, there is some suggestion of specific individual features where the experiences could crossover and it is possible that some ACEs are actually just misinterpreted SPEs. This might account for the higher prevalence rates of SP in ACEs found in some studies. Alternatively, the crossover of some features might cause ACEs to be incorrectly labelled as SP. These issues need to be explored further with additional research and focus on particular aspects of the experiences, such as the relevance of OBEs and altered states of consciousness. Despite this, the current research (albeit a modest sample size) has highlighted some of the differences between ACEs and SP which need to be accounted for when considering the SP interpretation.

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## BOOK REVIEWS

CONCLUSIONS OF A PARAPSYCHOLOGIST by Michael Lewis. Balboa Press. ISBN: 978-1-4525-7208-6. 156pp. 2013. £9.17.

*Reviewed by David Taylor*

Way back in the mists of time when I joined ASSAP, Michael Lewis was what was then called the National Investigations Coordinator (NIC). I forget now the first time I met Mike, but it was probably at some ASSAP training day in Blackpool or an ASSAP Study Day at Charlton House, London. Receiving a phone call from Mike was always exciting as it meant a new ASSAP case to investigate. In those days things were a lot simpler. Common sense prevailed for one thing. You met the witness, you investigated their experiences and you wrote a report which you sent to Mike. Job done. I still have my original ASSAP Approved Investigator ID card from those early days. I was a lot younger back then; but then again, weren't we all!

I have heard for sometime that Mike was writing a book about the paranormal, his thoughts and experiences, so when I received an email from him asking if I would like to review it, I jumped at the chance. I have always had a soft spot for Mike, as in my humble opinion, he was one of the best NICs that ASSAP had (along with Bill Eyre).

This book will certainly divide opinion. I got the impression that that was something Mike wanted to do. You will react to the book in one of three ways: agree with everything he says and applaud him for taking a pro-paranormal stance, strongly disagree with everything he says, or applaud him for taking such an open and honest approach to a baffling and confusing subject. As I read this book I found myself taking the third option.

Mike has had a long-standing involvement with studying the paranormal, from his student days as a member of the Society for Psychical Research and later the British UDO Research Association, Centre for Crop Circles Studies and of course ASSAP. There is a clear feel in the book that Mike feels that all of these organisations have 'lost their way' and embraced an all too sceptical approach (in some instances Mike strongly hints at a conspiratorial reason for this).

In 1999 Belgrave Hall Museum in Leicestershire hit the headlines when an anomalous image caught on CCTV was featured in the media. I remember the day well. My partner (now wife) Carolyn rang me at work to say she had seen the museum featured on the BBC afternoon news. She had rung the curator and secured the case for ASSAP. The rest, as they say, is history. The case was

admirably handled by local ASSAP investigator Terry Hewitt, who went on to be awarded the Michael Bentine Memorial Award for 1999-2000 for his report on the case. Over the next few months, members of Parasearch joined other ASSAP members from around the country in investigating what became known as the 'Belgrave Triangle'. The nearby pub and church were also centres of paranormal activity. Picture, if you will, the slightly surreal picture of respected paranormal authors John and Anne Spencer, Carolyn and me sat on deck chairs in the middle of the nearby church in the wee small hours waiting to see the passing ghost! You couldn't make this stuff up!

The highlight of the vigils we carried out at the museum must surely have been the ghost sighted by Mike Lewis in the nearby Talbot pub. Although we were not in Mike's vigil group, I vividly remember the buzz that went round all the groups at the end of the session - the ASSAP NIC had seen a ghost! Without a doubt this sighting had a profound effect on Mike. While on the subject of profound effects, the Near Death Experience he suffered a few years ago brought to mind the famous quote from Aldous Huxley about the man going through the door in the wall not being the same upon his return. The aftermath of the NDE will probably generate the most eyebrow raising in the whole book, as we see Mike now involved in all manner of 'Angel Therapies' and 'Angel Reiki' practices.

I think that Mike is to be applauded for taking the time to put pen to paper and share his honest views and experiences. Like me, you will probably find yourself disagreeing with some of his conclusions but also admiring him for writing such an honest book. An open mind is essential for any aspect of paranormal research, and certainly with this book. As the philosopher and psychologist William James once said, "A great many people think they are thinking when they are merely rearranging their prejudices".

**HAUNTED NORTH CORNWALL** by Michael Williams. The History Press.  
ISBN: 978-0-7509-5439-6. 96pp. £9.99

*Reviewed by Peter Underwood*

Another volume from The History Press in their 'Haunted' series is always welcome, but a new volume by the respected investigator, parapsychologist, Cornish bard and broadcaster Michael Williams is an outstanding event. In this volume we accompany the President of Paranormal Investigation on some truly extraordinary visits. His knowledge and experience of the subjects and the localities included make this an exceptionally enjoyable read, evoking as it does each individual area as we visit some remarkable places and meet some fascinating people.

We mingle with Prince Chula of Thailand at Tredethy where a ghostly butler walks; encounter J.B. Priestley at Old Borough House in Bossiney with his theories on the mystery of time; and accompany Sir Henry Irving visiting a Boscastle witch!

In this captivating volume and in the always excellent company of Michael Williams we look in at The Castle at Bude with its overwhelming sense of past days and where psychic contact is established with former resident Sir Goldsworthy Gurney; we visit mysterious Bossiney mound with its unexplained lights; the possible burial place of King Arthur's Round Table and a place where a pendulum produced some intriguing results. At extraordinary Tintagel we hear of various strange experiences including reports of the ghostly form of King Arthur himself; we visit beautiful St Nectan's Glen with its wealth of ghostly attributes and the Wootons Country Hotel where the ghostly form of a small boy has been glimpsed and where an interesting example of mediumship takes place. At and around Boscastle we find ghostly bell-ringing, ghostly boats with ghostly crews, a spectral naked man, the contemporary ghost of a man in tweeds, the ghost of a one-eyed miller, the unexplained lighting up of rooms and much more.

At St Clether, the holy well chapel has the ghostly form of a tall Victorian cleric; The King's Head at Five Lanes and the Highway-Man at Sourton are just two of the haunted inns visited and subjected to scientific investigation together with the lovely village of Altarnun where there are several reported ghosts. At Lonely Warleggan there is a shade of a former rector and a female 'presence', while the now disused Davidstow is haunted by phantom aeroplanes. We visit Jamaica Inn where its many ghostly activities are investigated and explored; an inn that takes the most prosaic of us back in time; and other ghosts of North Cornwall are examined: murdered Charlotte Dymond, gentle John Wesley and eccentric Parson Robert Stephen Hawker.

In the chapter 'More Ghostly Evidence' we are treated to examples of healing, clairvoyance, animal ghosts, a 'wise' woman, a mysterious garden and a haunted battlefield; these and other interesting, disturbing and convincing accounts of psychic activity, many appearing here for the first time, strongly suggest there are forms of energy and unknown forces, perhaps from 'the other side', that we all need to seriously consider.

We are indebted to Michael Williams for an immensely readable and superbly illustrated volume with never a dull moment. In a book replete with treasures everyone will find a favourite jewel.

# APPENDIX

Ghosts & UFOs

Fieldwork Time: 28/08/2013 - 30/08/2013

Conducted by YouGov

On behalf of Association for Scientific Study of Anomalous Phenomena

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## Background

**Methodology:** This survey has been conducted using an online interview administered to members of the YouGov Plc UK panel of 350,000+ individuals who have agreed to take part in surveys. Emails are sent to panellists selected at random from the base sample. The e-mail invites them to take part in a survey and provides a generic survey link. Once a panel member clicks on the link they are sent to the survey that they are most required for, according to the sample definition and quotas. (The sample definition could be "UK adult population" or a subset such as "UK adult females"). Invitations to surveys don't expire and respondents can be sent to any available survey. The responding sample is weighted to the profile of the sample definition to provide a representative reporting sample. The profile is normally derived from census data or, if not available from the census, from industry accepted data.

YouGov plc make every effort to provide representative information. All results are based on a sample and are therefore subject to statistical errors normally associated with sample-based information.

For further information about the results in this spreadsheet, please contact YouGov Plc (+44)(0)207 012 6231 or email [omnibus@yougov.com](mailto:omnibus@yougov.com) quoting the survey details.

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 2286 adults. Fieldwork was undertaken between 28th-30th August 2013. The survey was carried out online. The figures have been weighted and are representative of all UK adults (aged 18+).

# Association for scientific study of Anomalous Phenomena Ghosts & UFOs

Sample: All adults 16yrs+ UK  
Fieldwork: 28th-30th August 2013



Total	Gender			Age						Social Grade	
	Male	Female		16-24	25-34	35-44	45-54	55+	ABC1	C2DE	

1. believe some people have experienced ghosts (i.e. seen, heard, smelt or otherwise sensed the spirit of a deceased person or animal) : To what extent do you agree or disagree with each of the following statements? (Please tick one option on each row)

<b>Unweighted base</b>	2286	1046	1240	303	333	312	430	908	1318	968
All adults UK	2286	1097	1189	274	413	352	446	800	1257	1029
Strongly disagree	17%	24%	11%	23%	16%	15%	18%	16%	17%	17%
Disagree	10%	13%	7%	12%	8%	7%	11%	11%	10%	10%
Slightly disagree	7%	7%	6%	9%	10%	6%	7%	4%	6%	7%
Slightly agree	18%	16%	20%	13%	15%	26%	18%	19%	19%	17%
Agree	18%	13%	22%	16%	14%	17%	14%	23%	19%	16%
Strongly agree	16%	12%	20%	11%	20%	18%	17%	15%	15%	18%
Not sure	14%	15%	13%	15%	17%	11%	15%	14%	14%	15%

I believe some people have witnessed UFOs (Unidentified Flying Objects) that have an extraterrestrial origin : To what extent do you agree or disagree with each of the following statements? (Please tick one option on each row)

<b>Unweighted base</b>	2286	1046	1240	303	333	312	430	908	1318	968
All adults UK	2286	1097	1189	274	413	352	446	800	1257	1029
Strongly disagree	20%	24%	17%	25%	18%	17%	21%	20%	20%	20%
Disagree	16%	16%	15%	15%	19%	14%	14%	15%	17%	14%
Slightly disagree	9%	8%	10%	13%	10%	8%	8%	7%	9%	8%
Slightly agree	18%	16%	19%	17%	16%	24%	18%	16%	17%	19%
Agree	13%	12%	14%	11%	11%	13%	13%	16%	13%	13%
Strongly agree	7%	7%	8%	3%	6%	11%	9%	8%	7%	8%
Not sure	17%	17%	17%	16%	19%	13%	18%	18%	16%	18%

Cell Contents (Column Percentage)

East	London	South	Wales	Scotland	Working full time	Working part time	ALL WORKERS (NET)	Working status					Marital Status				
								Full time student	Retired	Unemployed	Not working/ Other	Married/ Civil Partnership	Living as married	Separated/ Divorced	Widowed	Never married	
214	374	574	108	179	1154	194	1348	141	577	72	148	1110	242	188	75	510	
16%	20%	19%	19%	10%	16%	5%	16%	3%	17%	3%	6%	15%	9%	12%	19%	20%	
12%	15%	10%	6%	7%	10%	6%	10%	9%	11%	6%	7%	11%	8%	8%	15%	7%	
8%	6%	5%	4%	8%	7%	7%	7%	10%	5%	8%	5%	8%	9%	5%	3%	9%	
18%	18%	20%	18%	16%	19%	19%	19%	12%	20%	8%	19%	19%	20%	18%	20%	19%	
15%	14%	18%	17%	17%	17%	23%	18%	13%	19%	9%	23%	20%	20%	18%	12%	14%	
17%	12%	13%	17%	24%	16%	18%	16%	8%	14%	29%	29%	15%	15%	28%	12%	17%	
13%	14%	15%	19%	11%	15%	12%	14%	17%	14%	11%	10%	14%	9%	11%	19%	14%	
214	374	574	108	179	1154	194	1348	141	577	72	148	1110	242	188	75	510	
20%	23%	22%	24%	23%	17%	14%	18%	35%	22%	18%	15%	10%	15%	18%	24%	22%	
14%	23%	16%	24%	16%	14%	17%	15%	9%	15%	28%	15%	14%	14%	12%	14%	14%	
11%	6%	8%	8%	13%	16%	7%	16%	8%	7%	3%	6%	9%	9%	7%	6%	11%	
14%	14%	17%	16%	19%	13%	20%	13%	11%	17%	11%	14%	18%	20%	14%	19%	17%	
15%	12%	14%	16%	12%	13%	13%	13%	11%	15%	12%	14%	15%	15%	17%	15%	10%	
5%	6%	6%	7%	13%	6%	11%	7%	2%	7%	16%	16%	6%	8%	16%	7%	9%	
16%	18%	17%	18%	15%	17%	19%	18%	17%	17%	13%	15%	16%	15%	16%	15%	18%	

	Children in Household				Government Region												
	0	1	2	3+	ALL WITH CHILDREN IN HOUSEHOLD (NET)	Refused	North East	North West	Yorkshire and the Humber	East Midlands	West Midlands	East of England	London	South East	South West	Wales	Scotland
1700	257	189	57	503	83	82	234	175	159	187	214	214	374	385	189	108	179
1623	276	229	83	588	75	96	281	208	161	214	219	299	359	164	114	199	
17%	17%	14%	22%	17%	14%	10%	12%	20%	14%	10%	10%	20%	17%	24%	19%	16%	
10%	10%	12%	2%	10%	9%	9%	9%	13%	6%	6%	12%	13%	9%	12%	6%	6%	
6%	7%	6%	16%	7%	7%	7%	8%	9%	4%	7%	8%	6%	7%	7%	4%	7%	
20%	14%	14%	27%	16%	12%	18%	18%	16%	23%	16%	16%	16%	20%	19%	19%	16%	
17%	19%	24%	13%	20%	18%	22%	19%	16%	24%	19%	15%	14%	14%	15%	16%	17%	
16%	17%	14%	15%	16%	19%	17%	17%	14%	19%	22%	17%	12%	13%	14%	14%	17%	
13%	15%	16%	12%	15%	22%	12%	18%	13%	11%	12%	13%	14%	15%	15%	15%	19%	
1700	257	189	57	503	83	82	234	175	159	187	214	214	374	385	189	108	179
1623	276	229	83	588	75	96	281	208	161	214	219	299	359	164	114	199	
21%	21%	15%	24%	19%	14%	14%	18%	22%	17%	16%	16%	20%	20%	22%	27%	23%	
15%	18%	13%	15%	16%	15%	9%	20%	19%	12%	17%	16%	20%	14%	17%	17%	9%	
8%	8%	8%	16%	9%	11%	13%	6%	8%	10%	8%	11%	6%	6%	6%	6%	6%	
18%	14%	23%	18%	18%	14%	16%	17%	21%	17%	25%	15%	14%	14%	17%	18%	16%	
13%	12%	20%	9%	15%	15%	24%	12%	9%	14%	12%	4%	12%	16%	16%	16%	12%	
8%	10%	5%	6%	7%	5%	10%	9%	3%	8%	9%	5%	6%	6%	7%	6%	7%	
17%	18%	16%	12%	17%	24%	14%	20%	18%	21%	14%	16%	18%	16%	16%	18%	15%	

Social Media (monthly or more)				Educational qualification (highest)				
Facebook	LinkedIn	Google+	Twitter	Degree or above	GCSE or equivalent	A-level or equivalent	Other	No qualifications
1357	306	117	497	1009	321	360	400	123
1404	256	117	497	862	368	395	439	150
16%	24%	13%	18%	19%	14%	21%	12%	18%
10%	15%	14%	12%	12%	8%	9%	10%	6%
7%	5%	7%	6%	7%	6%	6%	7%	5%
19%	17%	12%	18%	19%	18%	16%	20%	16%
16%	11%	21%	16%	16%	23%	17%	18%	15%
18%	15%	24%	18%	13%	18%	17%	19%	26%
14%	14%	9%	12%	14%	12%	13%	14%	15%

1357	306	117	497	1009	321	360	400	123
1404	256	117	497	862	368	395	439	150
19%	25%	18%	20%	23%	18%	23%	14%	23%
16%	21%	15%	17%	19%	12%	18%	14%	7%
8%	11%	9%	9%	9%	6%	9%	10%	6%
18%	14%	13%	15%	16%	20%	17%	20%	15%
14%	9%	28%	17%	12%	16%	12%	15%	13%
7%	7%	8%	7%	6%	9%	6%	9%	15%
17%	13%	8%	15%	15%	19%	16%	19%	22%

# ANOMALY: GUIDANCE NOTES & HOUSE STYLE

## SUBMISSION CONTENT:

Papers should be submitted in the English language and should directly relate to some area of psychological research.

Authors take responsibility for any views aired, and published articles do not reflect the views of ASSAP.

## TYPES OF SUBMISSION:

Please note that word limits are flexible.

- Letters may relate to previous articles published and can be written in a personal style. Letters should not be more than 1500 words.
- Book reviews should not be greater than 1500 words.
- Articles and research notes should not be greater than 8,000 words. We encourage authors to write such articles in an impersonal style, but this is not mandatory.
- Diagrams and photos should be submitted in grayscale if possible with a dpi of 300, but do seek guidance if you are unsure.

## FOOTNOTES AND REFERENCES:

We prefer that footnotes are not used, however notes may be made at the end of articles with an appropriate numbering system in the text.

We encourage all authors to provide references. This means that if you make an assertion of fact, especially about previous research conducted, you cite the source article, book or web address.

We prefer the Harvard system of referencing. Sentences containing references should include the author and year in parentheses, e.g. "theories suggest that orbs are not paranormal in nature" (Townsend, 2006).

Where such references are included in the text an alphabetical list should be included at the end of the document, in the following style:

Henry, J. (Ed.) (2005). *Parapsychology: Research on Exceptional Experiences*. East Sussex: Routledge

Parapsychological Association (2006a) *What is the PA?*

URL [http://www.parapsych.org/mission\\_statement.html](http://www.parapsych.org/mission_statement.html) Date accessed: 04 September 2006.

Thalbourne, M.A. (2005) 'The Pros and Cons of Being a Parapsychologist'. *Society for Psychological Research: Paranormal Review*, 36, 21-22

If you are uncertain please always seek guidance.

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Alternatively the standard ASSAP postal address can be used if email is not available.

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