



Investigating Anomalous Subjective Experiences: Believing is Seeing is Believing (Part Two)

Barry L. Beyerstein Simon Fraser University

In the last issue of *The Rational Inquirer*, I presented research on hallucinations, various ways they can be triggered, and how this might explain certain allegedly paranormal phenomena. In this, the concluding part of the essay, I discuss how skeptics, armed with this knowledge, might be able to use it to investigate, or provide naturalistic explanations for, such events.

How to approach a case. The skeptic's first job is to try to allay the inevitable defensiveness and animosity that anything but total acceptance of the paranormal explanation is bound to engender. The next step is to try to get a detailed description of the events surrounding the dramatic experience. Try to convince the narrator that you are not doubting his or her account of the content of the experience or what it felt like at the time. Acknowledge that you can't prove that his or her preferred interpretation is wrong, just that you'd like to suggest some other explanations that he or she may not have considered. Try, gently, to get the informant to realize that even highly intelligent, honest, and non-pathological people can, given the right conditions, be seriously mistaken about the actual causes of what they have experienced. This will be an uphill struggle because experiences such as these feel so real and there are so many pay-offs for adhering to the supernatural explanation. Often, it seems quite absurd to the experiencer for someone who wasn't there even to suggest that it might have all been a big misinterpretation.

The difficulty stems from the fact that it is hard to convince someone who has not done his homework that all perception is much more of a creative mental construction than most of us realize. Sensory/cognitive systems in the brain manufacture even the simplest percepts from the bare skeleton provided by the sense organs and flesh it out with information from inference and memory. What we accept as reality is in fact a cognitively-constructed model in our brains. Under certain conditions, events can disrupt the orderly construction of the

Table of Contents

A Summary of the Panel Discussion on Cults Sponsored by The BC Skeptics	1
Aims and Executive	2
Letters	4
The Museum of the Paranormal	4
SETI at Home	5
Into the Electronic Age	6
Meetings	8
Friday, June 1st, 2001, 7:30 p.m.	8

mental reality model. At such times, the person can be treated to a fantastic experiential tableau of great complexity, emotionality and believability. In other words, a complex hallucination. Just as people are generally unaware of the constructed nature of our everyday sense of reality, and what can go wrong with the process, they also tend to be unfamiliar with the fact that hallucinations in non-psychotic, non-intoxicated individuals are not as rare as we tend to think. Nonetheless, given that hallucinations suffer from such bad press in our culture, it is not surprising that the last thing someone who has had a momentous, life-changing subjective experience wants to hear is that it was only a hallucination.

Maria's NDE: A sample investigation. I have debated Raymond Moody, Maurice Rawlings, Madelaine Lawrence, Howard Storm, and other luminaries from the "Near-Death Studies" movement on a number of occasions. While they usually concede that all the requisites of the NDE are known to occur in other states of consciousness and that the brain is capable of generating complex hallucinations, including the blessed sense of peace and feelings of being out of one's body, pulled down a tunnel toward a bright light, etc., they steadfastly refuse to accept that this is all the vaunted NDE really is. When pressed, they have typically fallen back on the claim that some NDE experiencers have recollections, after they have been revived, of things that they have seen while supposedly out of their bodies, things that they could not have possibly known if their vital essence or soul hadn't actually left their bodies but retained the ability to see, hear, think, remember, etc., while in this disembodied state. An unequivocal instance of this sort would create serious problems for the hallucination explanation of NDEs and indeed for the entire materialist theory of mind, which says that mental states are identical to brain states and cannot exist independently of a functioning brain (1).

Aims and Executive

The BC Skeptics support the aims of CSICOP, the Committee for the Scientific Investigation of Claims of the Paranormal. Stated briefly, these aims are: To provide a reliable source of information to the public and media on claims of the paranormal; To provide public education in areas of scientific method and paranormal claims; To facilitate open-minded testing of paranormal claims; To provide a forum for the exchange of views.

BC Skeptics is an open organization and your involvement and support is encouraged. A subscription to the newsletter is \$15 annually (\$6 for students). The newsletter is published one to four times a year, and public meetings are held on the same schedule. **Your letters, articles or comments are encouraged.**

Check your mailing label! The top right hand corner shows your subscription expiration date.

BC Skeptics Executive

Chairman: *Barry Beyerstein* 291-3743 (w)
BBeyerstein@arts.sfu.ca

Newsletter Editor/Treasurer:
Lee Moller 929-6299
LeeMoller@shaw.ca

Secretary: *Paul Digney* 263-9122

Web Master: *Ted Powell*

Education Chairperson: *Theo Meijer* 250-656-9772

Directors at large: *Dale Beyerstein, Ken Phelps,
Gary Bauslaugh, Ted Powell*

In these debates with NDE proponents I have asked them for their best example of recollections from an NDE that could not be accounted for by hallucinatory mechanisms. The famous case of "Maria" and the running shoe on the roof was invariably cited as the most convincing they had to offer. Along with two of my students, Hayden Ebborn and Sean Mulligan, we examined the Maria case to see if it could support all the weight the near death studies movement places upon it (2). Sean and Hayden travelled several times to Seattle, where the event took place. They visited the hospital and interviewed the social worker who assisted Maria after her NDE. The social worker was Kimberly Clark who has gone on to prominence in the near-death studies movement and written yet another best-selling NDE book based on supposedly verified facts from the Maria case. Hayden and Sean also attended a meeting of local NDE enthusiasts and engaged them in conversation. They came away with the clear impression that these people were scientifically illiterate and far more interested in bolstering their

religious beliefs than they were in getting to the truth of the matter. Ebborn, Mulligan and I published the results of our investigation in the July/August 1996 issue of the *Skeptical Inquirer* (2). The version of the story told by those who believe that the NDE is really a glimpse of the afterlife says that Maria observed aspects of the hospital in which she suffered her CPA that she could not have possibly been aware of unless she had really been out of her body, floating above the building. The clincher for the NDE community is the oft-heard assertion that she supposedly saw a running shoe that was on the roof of the hospital (where she had never been) and enquired about it after she had been resuscitated. Too much for mere coincidence, they say. Is this not the "smoking gun" that finally proves the existence of the soul scientifically? Well, ... not necessarily. As the story is widely disseminated, it sounds very impressive. As usual, though, under careful examination, the beautiful story begins to fall apart. Looking around the site, it became immediately apparent that the things that Maria supposedly couldn't have seen unless she had been hovering above the building could all have been communicated to her by plausible, prosaic routes.

We admit that none of this proves that Maria was not outside her body during her CPA/NDE. It does show, however, that the canonical version of this oft-repeated story has become embellished in a number of ways that seem, at first glance, to quash the usual skeptical counter-explanations. In sum, the story of Maria's NDE turns out to be so full of holes that it offers no credible proof that she experienced anything but a very vivid hallucination during her CPA.

What should the skeptical investigator keep in mind in investigating cases like this?

I. The need to get as close to the actual scene of the experience and the first-hand accounts as possible.

II. The need to ask pointed (but polite) questions about the setting in which the event occurred and about the background and prior beliefs of the experiencer(s). These data are rarely included in popular versions of these stories and can often suggest naturalistic counter-explanations. E.g., were sleep, fatigue, emotional crises, strong motivational states, or prescription or recreational drugs involved in any way? Does the experiencer have a history of migraine, mental problems, or prior head injury? Is there a history of unconventional beliefs or prior claims of a similar sort? Is there any possibility of secondary gain, over and above the obvious psychological payoffs such as emotional comfort and the much-prized sense of "specialness"?

III. The need to proceed in as non-threatening and non-accusatory a manner as possible. At the outset, you will probably have no grounds for accusations such as fraud, intoxication, or mental illness anyway, and the likelihood of someone being sincere but mistaken is usually greater than that of these more sordid possibilities, which are to be proven, not assumed at the outset. You will need the experiencer's cooperation if you are to get to the bottom of the matter and you

*(On going to war over religion:) "You're basically killing each other to see who's got the better imaginary friend."
Rich Jeni*

must endeavour to get him or her to be open with you. Raising experiencers' hackles with a confrontational manner will generally lead only to them clamming up or digging in their heels and sticking even more steadfastly to the original interpretation of their story. Acknowledge that you couldn't prove them wrong, even if you wanted to; you'd just like to explore some possibilities with them, not ridicule them. Keep assuring respondents that you start with no a priori assumptions that they are lying or deranged in any way. Perfectly normal, honest people frequently have anomalous experiences.

IV. Remember that the telling details and "air-tightness" of the story tend to improve over time. Look for signs of embellishment or details that seem improbable for anyone to have been able to notice at the time.

V. Do not be overly impressed with the character references, accomplishments, or credentials of the narrator(s). We are all prone to errors of perception, interpretation, and recollection. Competence is domain specific. High achievement in one sphere does not automatically confer expertise in other areas. Likewise, one's demonstrated astuteness and critical acumen in certain realms can easily be set aside where "pet beliefs" are concerned.

VI. Do not underestimate the power of the prospect of secondary gains to bias people's recollections. The opportunity to sell the story, get on TV, or even receive the undivided attention of famous persons, academics, or media personalities provides a strong but not necessarily conscious incentive to "gild the lily."

VII. Be aware of the effects of strong social, ideological or religious commitment on the part of the narrator(s). This loyalty to a higher cause provides an incentive to exaggerate in order to win the hearts and minds of converts. It is easy to inadvertently "borrow" details to make the story more convincing, not because they were actually observed, but because "they must have been there" in an event of this type. And, after all, it's in the service of a good cause.

VIII. Realize that the foregoing caveats do not necessarily entail conscious attempts to embroider or to prevaricate. Subtle psychological processes, mediated by the prospect of monetary, social, or psychological gains, can easily cause people to alter their memories with little awareness that they are doing so.

IX. Do not accept at face value strong, apparently sincere, assertions that the narrator had no prior interest in or knowledge of UFOs, aliens, lake monsters, bigfoot, an afterlife, or whatever the experience involved (the implication being that they could not have been influenced by wishful thinking, expectation, or suggestion). Our culture is immersed in these dubious

In science it often happens that scientists say, "You know that's a really good argument; my position is mistaken," and then they actually change their minds and you never hear that old view from them again. They really do it. It doesn't happen as often as it should, because scientists are human and change is sometimes painful. But it happens every day. I cannot recall the last time something like that happened in politics or religion.

Carl Sagan, 1987 CSICOP keynote address

phenomena. It is virtually impossible to avoid them and residues of this barrage of information can lurk unobtrusively in the recesses of our consciousness, even if we have not made a formal study of these things or sincerely can't remember being exposed to them. Nonetheless, they often spring to mind when someone is confronted with an anomalous experience requiring identification and explanation. Remember that, due to a process known as "cryptomnesia," we can be exposed to information in novels, TV programs, movies, newspapers, or casual conversations and forget how, when, and from whom we obtained it. It can pop up later in various contexts with no subjective awareness that we had been exposed to it previously. Our mystery-mongering culture and its penchant for magical thinking encourages us to jump to the conclusion that any anomalous experience we have had could only have a spooky explanation.

X. Likewise, be aware that strong social, political, or religious commitment has been shown, time and again, to affect critical judgement. Researchers have perpetrated numerous hoaxes on UFO believers, Sasquatch aficionados, and devout fundamentalists, not for the usual reasons but rather to gauge their powers of observation and critical thinking. Unlike most hoaxes, however, which try to make the event as believable as possible, these hoaxes are made purposely transparent. Those who are not blinded by the will to believe should be able to see through them with ease. True believers rarely do, however. If your informant is of this ilk, his or her recollections may well be tainted in ways that make the story support their prior beliefs.

XI. If, after careful investigation, you smell a hoax or a false story being spread for financial gain, notoriety, or ego aggrandizement, do not necessarily be dissuaded by the narrator's status, occupation, accomplishments, apparent sincerity, kindness, or seeming lack of incentive to deceive. The motivations to prevaricate can be subtle and complex. The psychological literature on hoaxing is replete with examples of socially-prominent, well-educated, sober people who have pulled off outrageous hoaxes. Kindly grandmothers, "innocent" children, and parish priests, have been caught out on occasion, along with many others whom one would think would have too much to lose by being caught perpetrating a hoax. A recent widely-publicized poltergeist incident in France was eventually exposed as the work of the town's mayor, a model of probity and rectitude in the eyes of the community.

1. Beyerstein BL. *The brain and consciousness: Implications for psi phenomena. Skeptical Inquirer*, 1987; 12(2): 163-173.
2. Ebbert H, Mulligan S, Beyerstein BL. *Maria's near-death experience: Waiting for the other shoe to drop. Skeptical Inquirer*. 1996; 20(4): 27-33.

Experiences, continued on page 11...

David Icke

Sean O'Connell

A charismatic chap called David Icke recently graced the Lower Mainland with his presence, adding to the gaiety of public life in the process. Some minor footnotes about this odd Brit are worth adding to BC's burgeoning chronicles of crooks, crocks, creeps, cranks, clots and clowns.

Icke (pronounced 'ike', as in 'I Like Ike') is the harbinger of what must be one of the nuttiest of all conspiracy theories. He has enough business acumen to include all the usual suspects in his new, improved version of how we're all puppets on strings being pulled by some secret New World Order organization, to make his version of reality acceptable to the widest possible range of paranoid punters.

An accurate and fairly comprehensive account of Icke's particular delusions was given in the Georgia Strait of 9-16 March, written by Brian 'Godzilla' Salmi'. Given the nature of Icke's particular lunacies, it is commendable that the perennially juvenile Salmi, official Scourge of Mayor Owen, should have penned such a restrained and even-handed account of Icke's career and teachings.

The first, and perhaps most illuminating, addendum to Salmi's account concerns that period of Icke's recent career between when he gave up being an authoritative and entertaining soccer commentator on Britain's national TV, and his later re-surfacing on the international stage as a professional Cassandra warning us all of the presence of the evil extraterrestrial Lizard People. When the Gospel of Icke comes to be written, this period will probably be called 'The Interregnum'.

Many football-mad Britons were sorry to lose the informed, witty and literate musings of Icke during televised matches. In North America, he would be called a 'color commentator,' and Icke built a loyal following both at home and abroad with his often acerbic and iconoclastic observations. He left a gaping hole in the sports schedules when he suddenly and inexplicably dropped out of public purview.

It is difficult to explain to NAlanders quite how much proper football ('soccer', a shortened form of the term 'Association Football') means to the worldwide community of the sport's fans. The late Aif Ramsey, former manager of Manchester United and the English national team, was once asked by an American interviewer why people were so besotted with the antics of footballers. It was suggested to him it was almost as important to fans as life or death. Sir Aif replied "Oh, no, not at all. It's much more important than that."

So it was with some amazement to his loyal public when Icke re-emerged in the public arena a couple of years later, clad in flowing white robes and preaching a strange litany of quasi-religious nostrums. He began touring the circuit of draughty local meeting halls, usually accompanied by a bevy of attractive busty wenches, where he would tell stunned admirers he was the reincarnated Jesus, come again to bring

enlightenment and world peace and that kind of thing, in exchange for just a small donation.

Photocopies of this article can be obtained from the author, Sean O'Connell, at 271-0814. Had he been anyone else, this would have aroused no more than a tolerant smile and half-raised eyebrow. But when someone of his public persona undergoes such a transformation, it becomes a matter of burning interest, capable of selling lots of additional copies of the tabloid press.

North America has no equivalent of the British gutter media. The stuff sold at supermarket checkouts is a mere bagatelle, and pretty thin gruel at that. In spite of, or perhaps because of, Britain's draconian libel laws, the merchants of gossip really go to town when they get their halitotic jaws around a new victim, a blood sport only paralleled in ferocity by Roman gladiatorial contests and the modern pogroms.

Even the stoutest of hearts cannot take such onslaughts for any length of time. So it was with Icke, who could no longer leave his home without running an unending gauntlet of paparazzi and gawpers. That they were inflicting their attention on a seriously deranged individual struggling with his own demons mattered not a whit to them. After a few months of this intolerable torment, Icke threw in the towel and absconded abroad and out of the laser-beam of British public attention.

It appears Icke spent the following months in his foreign hideaway licking his wounds and reinventing himself. There is little benefit to the maladjusted ego in being just another modern Messiah or Napoleon, for the stark corridors of lunatic asylums are full of similarly damaged folk, and the market for them is well past saturation point. So he spent his many idle hours cooking up another weird olla of prophecy and alarums to spread, the better to attract the fawning gaze of the feeble-minded.

There is no training course for would-be conspiracy theorists as such, although clinical psychologists have done a good job of describing and treating the presenting symptoms of this disease. The only reliable method of entering the realms of such dark parts of the human psyche is to study the works of previously successful merchants of similar stuff, and rearrange it in some novel form which does not infringe their copyright. Thus it was that Icke gobbled up all he could of the works of luminaries like Lyndon LaRouche and gun-crazed US survivalist movement, pseudo-intellectual writings of neo-Nazis like the recently-discredited David Irving, the apocalyptic rantings of sundry religionistic cultists, all leavened with a goodly sprinkling of scientific-sounding gibberish garnered from popular New Age pulp paperbacks.

Icke was careful not to re-launch his career in the UK, fully aware of the fiendish pack of hell-hounds ready and waiting for him. Fortunately for him, the gutter press was enjoying goring various loopy royals, ranging from someone doing voice-overs on the airways lauding feminine hygiene products, to a chronic anorexic with illusions of grandeur.

He has also been cautious in his choice of villains. He is well aware of the various national laws in force about incitements to racial and ethnic hatred, so he was careful not to name particular groups or individuals. However, his target audience would have to be not only stupid, but completely ignorant, to miss his choice of conspiratorial nasties, which includes international Jewry,

the European Union and the United Nations, the Bilderbergers, the Club of Rome, the Trilateral Commission, the WTO and IMF (naturally), The Womens' Institute and the Girl Guides Association and all the other usual suspects. Having written a remarkably silly book entitled 'The Truth Will Set You Free', he began his worldwide peregrinations peddling it to whomsoever was gullible enough to purchase it. It should be noted that this first attempt at revelation has subsequently undergone considerable revision, in the light of his 'researches' and feedback from his adoring followers.

His is a classic example of publicly setting up straw men and then attacking them, all the while watching through hooded gimlet eyes the effect of such antics on his customers. Those targets which his fans did not like to see attacked were swiftly dropped from his canon, to be replaced by more acceptable victims. It truly was a textbook case of demagoguery as a work in progress.

His initial travels brought him several times to Canadian shores, and he built up a loyal following among the lost and wandering souls in this tolerant and pleasant land. In particular, he boasts many acolytes on Vancouver Island and the hinterland of mainland BC. A couple of years ago, this discipleship grew to such proportions that the 'Council Of Canadians', the 100,000-strong crew of Left-leaning Canadian nationalists led by the stalwart Maud Barlow, became acutely embarrassed by the number of its own members who had embraced this peripatetic lunatic. An unseemly shouting match ensued over the Internet and in those scrappy publications which provide grist for the loose Left's mill, and several expulsions from the CoC occurred. It was great fun to watch from a distance, as bare-knuckled bouts broke out between those august icons of Leftist nationalism and the far-flung unclubbables who do the boring footwork of evangelism in the boonies.

Having wreaked much havoc among this disparate crowd of malcontents, Icke departed with full pockets and a mailing list worth its weight in diamonds. Having drunk deep draughts from the well once, it was only a matter of time until he returned, this time with a much better oiled machine for Hoovering the loose banknotes from the pockets of the dispossessed. In the meantime, sober organizations such as the Anti-Defamation League, the Jewish Defense League and other bellwethers of gathering storms went into action. The Canadian Immigration people were alerted, and when, late last year, Icke once again trolled into Pearson Airport. He was met by a distinctly unfriendly crew rightly anxious to keep this kind of hate-merchant away from Canadian shores.

He wrote a lengthy article that appeared in a curious newspaper-style publication called 'Discourse & Disclosure', edited by a tough biddy called Sue Potvin in rural Ontario. This conflation of news about the myriad meanderings of Canadian Leftism, single-issue populism and execrable verse, appears irregularly about six times a year, and is indispensable reading for any student of the Canadian underground political scene, on a par with 'Alberta Reports' at the other end of the spectrum. If you ever feel yourself floating away from the mainstream of Canadian culture, reading a few copies of these two documents will act like a strong cold shower, rapidly whipping you back onto the straight and narrow.

In this article, Icke claimed, probably correctly, that he was on a 'Watch For' list of undesirables which Immigration people the world over share among themselves. He was, he says, subjected to considerable harassment and personal expense, and he took the opportunity to lambaste official Canada for its antagonism to 'free speech' and such like rants. Nonetheless, not being in possession of any directly incriminating evidence, they reluctantly had to grant him right of entry, and he was able to continue with his road show of ridiculous and reckless hatemongering, always being careful to avoid falling afoul of the Law, which no doubt kept a sharp eye open on him.

Wallace Sampson Lectures to the BC Skeptics at Simon Fraser University. Twice!

Dr. Wallace Sampson, Clinical Professor of Medicine at Stanford University, was in Vancouver in mid-November, 1999, and again at the end of March, 2000. On both occasions, he kindly agreed to speak to the BC Skeptics on various aspects of complementary and alternative medicine (CAM). Martin Renaud, a graduate student in evolutionary psychology at SFU, took detailed notes and shares them here with BCS supporters who couldn't make it to these excellent talks in person.

Alongside a successful clinical and academic career in oncology and hematology, Dr. Sampson has long been one of America's leading critics of medical quackery. A founder and past chair of the National Council Against Health Fraud, he is also editor of the new journal, *The Scientific Review of Alternative Medicine*. He lectures and consults widely, appears regularly in the media, and testifies frequently in court regarding unsubstantiated medical claims. In addition to exposing honest mistakes in clinical research, Dr. Sampson has been at the forefront of attempts to deter medical frauds who prey on desperate and vulnerable people. Using the careful reading and other investigative methods described in these lectures, Dr. Sampson has exposed numerous flaws in widely touted publications claiming to support various areas of CAM.

A Summary Of Wallace Sampson's Sfu Lectures

Notes taken by Martin L. Renaud, edited by Barry Beyerstein, Department of Psychology, S.F.U.

In his first lecture to the BC Skeptics, on November 16, 1999, Dr. Sampson discussed how to recognize the flaws in published research on alternative medicine. In his second lecture, on March 24, 2000, he showed how these careful reading techniques have exposed many erroneous claims by proponents of CAM.

Dr. Sampson began his first lecture by emphasizing that, although he does not believe that personal anecdotes can ever establish the effectiveness of a treatment, he did not want to belittle people's personal experiences - people often perceive subjective benefits from treatments that fail to produce any objective improvement of symptoms in controlled studies. He did not offer extensive explanations for why people perceive that they get better in these situations (though such explanations definitely exist - e.g., see Barry Beyerstein's papers at www.crhpn.net). Instead, Dr. Sampson concentrated on the subtle methodological flaws in the widely-touted studies that claim to offer scientific support for these techniques. He emphasized that in this modern era of super-specialization the peer review process often breaks down where CAM research papers are concerned. Frequently, journal editors will send a CAM paper to a fellow supporter of the alternative treatment for review, rather than to a researcher with the scientific and methodological expertise necessary to expose any errors in conducting and interpreting the research. To identify these flaws, a reviewer must start with the same skeptical approach that should always be applied to any purportedly new discovery in science. This is not a bias, it is only a healthy skepticism that realizes that even honest and competent researchers can often be wrong for a variety of reasons. Extraordinary claims require extraordinary evidence. If the claim is implausible because it contradicts other well-established findings, and/or because it goes well beyond currently accepted claims (both of which are true of most of CAM), then one would be wise to look carefully for defects in the research before accepting its conclusions at face value.

Science is more than its current body of data, Sampson emphasized. It is a way of asking testable questions and evaluating the evidence for and against the proposed answers. Postmodernists claim that scientific data are merely social-constructions, i.e., arbitrary opinions arrived at primarily by political influence. They view objectivity as a myth and consider science as only one of "many ways of knowing." Their arguments are internally self-contradictory and full of misunderstandings about science but they are still being taught in many reputable schools. Although supporters of CAM often espouse this anti-science, relativist position, they are quick to seize upon any shred of scientific evidence that might be seen as supporting their treatments. But competent investigators know that there are many ways of making mistakes in research and that a single study never settles an important debate in science. Multiple independent replications of findings are essential if they are to be believed. A careful analysis of the logic and methodology of a scientific paper that is contradicted by much other research in the area usually reveals that the "revolutionary" paper contains fatal flaws. Most often, it is not fakery, it is simply that errors and confounds have crept into the study's procedures or its statistical analysis.

The physicist Russell Turpin has identified a number of evidential and theoretical shortcomings that can underlie erroneous conclusions in research papers (<http://quasar.as.utexas.edu/BillInfo/Quack.html>). There are many reasons one should be skeptical about a researcher's claims when they seem too weird or too good to be true. For example, data derived from subjective observations are open to

unintentional bias and thus are not as reliable as more objective, preferably automated, measures (especially if the observer has a stake in the outcome). Reported effects that are quite small are particularly doubtful if they seem unlikely on the basis of previous research. If in a series of attempted replications tighter controls produce successively smaller results, then the efficacy of the method is in still greater doubt. A real phenomenon should be repeatable by anyone who follows the report's methodology section carefully. For this reason, negative results, even if few in number, count more against a proposed method than positive results count for it.

We should always be skeptical of a theory that has no direct supporting evidence. Likewise, theoretical positions should become more refined over time as new evidence is gathered (the theory behind CAM has remained stagnant; it is ancient, changing only cosmetically, never in substance). An absence of accumulating evidence for a theory or a bad track record in producing successful predictions should both suggest that other theoretical explanations are preferable. Often in fringe science research, competing orthodox explanations are poorly investigated and controlled for, even when the conventional theory provides a better explanation for the data being presented. New evidence must be overwhelming if a revolutionary theory is to be accepted. Also, previous well-established theories and knowledge must be compatible with the novel theory (just as Newtonian mechanics is compatible with quantum mechanics). For example, if acupuncture works for pain, any theoretical explanation should be consistent with other related fields of inquiry, such as the gate control theory, the endorphin literature, etc. A paradigm shift occurs because of irrefutable data, not due to theoretical speculations alone.

Other reasons for skepticism about published research in the field of CAM identified by Dr. Sampson include improper use of control groups, failure to adhere to accepted randomization protocols for assigning patients to treatment or control groups, unequal run-in periods (baseline runs of different duration for experimental and control conditions), stopping the study prematurely when the results seem to favor the hypothesis (i.e., taking advantage of random variation), misuse of statistical tests, and improper handling of outliers (fluke, extreme observations that can bias results). Also, a retrospective study may be reported as if it were a prospective one - the latter rightly enjoying much greater believability. CAM researchers have frequently used multiple endpoints that were not chosen this advance (many measures are taken and investigators only report the few that come out statistically significant, probably by chance). CAM believers have also claimed support from dubiously conducted meta-analyses of published research. And, of course, the biggest source of error of all is the failure to use proper placebo controls and to adequately blind both the provider and the recipient of the treatment.

Furthermore, Dr. Sampson contends, CAM persists in misusing language. Even things that clearly don't work are called alternative and emotionally-laden "buzzwords" are used to convince people in what are political rather than scientific appeals. In his book "Death of Medicine," Carlson described changes in the medical system that led him to predict the rise of alternative medicine in the 70's. He noted that words like

integrative, unorthodox, unconventional, etc., are used intentionally by CAM supporters because their emotional connotations manipulate consumers to accept their way of thinking and downplay the fact that CAM has very little scientific support. Proponents of alternative therapies whom Sampson has debated have admitted that this misuse of language is part of an intentional strategy to win converts.

For the remainder of his first lecture, Dr. Sampson illustrated many of these points with examples from published research that has been used to promote alternative therapies. He first turned to homeopathy, the nonsensical idea from the 1700's that symptoms can be cured by absurdly dilute solutions of chemical substances which, if taken in concentrated form, would actually cause the symptoms in question. After a brief discussion of homeopathy's history and its bizarre theoretical rationale, Dr. Sampson described the defects in two of the most publicized studies that claim to show its validity. In the first of these, published in *Nature*, Prof. Jacques Benveniste and colleagues asserted that the homeopathic method of infinite dilutions produced dramatic effects on histamine release from cells in test tube preparations. Closer examination of the actual published data, however, showed that the effect fluctuated randomly with each successive dilution (in other words, the results were random). Subsequent replications of the experiment generated similar random results and the study has now been discredited. One follow-up investigation clearly pointed to experimenter bias as the source of the apparently positive initial results (the measures were subjective estimates taken through a microscope by a non-blinded true believer in homeopathy). As an aside, Dr. Sampson noted that Benveniste's current claim is that he can "energize" pure water over a telephone line to produce homeopathic effects. Sad to say, Benveniste was once an accomplished immunologist with a respected scientific reputation.

In the second study, published in the journal *Pediatrics*, researchers claimed to have successfully treated diarrhea in Nicaraguan babies. Control babies were reported to have had more bowel movements than homeopathically treated infants. A number of problems were identified in this study, however. Even if it is not merely an experimental artifact, the difference between the groups was not found while the infants were seriously ill (when the treatment would have been clinically useful) but after the severe diarrhea had already abated and reported frequencies of bowel movements in both groups were within normal ranges. Also, all of the data consisted of retrospective reports from the caregivers, making them subject to biased recall. Thus their accuracy is extremely suspect. Finally, which homeopathic remedy was chosen was mostly based on when the caregivers were approached, so the treatment was actually random across subjects not systematic as was claimed.

Dr. Sampson next discussed chelation therapy for atherosclerosis. Proponents of this treatment claim that the enzyme EDTA (which binds calcium) can be used to clear sclerotic plaques from blood vessels. The first problem with this claim is that high calcium levels are not causal to the sclerosis, so reducing body amounts could not alleviate the cardiovascular condition. All that is needed is a calculator to show the inadequacy of chelation therapy. It turns out that one EDTA

effusion can remove 2/10,000 of the body's Ca⁺⁺ ions, at the most. According to Dr. Sampson's published calculations, to remove enough calcium to affect a plaque, one would need 530 treatments per day for fifty weeks (and the body would constantly replace the calcium from the diet anyway!) Similar problems are associated with free radical chelation. No amount of chelation can substantially reduce the proposed problem substance. Properly controlled studies have shown that chelation has no effect at all. Many fringe doctors continue to sell it at exorbitant prices.

Research attempting to validate CAM is typically not well controlled and it is usually the case in these studies that the poorer the methodology, the larger the reported clinical effect. As an illustration, Dr. Sampson discussed his analysis of the acupuncture literature. Acupuncture is one of the best of the alternative treatments, but not for the reasons that its proponents report. Dr. Sampson examined approximately 60 studies investigating the use of acupuncture for back pain to determine whether there was a relationship between quality of their controls and reported therapeutic outcome. The authors names were removed and the studies were sent to a number of researchers who rated their methodology. The papers with the largest reported effects had the lowest scores on quality of research methods. Also, most studies whose designs were evaluated as "good," methodologically speaking, showed no significant difference between control and treatment groups. Thus it appears that acupuncture works primarily on the placebo effect, but because of its dramatic nature, it is one of the best ways to generate a placebo effect. Dr. Sampson emphasized that there is nothing wrong with capitalizing on the placebo effect, since it does alleviate patients' discomfort. When the controls had the same potential to generate the placebo effect as the treatment (e.g., by sham needling in allegedly non-active sites, etc.) there was no difference in clinical effect. Although there is some research indicating that acupuncture causes endorphin release, Dr. Sampson also showed that these studies are not as conclusive as the textbooks and the advertisements claim. There have also been many problems identified in research on the use of acupuncture for drug and alcohol withdrawal. As many studies have shown, it really doesn't work better than a placebo.

When can a new therapy be considered legitimate? Dr. Sampson offered the studies investigating the effectiveness of tamoxifen as an example of a novel claim that has been established scientifically. Tamoxifen has been shown to be effective in treating some forms of breast cancer. More than 30 studies have been conducted which support the initial claims. Some of these reports showed that the effect is very small. The smallest effect sizes occurred early in investigations with smaller doses. As dose increased, effect increased. As more trials were done, they confirmed earlier ones. Therefore, tamoxifen is now acknowledged to be effective. This is how scientific investigations are supposed to proceed. True, the actual effect is relatively small, but it is definite and reproducible.

In his second lecture, Dr. Sampson expanded his critique of alternative cancer treatments. He began his discussion with an analysis of purported links between tumor growth and the immune system. Many alternative cancer treatments claim to work by invigorating the immune system to attack the cancer.

He noted that immune deficiency has not been found to be causal in any type of cancer. This suggests that psychological interventions that might alleviate hypothetical immune suppression can not prevent cancer. Despite this, many CAM proponents have proposed that psychological interventions can reduce stress that leads to immune suppression and thereby slow the progress of cancers and eventually eliminate them. Since we don't at present know what the mechanism is by which such treatments might affect immune functioning, it seems just as likely that such treatments could actually harm cancer prognosis.

The most publicized proponent of the idea that psychological support affects longevity in cancer patients has been Dr. David Spiegel from Stanford University. His team was initially interested only in showing that group therapy can improve the quality of life in breast cancer patients, helping them to cope better with their illness (Archives of General Psychiatry, 1986). They found that symptoms were better tolerated in those patients who received this social support and who engaged in more emotional expression. Sampson acknowledged that, in this respect, group therapy was obviously valuable; he had used it in his own oncology practice even before Spiegel's studies. The contentious part arose ten years later when Spiegel did a follow-up to see how these patients had fared in the interim. The researchers were surprised to see that, of the patients who were still alive, all were from the psychotherapy group and none from the control group. It was hypothesized that therapy might have helped keep them alive, something the initial study had not been designed to investigate. Spiegel's group then published a paper stating that, on average, people in group therapy lived 18 months longer or twice as long as those not receiving the therapy ($p = .0001$). Sampson was very interested since he had referred many of the patients who had participated in Spiegel's study. The results were impressive but they mystified him. Sampson looked over the methodology carefully but couldn't find any obvious flaws. It wasn't until a colleague of his drew his attention to the plotted results that a possible source of error became apparent. A big cause for concern was that there were no long-term survivors in the control group. Normally, with any cancer group there should still be some survivors at this stage. So were Spiegel's results a statistical fluke or had the two groups of women with breast cancer in the study really been comparable in all respects save the psychotherapy? Had some undetected artifact crept in? Dr. Sampson first looked at the SEER cancer database to see what the normal breast cancer survival rates have typically looked like over a huge long-term national sample. Normally, survival rates 5 years post-diagnosis should be about 20%. The survival rate in the women given group therapy turned out to be almost exactly what the databases said it should be for comparable cases who had not been given psychological interventions. The women in the control group of the Spiegel study, however, were all dead at 4 years post-diagnosis. So, Sampson suggested, tongue slightly in cheek, possibly the real take-home message is that if you have breast cancer don't allow yourself to be put in a control group at Stanford University since your prognosis will be much poorer (by 4 years) than the national average (which was the same as the Spiegel treatment group's average).

Despite these damning criticisms, this paper remains one of the most widely quoted studies in this field. Sampson's skepticism has been borne out by later research. Rosen and his colleagues at Johns Hopkins conducted a study on breast cancer survivors and found that expected survival at 5 years, with or without psychotherapy, was the same as the SEER data, and at ten years it is 7-8%, just like that of the treatment group in the Spiegel study. However, in 1993, a study on melanoma patients by a research team at UCLA showed similar results to those of the Stanford study (i.e., the treatment group had a better survival rate than the control group). Sampson then turned to the SEER data for melanoma. Once again, he found that the psychological treatment group at UCLA showed the same survival rate as the national averages for melanoma but the control group, like Spiegel's, underperformed the national average for some reason. The probability of obtaining no long-term survivors in the control group of a properly done study is exceedingly low, hence this is an extraordinary claim. Dr. Sampson proposes that the likely reason for the seemingly positive effects of psychotherapy in these studies is that their randomization procedures in the positive studies were simply inadequate somehow sicker people ended up in the experimental than the control group. They did not use a random number table or other acceptable method of assignment to groups; they simply drew straws! Remember that Spiegel's original study was not designed to look at survivor rates as a dependent variable; he is attempting to replicate the original retrospective study, but Sampson has reasons to suspect that the results to date are not promising. The latest study out of Canada, by Cunningham, has found that the control and therapy groups had equal survival rates when all of the necessary experimental protocols were followed. In at least one other study, the controls actually outlived the psychological support group, on average. So the consensus at present is that there does not seem to be any evidence that psychological treatments have any effect on cancer survival rates, though there is reason to believe that they can improve a patient's quality of life and ability to cope with the disease.

Because there are many possible reasons that a cancer might go into remission without human intervention, no single testimonial can suffice to prove the effectiveness of a putative treatment. Dr. Sampson outlined research showing that there are certain chemical compounds that can turn genes involved cancer on or off and result in spontaneous remissions. For example, retinoid and its derivatives (vitamin A precursors) can normalize secondary growth cancer cells. These compounds are related to compounds found in some vegetables. These vegetables may then affect the progress of some cancers, but not in the way many quack "anti-cancer" diets suggest. Also some cancers may just run their course. All cells have a limited life and number of cell divisions. It is known that some individual cancer cells are short lived such that most of a cancerous growth is often dead cells. If the patient can outlive the limited number of cell divisions of cancer cells, he or she can survive without any intervention. Some cancer cells are immortal, but not all of them are.

Many proponents of quack therapies have good intentions but flawed research methods. There are some charlatans, however, who are only out for financial gain. For the remainder of his

second lecture, Dr. Sampson discussed two clearly fraudulent cancer therapies that have attracted a devoted following: Laetrile and anti-neoplastons. The sad story of Laetrile would make a good movie plot. Although Laetrile has been around for about 30 years, the details about its origins and promotion as a cancer therapy are still unknown to most people. Few are aware that the Laetrile fad began as a front for a stock swindle in several Canadian provinces. Phony American and Canadian companies were set up for the purpose. One of the main perpetrators of the scam was Andrew McNaughton, Jr., son of the Canadian WWII hero, Gen. A.G. L. McNaughton. McNaughton the younger rose to become a senior test pilot for the Canadian air force before turning to illicit gun-running for a number of countries. Along the way, he became tied up with Ernst Krebs, Jr., the inventor of Laetrile. Their other collaborator was a long-time lawyer for the Bonnano organized crime family. Also deeply involved were the Del Rio brothers (Godfathers of the Baja California rackets). Laetrile clinics still cluster along the US-Mexican border as the tragic case of Tyrell Dueck reminds us all. Books were written to entice the desperate and gullible. They bore titles such as, "Laetrile: The Ultimate Cancer Drug". Eventually, the convictions for the Laetrile fraud ranged across Canada and the United States but the Mexican clinics remain in place. Of course, Laetrile has been shown in numerous large-scale clinical trials to have no effect on cancer and eventually the initial promotional fraud was discovered. The story was broken first in MacLean's magazine by Marci MacDonald in the 1970's. Subsequently, Life magazine ran a large article about the Laetrile fraud. The convicted perpetrators are on tape confessing their parts in the fraud.

What is Laetrile? It is a drug derived from apricot pits; the extract is 6% cyanic acid (a virulent poison). The theory was that only cancer cells, and not normal cells, liberated the poison from its bound, inactive form. In 1948, a University of Michigan researcher found that a certain enzyme was higher in cancer cells than in normal cells. Ernst Krebs, Jr. argued that this enzyme would break down the apricot extract to release the cyanide, but only in cancerous cells. However, his chemistry was totally off base. Krebs invented the name "Laetrile," which sounded like the enzyme's name, thereby fooling many physicians into thinking that his theory and treatment were linked to the results of the Michigan study. Laetrile was only administered intravenously because there is no enzyme for liberating the cyanide in the human body. But in the intestine, bacteria can break the compound down and oral use of Laetrile would quickly cause death. Despite the many exposes and failed clinical trials, Laetrile remains popular among CAM enthusiasts. Dr. Sampson was recently interviewed about it by a Wall Street Journal who had no idea it was a thoroughly debunked treatment. But, because it remains so profitable, it is likely that we haven't seen the last of attempts to promote it in the media.

Another fraud that is currently very popular in the United States involves the administration of "anti-neoplastons" for the treatment of brain tumors. The man promoting this is Stanislaw Burzynski, a Polish immigrant doctor who recently dropped the Ph.D. after his name when it was shown that he had not actually earned one before immigrating to the US. Anti-neoplastons are

metabolites derived from human urine. Burzynski obtains the urine from public urinals in Texas where he is based. He takes phenylacetic acid from the urine and he combines it with glutamine to get phenyl-acetyl-glutamine (PAG). To "activate" it, he first heats it, forming a dione that is insoluble in water but soluble in organic solution. To make it suitable for administration to patients, he must make it water-soluble. Thus he adds alkali, heat, and water, but all he has done is returned it to the initial biologically inactive PAG form. The whole process has been shown by the eminent biochemist Saul Green to have no scientific basis as a cancer treatment. Nevertheless, Burzynski continues to make a fortune. Burzynski gives this peptide extract to patients with brain tumors and he says that they are cured. His cure rate is no different than the national average for untreated tumors, so he has no results to support his claims. Why is he able to continue? As with many such enterprises, there is political pressure to maintain the ruse since the money that is flowing into the States that produce such material is enormous. By bringing numerous testimonial witnesses to court, Burzynski recently convinced a scientifically-naive Texas court to acquit him on charges of medical fraud.

Although Wally Sampson has retired from clinical practice, he retains his teaching post at Stanford and devotes his time to his new journal, *The Scientific Review of Alternative Medicine*, which he founded to disseminate information on the sorts of dubious treatments he discussed in his two well-attended lectures on Burnaby Mountain. Details of some of the cases described by Dr. Sampson can be found in his September 1997 article that appeared in *The Skeptical Inquirer*.

Confirmation: The Hard Evidence of Aliens Among Us

Whitely Strieber, St. Martin's Press, NY, 1998. hc 290 pp., \$31.99 Cdn

reviewed by William Harwood

The bibliography of Whitley Strieber's Confirmation lists books by Bud Hopkins, John Mack and J. Allen Hynek, but none by Phillip Klass, Robert Sheaffer or Kendrick Frazier. That, and his endorsement of the Roswell myth, the hypnotism delusion and the alien-implant hoax, stretches the defense that Strieber is "sincere but delusional" to the breaking point.

In his opening chapter Strieber writes, "this is not a book of proof of alien presence." That may be only line Strieber has ever written that can be accepted as unvarnished truth. And when he writes, "I wished often that I could return to being a ... fiction writer," the obvious rejoinder is, "When was he ever anything else?"

Fictional detective Sherlock Holmes stated that, when you have eliminated the impossible, whatever is left, no matter how improbable, must be the truth. When Strieber wrote *Communion*, the book's basic coherence eliminated as impossible the diagnosis that the author was insane. The Holmes dictum left only one alternative: Strieber is conscious, blatant liar. Initially it seemed possible that *Communion* was a prank, and when it had run its course Strieber planned to admit that it was a version of James Randi's "Project Alpha". It is still conceivable that that was his original intent. But *Communion* made him so much money that would have to be refunded if he admitted it was a hoax, that he wrote a series of sequels aimed as wresting as much money as possible from gullible ignoramuses before the well ran dry.

Perhaps Strieber was discomfited that so many people denounced *Communion* as an unmitigated fraud. Confirmation is a collection of anecdotes that he reports in a manner calculated to minimize accusations that he, rather than his sources, is lying. He expresses credulity in absurdities, but he does so in a way that will enable him to pass himself off as the hoaxee rather than the hoaxer if some of his reported cases are exposed as fantasies. Only in the chapters about his own alleged experiences can the possibility that he really believes what he is saying be dismissed as the least likely hypothesis. For like the new generation of spiritualists, Strieber panders to believers while carefully avoiding making statements that can be readily falsified.

While Confirmation contains no clear evidence that Strieber is developing a conscience, it does raise the possibility that he is preparing for the day when he can announce that he as "lost faith" (or something analogous) in the little green men, in hope of restoring his credibility. If that does not work, perhaps his next move will be the Charles Colson solution! "Sure I burgled the Watergate -- but that was before I found God."

Confirmation all but eliminates any possibility that Strieber is merely a crank, no more capable of recognizing that he peddling hogwash than John Mack, Immanuel Velikovsky or Shirley MacLaine. Reasonable readers will conclude that he is simply a liar. Case closed.

Into the Electronic Age

Please send us your e-mail address. In order to inform BSC members of events more efficiently and for those who can and wish to receive *The Rational Enquirer* electronically, we are asking you to send your current e-mail address to our editor, Lee Moller (leemoller@shaw.ca). We guarantee no outside ads, spam, etc., will come your way. Those who wish to continue to receive the *RE* using carbon-cellulose technology and snailmail will still be able to do so, but we will save a bundle on printing and postage by sending the rest their newsletters via cyberspace. Let us know if you would like your newsletter to be sent electronically as a PDF.

Ray Hyman Invites You to Oregon This Summer

The annual Skeptics' Toolbox will be held from August 17-20, 2000 at the University of Oregon in Eugene. It is organized by CSICOP Executive Council Member and Emeritus Professor of Psychology at the U of O, Ray Hyman. The objective of the workshop is to provide skeptics with the "tools" to become more responsible and effective communicators and debaters on paranormal and pseudoscientific topics. The emphasis will be on how to evaluate arguments and evidence for paranormal claims. Using examples such as dowsing, faith healing, psychic claims, UFOs, alternative medicine, etc., the faculty will work alongside participants in small working groups to disentangle actual cases. The groups will not only discover what the evidence is (for and against), but more importantly, how to gather and evaluate it. Investigative techniques and logical means of appraisal will be covered as well as reasons why such claims are often accepted in spite of very poor evidence. The faculty Ray Hyman has invited to join him will include CSICOP fellows, Jerry Andrus and Loren Pankratz and CSICOP Executive Council member Barry Beyerstein. Added this year, to replace Jim Alcock who can't make it this time, will be the magician, author, and founder of the Italian skeptics' organization, Massimo Polidoro. As usual, the workshop will be treated to an array of local magicians who will entertain and exemplify many of the principles of faulty perception and inference discussed in the seminars.

Dormitory accommodations and (surprisingly good) food services are available on the beautiful Eugene campus. The atmosphere is laid back and the attendees come from all parts of the continent and abroad. They are invariably an interesting and congenial lot. Many have attended all or nearly all the workshops to date, and the BC Skeptics have been well represented in the past. We hope to see you there. For information on registration, fees, and accommodations, see the announcement on CSICOP's web page (www.csicop.org) or contact Barry Karr at CSICOP headquarters: 716-636-1425 or by e-mail: skeptinq@aol.com.

Experiences, continued from page 3...

If someone points out to you that your pet theory of the universe is in disagreement with Maxwell's equations -- then so much the worse for Maxwell's equations. If it is found to be contradicted by observation -- well these experimentalists do bungle things sometimes. But if your theory is found to be against the second law of thermodynamics I can give no hope; there is nothing for it but to collapse in deepest humiliation.

The Nature of the Physical World, 1928, Sir Arthur Eddington

The Next Two BC Skeptics Meetings: One At SFU, One At Langara College

Summer Meeting at SFU

Friday, August 11, 2000 - 7:30 p.m.

Room 8100, Robert C. Brown Classroom Complex (Adjacent to Images Theatre) Simon Fraser University

Dr. Zamir Punja

Professor and Director, Centre for Environmental Biology Simon Fraser University

"Is Genetically-Engineered Food Good for you?"

An internationally-known expert in plant biotechnology and plant pathology, Dr. Punja has been a frequent participant in the public controversy surrounding the safety of genetically-modified foods. He has debated many of the leading critics of these products in national and international forums.

Fall Meeting at Langara College

Friday, September 15, 2000 - 7:30 p.m.

Room B 201 Langara College 100 West 49th Avenue, Vancouver, B.C.

A Panel Discussion on Cults:

Moderator: Dale Beyerstein, Dept. of Philosophy, Langara College

Panelists:

Ms. Julia Biersteker, Social Worker, Vancouver, B.C.

Dr. Alister Browne, Medical Ethicist, UBC Faculty of Medicine and Dept. of Philosophy, Langara College.

Dr. Barry Beyerstein, Dept. of Psychology, SFU.

Julia Biersteker, a Vancouver social worker, became interested in cults when, during her student years, she was the object of recruiting efforts by a local cult. As a social worker, she has dealt extensively with cult members, their families and friends, and those who wish to extricate themselves from cults.

Alister Browne brings a wealth of experience in the field of ethics to bear on the issue of how we can curtail harmful cult activities without infringing on the civil liberties that must be protected in a democratic society. He wrote the BC Civil Liberties Association policy brief on cults.

Barry Beyerstein, in his work with the BC Skeptics and CSICOP and in his courses at SFU, deals with issues such as the interpersonal dynamics of cult influence and the psychological attributes that make people vulnerable to cult recruitment and manipulation. He was recently consulted by a commission of the French government delving into cult behaviour.