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EDITORIAL

Parapsychologists are often—and understandably—concerned about finding reliable and stable repositories for the donation of manuscripts, published books and articles, investigator's notes and diaries, and other valuable research materials. (No doubt this challenge also confronts other areas of frontier science, but I'm personally familiar only with its manifestation in parapsychology.) University and public libraries can be fickle, initially accepting donations of these materials but disposing of them later. And parapsychological organizations often struggle to maintain a tenuous hold on their own existence—and, of course, the existence of their libraries and archives.

For example, the Society for Psychical Research (SPR) in London at one time housed an extensive and rich collection in the Society's home at 1 Adam & Eve Mews (one of the world's great addresses). But when financial pressures forced the SPR to relocate to a much smaller venue elsewhere in Kensington, the organization had no choice but to divide its collection and deposit most of the rarer items in the Cambridge University Library (where, I'm told, some of those items occasionally "dematerialize").

Similarly, the Rhine Research Center (RRC) in Durham, North Carolina, has been in a precarious financial position for decades. When the organization moved to newly built headquarters several years ago, their valuable archives were at least moved to a home that was not a fire or flood hazard (unlike the basement of the former RRC building across the street from Duke University). But if the RRC folds, either from financial pressure or a paucity of support personnel, what becomes of its collections?

Currently, the Parapsychology Foundation in New York City is in serious financial trouble, and its enormous and well-organized library could easily be out of a home in the near future. It's no wonder, then, that I—along with other chronologically challenged psi researchers—worry about what to do with our own private collections of books, notes, and other archival materials. Can any relevant and useful organization be counted on to survive, and can any person be trusted to respect and preserve the donation, or (following retirement or death) to pass the collection on to another trustworthy person?

I faced this dilemma about ten years ago when I was asked to sort through and preserve the letters, papers, and books of my close friend psychiatrist Jule Eisenbud. Eisenbud is probably best-remembered for his investigation of the psychic photography of Ted Serios, an alcoholic Chicago bellhop who appeared to produce anomalous images on "instant" Polaroid film (for the full story, see Eisenbud, 1967, Eisenbud, 1989, and for a summary and update see Braude, 2007).

The Serios case, in my view, is very strong and very important, and Jule's materials are an exceptionally valuable resource. Jule's library was enormous; he had written a hefty collection of books and articles; he had many boxes of videos and other materials pertaining to the Serios case; and he had also preserved nearly all of his written correspondence (both personal and professional) since the 1930s, including many exchanges with leading figures in parapsychology and mainstream science.

As Jule's health declined in the 1990s, he realized the urgency of finding a safe haven for the original Serios photographs, numerous signed affidavits, and other documents bearing on the case. Probably because Jule was something of a celebrity in the Denver area, the Denver Public Library seemingly came to the rescue. The Library's director offered to hold and protect the Serios materials and also digitize the photos as a backup. So even though Jule died unsatisfied about the public response to his work with Ted, he was comforted in his final months believing that the evidence would survive and be accessible to researchers willing to study it fairly.

Jule died in March, 1999, and not long thereafter (near the beginning of 2002), the Denver Public Library informed Jule's son Rick that it had decided to divest itself of the Serios holdings. The Library's management had changed, and those now in charge evidently felt no need to honor their earlier commitment to Jule to maintain and protect his donation. In fact, Rick asked the new Director what the Library would have done with the material if they had been unable to reach him. To his astonishment, the Director replied that they would probably have thrown it all away. Of course, Rick was angry over the Library's cavalier attitude, and he and I were anxious about finding a dependable home for his father's legacy.

Rick and I agreed that the major parapsychological organizations lacked either financial security, safe storage, or reliable personnel, and in fact Jule had reached the same conclusion years earlier. That's why he had donated his most important Serios material to the Denver Public Library. He assumed (reasonably) that they weren't going to fold, and he'd been given what appeared to be an iron-clad commitment to preserve and maintain the collection. Naturally, the Library's subsequent betrayal left both Rick and me wary of trusting other apparently stable institutions to be recipients of the Eisenbud/Serios material.

Nevertheless, I figured there was no harm in asking Tom Beck, Chief Curator of Special Collections at my university's Albin O. Kuhn Library and Gallery, whether he'd be interested in housing and maintaining the material, and to my surprise and delight Tom recognized what an intriguing and valuable acquisition this would be. He recognized the intrinsic interest in the collection and hoped that it would attract researchers from around the globe. Moreover, Tom felt it would further enhance the UMBC Library's already very distinguished

collection of nearly two million photographs, from some of the world's leading photographers (including Ansel Adams, Lotte Jacobi, and others). Before long, Rick sent the University of Maryland Baltimore County fourteen big boxes of photos, videos, letters, supporting documents, and much more.

Tom was right. After the Library issued some press releases, the Eisenbud/Serios material quickly became a magnet to both domestic and European researchers eager to examine it carefully for themselves. For example, in 2003, a team from German television accessed the collection for a series they were producing on the paranormal. The following year, the collection was examined thoroughly by Andreas Fischer, from the Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP) in Freiburg, Germany. As a result of his efforts, UMBC lent thirteen Serios thoughtographs to the renowned Maison Européenne de la Photographie in Paris. From November 2004 until February 2005, those photos were part of an exhibit entitled "Le Troisième Oeuil: La Photographie et l'Occulte" (The Third Eye: Photography and the Occult). In September 2005, the exhibit moved to the Metropolitan Museum in New York, where it ran until December under the title "The Perfect Medium: Photography and the Occult." Each exhibit was accompanied by a handsome and very large catalogue of its photos, many of them extremely rare. Since then, researchers from around the globe have visited the collection, and plans are again under way to lend some of the photos to exhibits in Europe.

One reason I'm especially glad to have this material available for inspection is that it puts the lie to magician James Randi's widely disseminated misinformation about his role in the Serios case. Despite Eisenbud's repeated—and financially generous—challenges to conjurors to duplicate the Serios phenomena *under controlled conditions similar to those prevailing during the experiments*, no one has come forward. Some have claimed to produce Serios-like effects, but those claims have never been supported by public demonstrations under careful conditions or any other hard evidence.

During the late 1960s, when the Serios case was getting considerable public attention, Randi insisted that the phenomena were fraudulent, and he claimed that he could reproduce them under conditions similar to those in which Serios succeeded. That would, indeed, have been a neat trick, because those conditions included wearing clothing supplied by the experimenters and being separated from the camera (sometimes in another room, and sometimes in an electrically shielded "Faraday" cage). Nevertheless, with his usual bluster, Randi appeared on the morning television *Today* show with Eisenbud and accepted Jule's challenge to duplicate the Serios phenomena and make good on his claim.

Of course, confidence is easy to feign, and Randi has done it routinely in his role as magician. He's also cleverly taken advantage of the occasional high-profile case he successfully exposes as fraudulent, by publicizing those

successes and creating the impression that he's a generally reliable guide when it comes to the paranormal. So Randi's dismissal of the Serios case was all it took for those already disposed to believe that Serios was a fake, and it was probably enough even for those sympathetic to parapsychology but unaware of Randi's dishonesty. Many (possibly most) viewers were left believing that the case was without merit.

What the TV audience never learned was that when the show was over and Randi was pressed to make good on his wager, he simply wriggled out of it (as Jule noted, like any escape artist would). Early in their correspondence, Randi bragged in a letter dated September 28, 1967, that it would be very simple to duplicate Serios's effects by mere trickery. But after Jule replied, offering to arrange a demonstration of Randi's alleged conjuring finesse, Randi quickly responded (in a letter dated October 8, 1967) that it would be impossible to arrange such a demonstration, because (he claimed) there was no chance of agreeing on the meaning of the terms "range of phenomena" and "similar conditions." So in his first attempt to change the subject and avoid making good on his boast, Randi dropped the issue of whether he (Randi) could duplicate Ted's phenomena and instead shifted the discussion to the conditions under which Randi could test Serios himself.

Jule replied to this evasion promptly on October 12, noting that it wouldn't be necessary to duplicate Ted's entire "range of phenomena." It would be sufficient if Randi managed to duplicate the results obtained in "two or three clear, well-defined and well-documented experiments with Ted." Jule continued, "We need not, moreover, get hung-up over what constitutes 'similar conditions'. It would be sufficient if you used the identical physical set-ups as Ted with either the same observers (in the following suggested experiments a total of ten—all hard-boiled sceptics) or observers of equivalent background and training. . . . The conditions of control of camera and film would merely have to be the same as those used with Ted—that is, with marked and initialed cameras and film under the surveillance of one or more of the observers."

Jule then suggested some clearly defined tests—for example, that Randi allow himself "to be stripped, clad in a monkey suit and sealed in a steel-walled, lead-lined sound-proof chamber." Randi would then have an hour to "produce six identifiable pictures with the camera held and triggered by the observer," and that if Randi chooses to use a "gismo" like the rolled-up cardboard used by Ted, that immediately before the shutter is triggered the observer be allowed to look through the gismo's barrel. Jule then went on to describe, in an equally detailed fashion, two more tests successfully passed by Serios, including the conditions that Randi (like Ted) allow himself "to be stripped and searched, including a thorough inspection of body orifices . . . [and then] sewn into a monkey suit without pockets and . . . ankle and wrist cuffs will be taped."

It's regrettable, in hindsight, that Jule proposed as well that Randi—like Serios—be inebriated for the trial (although Jule wryly granted that Randi needn't consume as much alcohol as Ted). I knew Jule very well, and I'm confident he made that proposal only to goad Randi and to emphasize the extent of the handicap under which Serios operated. Unfortunately, that suggested provision allowed Randi another distraction from his initial boast. He wrote back to Eisenbud, protesting that he didn't drink, apparently believing that by rejecting this non-essential (if not frivolous) requirement he could justify totally withdrawing from the challenge. In fact, in Randi's reply of October 20, 1967, he makes no other mention at all of his initial claim that the phenomena of Serios could be easily produced by trickery. Instead, he continues to write about arranging conditions for testing Ted himself.

Jule immediately responded on October 23, offering to waive the alcohol requirement and once again requesting that Randi reply to the original issue of meeting the challenge to duplicateTed's phenomena. At that point, since Randi had no excuse left, it's not surprising that neither he nor his representatives appeared at a New York hotel for a meeting Jule had repeatedly tried to arrange. And in subsequent correspondence, Randi again tried changing the subject, from the question of whether he (Randi) could do it (which is what the challenge was all about) to whether Serios could do it. That is, rather than follow through on his boast to reproduce Serios's images under the good conditions in which Ted had succeeded, he disingenuously claimed that this was not the issue; what mattered, he said, was whether Ted could do what Eisenbud had claimed. And so Randi again simply side-stepped the challenge, knowing full well that most would be satisfied just knowing he claimed on national television and elsewhere that the Serios phenomena could be duplicated by simple trickery.

I should emphasize that drinking was nothing ever imposed on Serios; Serios did that quite voluntarily. Jule's challenge to Randi was to duplicate the phenomena under the good conditions imposed successfully on Serios. And that's something Randi has never done or ever publicly tried to do, and there certainly is no evidence of his having actually succeeded. Interestingly, this paucity of evidence never prevented the widely read and respected but (under the circumstances) inexcusably non-authoritative Martin Gardner from claiming that Randi "regularly" duplicates the Serios phenomenon, "and with more skill" (*Nature, 300* (November 11, 1982):119). It's not difficult to imagine what Gardner's source was for that falsehood.

At any rate, to help prevent others from learning about the aftermath of his *Today* show boast, Randi prohibited publication of his correspondence on the matter. That was undoubtedly a shrewd move, because the letters show clearly how Randi backed away from his empty boast. But now that the correspondence is all in the UMBC Library, it's been accessed by eager researchers and remains

available for additional scrutiny. So if anyone doubts my account of the Eisenbud–Randi challenge and correspondence, it's very easy to confirm.

I wish I could say that I'm comforted by Tom Beck's assurance that the Eisenbud/Serios material will be treated with more respect and appreciation than was accorded by the Denver Public Library, that it will survive both my retirement and Tom's subsequent retirement, and that it will truly have a permanent home at UMBC. That may be; it may be (as Tom says) that universities are generally loathe to purge collections already on hand, especially those that attract researchers from around the world and bring attention (mostly positive) to the university. (In any case, Rick Eisenbud has arranged for the material to be returned to the family just in case UMBC decides to unload it.) However, I'm jaded enough from my study of the history of parapsychology—and (for that matter) from history generally—to worry about the scoundrels who have yet to appear. So I encourage all those interested to examine the Eisenbud/Serios archives at UMBC while they're being so lovingly maintained and instructively organized. For those interested in macro-PK, and for those interested in getting the facts straight about a case so routinely misrepresented, the Eisenbud/Serios material (and, of course, both editions of Jule's book on the Serios case) are not to be missed.

Stephen E. Braude

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RESEARCH

Reflections on the Context of Near-Death Experiences

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Abstract—Near-death experiences (NDEs) constitute a particular type of experience that occurs in near-death states and is familiar to many. Yet, there are other kinds of lesser-known experiences reported from near-death states that appear to form an interconnected continuum with NDEs. Because the relations between these different experiences have not received much attention in the more recent literature, this paper presents an introductory overview on them. The topics discussed include cases of unexplained body changes during near-death states, reciprocally confirmed out-of-body experiences and crisis apparitions, deathbed visions, (shared) NDEs and (shared) dreams, correspondences between the contents of NDEs, cases of the reincarnation type, and communications received via mediums; mists or shapes leaving the body of the dying, unexplained music heard at deathbeds, the re-emergence of mental clarity shortly before death in persons with mental disorders, and unusual memories of little children.

Keywords: Near-death experiences (NDEs)—deathbed visions (DBVs)—cases of the reincarnation type (CORTs)—apparitions—terminal lucidity—mediumship

Introduction

Near-death experiences (NDEs) represent an experience that occurs in near-death states or in states suggestive of impending death. Since the landmark publication by Raymond Moody (1975), these experiences have gained much attention from both the public and scholars. Still, there are other kinds of lesser-known experiences and phenomena reported from near-death states which indicate that NDEs form an interconnected continuum with them (Nahm, 2010a). Other authors have previously discussed some of these relations (e.g., Alvarado, 2006, Ellwood, 2001, Fenwick & Fenwick, 2008, Howarth & Kellehear, 2001, Kelly, Greyson, & Kelly, 2007, Moody, 2010, van Lommel, 2010). However, these publications cover only a part of the available material. In this paper, I delineate an integrative and systematic overview on a variety of different death-related occurrences with a specific focus on expounding the

possible connections between them. Among the phenomena and experiences I will subsequently discuss are: Cases of unexplained bodily changes during near-death states, implications of reciprocally confirmed out-of-body experiences (OBEs) and crisis apparitions, deathbed visions (DBVs), possible relations between (shared) NDEs and (shared) dreams, possible formal interconnections of NDEs with mediumship, correspondences between the contents of NDEs, communications received via mediums, and cases of the reincarnation type (CORTs); mists or shapes leaving the body of the dying, unexplained music heard at deathbeds, the re-emergence of mental clarity shortly before death in persons who were previously dull or in states of severe psychiatric or neurologic disorder, and unusual memories of little children to which they are not supposed to have had access.

Throughout this paper, I will not restrict myself to particularly well-documented cases or scientifically approved phenomena, but will simply rely on reports given by presumably trustworthy persons who claim to have experienced, observed, or investigated these phenomena. In doing so, I follow Frederic Myers (1903) by including samples "of small groups of cases, which I admit to be anomalous and non-evidential [. . .] yet which certainly should not be lost, filling, as they do, in all their grotesqueness, a niche in our series [of experiences] otherwise as yet vacant" (Myers, 1903, vol. 2:20). Thus, I will not discuss frequently heard explanations for the experiences presented such as hallucinations, delusions, distorted memories, cryptomnesia, errors, or fraud, although I am aware that they exist and might account for a good part of the cases. I will also not highlight the existing differences between the different kinds of experiences described in the following, but focus on the similarities. The reason for this is that the above-mentioned alternative explanatory models for some of the discussed experiences are readily available and conceivable, whereas integrative approaches aimed at elaborating possible relations between these experiences when taken at face value have only rarely been put forward. But just in case these reports are accurate and generally correspond to how the events had really happened, and thus are authentic and evidential in the sense of Ian Stevenson (1971), I consider outlining such an approach important. In this context, it might be of relevance that until today, there are no neurobiological or psychological models that could account for the full phenomenology of NDEs (Carter, 2010, Holden, Greyson, & James, 2009, van Lommel, 2010). That said, I beg the reader to bear in mind that I am not intending to propose a strict theory in terms of scientific standards. Rather, similar to a previous paper (Nahm, 2009a), I aim at widening the view on NDEs and at inspiring researchers to conduct future investigations, and, perhaps, to develop theories on NDEs that recognize their potential relationship with several other curious phenomena and experiences long reported in parapsychology.

Unexplained Bodily Changes in Near-Death States

The literature on NDEs contains several case reports of unexplained bodily changes which have occurred during or shortly after being in near-death states. Often, these changes are tantamount to healings (Brayne, Lovelace, & Fenwick, 2008, Fenwick & Fenwick, 1996, Geley, 1927, Grey, 1985, Long & Perry, 2010, Morse & Perry, 1992, Pasricha, 2008, Ring & Valarino, 2000, Sartori, 2008, Sartori, Badham, & Fenwick, 2006, Schubert, 1850, Splittgerber, 1881). This intriguing aspect of NDEs has so far received little attention and is also not discussed in the recently published summary of 30 years of NDE research (Holden, Greyson, & James, 2009). Apart from the significance of such cases for those who experience them, they are of importance for evaluating the question if all phenomena featured in NDEs can be explained solely in brain physiological terms. Cases of unexplained healing might also be related to cases of miraculous healings such as those reported from Lourdes. Many of those who were healed at Lourdes have described a sudden painful shock, accompanied by a sense of dying and a period of unconsciousness (Gerloff, 1959). Others have also reported a sense of unawareness of what was going on in the physical world or of being transported to other locations beyond themselves (Cranston, 1988). Such cases might be linked to other instances of remarkable recoveries and spontaneous remissions that are difficult to account for with current medical theories (Gibson, 1994, Hirshberg & Barasch, 1995), or to cases in which the NDEr was expected to retain mental disabilities due to prolonged oxygen deprivation of the brain, but was revived to a normal mental state (e.g., Roud, 1990). But unexplained bodily changes in near-death states do not only consist of positive amendments or healings. In studies of NDEs in India, between 25 and 47 percent of the near-death experiencers (NDErs) reported the development of residual marks on their bodies upon regaining consciousness (Pasricha, 1993, 1995, 2008, Pasricha & Stevenson, 1986). They claimed that these body marks correspond to events they had experienced during their NDEs such as being touched and branded by Yama or other inhabitants of the afterlife realm. Pasricha (1995) speculated that the residual marks on the bodies of NDErs might be induced in a similar manner to those of stigmatics, i.e. "due to autosuggestion or intense concentration on the event, on [the] part of the subjects" (p. 85). This might be a possibility, but the psychophysiology involved in the autosuggestive generation of bodily marks is so far not understood. Bodily changes that are difficult to interpret from a modern medical perspective have also been reported in the context of hypnosis and dissociative identity disorder (Kelly, 2007), or apparent maternal impressions on the developing child in the womb (Pagenstecher, 1928, 1929, Stevenson, 1997:104–175). They also include placebo/nocebo-effects and other examples of mental influence on physiological processes (Kelly, 2007). With

regard to NDEs, it remains especially curious that somebody should develop bodily marks in correspondence with memories of a subjective impression experienced during a state of apparent lifelessness and unconsciousness. Although it seems that unexplained bodily changes can be triggered or accompanied by extraordinary dreams (Duffin, 2009, Stevenson, 1997:77f) and can perhaps even be purposefully induced in lucid dreams (Waggoner, 2009), it remains puzzling that such changes can also be attributed to experiences made during conditions of severe brain malfunction. In this regard, these bodily marks might be related to the birthmarks and birth defects in CORTs that correspond to characteristics of the previous personalities or the circumstances of their death (Stevenson, 1997). Figuratively speaking, these birthmarks develop in concordance with impressions or memories that re-manifest after a much longer period of unconsciousness and organic lifelessness. However, the field of unexplained healings and body changes represents a largely neglected field of research and much remains speculative today. Nevertheless, it is a highly fascinating and also important area to study, and it certainly warrants careful future investigations.

Reciprocally Confirmed OBEs During Near-Death States

Another potentially fruitful source for tracing different branches of phenomena related to NDEs are reciprocally confirmed OBEs experienced in near-death states (ND-OBEs). These reciprocally confirmed ND-OBEs can be regarded as a subcategory of *a*pparently nonphysical *v*eridical *p*erceptions (AVPs) (Holden, 2007). Yet, they are rarely discussed in the newer NDE literature. In typical cases, a person in a near-death state claims to have visited family members at a distance whom he or she was intensely wishing to see. This visit was often accomplished by means of an OBE. Later, these family members confirm that they had perceived a corresponding impression of this person at the time in question (e.g., Lee, 1875, vol. 2:64, Myers, 1903, vol. 1: 687, Morse & Perry, 1995:22, or the case collection in Barrett, 1926:81–95; other examples are included for example in Flammarion, 1900/1905:78,87). Starting from reciprocally confirmed ND-OBEs, there are four different branches that seem to connect NDEs to other death-related experiences.

1) Because reciprocally confirmed ND-OBEs can likewise be regarded as reciprocal and veridical *crisis apparitions* (Gurney, Myers, & Podmore, 1886), they open the door to link NDEs to different synchronistic end-of-life experiences (ELEs, Fenwick, Lovelace, & Brayne, 2007) that are frequently reported at times when somebody dies at a distance, beginning with non-reciprocal veridical crisis apparitions. An early case illustrating this latter kind of crisis apparition was published by Justinus Kerner (1831): An apparition of a woman entered the room of her daughter and unexpectedly informed her that

she had died. The apparition of the mother furthermore instructed the daughter to perform a specific task. When speaking to those who had been present at the deathbed of the mother the next day, the daughter learned that the dying woman was very concerned with this particular task and had also instructed a caretaker to urge her daughter to perform it. This case is not strictly reciprocal, because the mother had not reported having visited her daughter (for similar cases, see for example, Stead, 1897:137, Flammarion, 1900/1905:51,85,225). From such cases, there is a continuous and gradual path to the less-detailed, one-sided synchronistic ELEs which involve anomalous visual or acoustic experiences, dreams, bodily sensations, or physical phenomena occurring around the time a loved one dies at a distance.

2) If reciprocally confirmed ND-OBEs are regarded as crisis apparitions, they do not only interrelate the variety of synchronistic crisis-related events around the time somebody dies to NDEs, but also allow for establishing a link to similar experiences that occur at later times to the bereaved. In fact, the traditional definition of crisis apparitions of the dying as a subcategory of "phantasms of the living" (Gurney, Myers, & Podmore, 1886) was artificially restricted to apparitions that occurred no later than 12 hours after the death of the person in question (p. xix). Nevertheless, it has long been known that practically indistinguishable apparitions occur also more than 12 hours after death (Flammarion, 1923, Hart & collaborators, 1956, Mattiesen, 1936–1939). In the newer literature, these encounters are described as "After-Death Communications" (Guggenheim & Guggenheim, 1995, LaGrand, 1997), "After-Death Contacts" (Wright, 2002), or "Afterlife Encounters" (Arcangel, 2005). In these cases, the overall mode of appearing seems identical to crisis apparitions of the living or dying, although the motivations to appear and the messages conveyed seem different: Crisis apparitions tend to inform the perceiver predominantly about the crisis or of death itself, whereas apparitions of the longer-deceased convey more often messages of their own well-being, or of hope and encouragement for the bereaved (Flammarion, 1923, Guggenheim & Guggenheim, 1995). Additionally, the latter kind of apparitions is often encountered by the perceiver in an especially meaningful or critical moment of their life. This feature might again connect them to the apparitions typically seen by dying persons at their deathbeds, the DBVs. Apart from occuring in an especially meaningful moment in life, afterlife encounters and DBVs share a number of other common features: (a) As in afterlife encounters, DBVs often convey comforting messages; (b) As in afterlife encounters, the apparitions seen in DBVs are those of deceased individuals; (c) Many apparitions seen in afterlife encounters and DBVs share features of typical apparitions of the deceased, including emanations of light; (d) Most ordinary apparitions, afterlife encounters, and DBVs are perceived subjectively by only one person.

But in some cases, ordinary apparitions, afterlife encounters, and also DBVs are perceived collectively by two or more witnesses (Bozzano, 1947, Barrett, 1926). The interpretation of DBVs as a subcategory of afterlife encounters was assumed for example by Emil Mattiesen (1936–1939, vol. 1:78–101) who discussed apparitions with respect to the circumstances of their appearance, their behavior, and their motivation for appearing to the percipient. This interpretation of DBVs shifts the focus away from regarding them as mere hallucinations of the dying brain. In fact, distinguished brain physiological or psychological models for explaining (collective) DBVs have not yet been put forward by mainstream scientists. And, similar to NDEs, several findings indicate that this might not be a very promising approach (e.g., Osis & Haraldsson, 1997). In addition, there are reports of DBVs in which the percipient died a couple of weeks after he or she had experienced the DBV (e.g., Kelly, Greyson, & Kelly, 2007:410). This curiosity might represent another indication that DBVs may not be tied to the neurophysiology of a dying brain. Rather, DBVs might be of a similarly unpredictable and possibly autonomous origin as other apparitions or afterlife encounters—which are generally encountered during conditions of normal brain functioning and optimum oxygen supply. With the suggestion to interpret DBVs as a specific kind of afterlife encounter, the circle leading to NDEs is almost closed again. Both types of experience, DBVs and NDEs, share many common features. Sometimes, it even seems difficult to tell if a terminally ill person has experienced a DBV or an NDE (Nahm, 2009b, Osis & Haraldsson, 1997), and Giovetti (2007) has reported a case in which an NDE was immediately followed by a DBV. The same woman, a grandmother of the dying man, played a crucial role in both the NDE and the DBV.

3) Moreover, it is a general rule that, perhaps apart from the displayed motivation to appear to the percipient and the message conveyed, apparitions of living, dying, and deceased individuals share basically the same features (Hart & collaborators, 1956, Mattiesen, 1936–1939). It is of importance that reciprocally confirmed cases which involve only living individuals can be verified by both parties concerned. Because some apparitions of reciprocally confirmed OBEs among the living were purposefully induced by an agent who intended to manifest as an apparition to the perceiver, they provide evidence that the perception of apparitions can be caused by an agent external to the conscious and subconscious layers of the psyche of the percipient. Given the different lines of evidence that point to a continuity among apparitions of the living, the dying, and the deceased, we might then regard it as a logically plausible supposition that apparitions of the deceased also can be caused by agents outside the psyche of the percipient. That would imply in the first place a causation by the deceased themselves.

4) In addition, crisis apparitions including reciprocally confirmed ND-

OBEs establish an important link to interpreting a very common feature of NDEs and DBVs: There are many reports of persons in near-death states who claim having met *deceased* family members or friends during NDEs and DBVs (Barrett, 1926, Betty, 2006, Osis & Haraldsson, 1997). These claims are often regarded as hallucinatory fulfillments of personal expectations. Still, it is not clear why dying persons should long predominantly to meet with already deceased family members instead of longing to see those who are living, but who are not able to come for a last visit to say goodbye. In fact, it seems that in those cases in which a dying person intensively longed to see an absent living family member, *the dying preferably appear to these living persons*, *not vice versa*. The literature on crisis apparitions (including reciprocally confirmed ND-OBEs and dreams) contains many examples supporting this proposition (see for example the case references listed in the sections on ND-OBEs above).

However, encounters with persons still alive are also reported in DBV and NDE accounts. They amounted to 18 percent of an American sample of DBVs containing 187 cases in which information on this feature was available, compared with 66 percent of reports comprising encounters with the deceased (Osis & Haraldsson, 1977). In NDEs, Bruce Greyson (2010) reported that out of 665 NDE accounts, four percent included an encounter with a living person, whereas 21 percent reported meeting a deceased person. Sometimes, encounters with the living during DBVs are regarded as hallucinations, e.g., due to brain malfunction or the fulfilment of wishful thinking, whereas visions of the deceased are considered of more autonomous and veridical origin (Osis & Haraldsson, 1997). However, I know only a few published DBV accounts that comprise seeing or sensing living persons. It seems, all of them are reciprocally confirmed cases and warrant closer examination. For example, a very sick man has reported seeing his daughter, who stated she had succeeded in projecting herself briefly into his room after she had sensed that his health was deteriorating (Hill, 1917:17). In a second case, a dying father has reported seeing an image of his living son, and the son has reported seeing the face of the dying father at the same time (Barrett, 1926:87). In another case, a dying and largely unconscious man seemed to imagine that his absent living brother was with him. This brother had a strange presentiment of the former's death, and at one point noticed that his clock had stopped. After he had reset it, he heard distinct words in his brother's voice being spoken in his room, which, as it was later confirmed, had in fact been his last words. The brother had died at the time the clock had stopped (Johnson, 1898–1899:245). Couldn't it have been possible that the dying brother had, at least partly, extended his senses or his mind to the living brother in a kind of ND-OBE or clairvoyance, without the latter noticing it? Such examples indicate that it might be premature to classify all DBVs in which encounters with the living were reported as wishful

hallucinations of the dying, even when the dying had intensively longed to see these persons. It might as well be worthwhile to determine the activities and the state of consciousness of the living individuals during the time of their appearing, because many of them might have been sleeping, drowsy, ill, or in a similar passive and dimmed state, just like it is reported from other apparitions or communications by the living outside the context of dying (Nahm, 2010b).

Moreover, there are numerous cases on record in which the dying erroneously *thought* they had seen apparitions of living persons—but the individuals in question had in fact died already (Greyson, 2010, Kelly, Greyson, & Kelly, 2007). In addition, patients in near-death states often see visions of persons entirely unknown to them, a finding difficult to explain along the lines of wishful thinking (Osis & Haraldsson, 1997). And sometimes, such unknown persons were identified retrospectively by the descriptions of the NDErs or even from photographs as deceased relatives (Badham & Badham, 1982, Fenwick & Fenwick, 1996, Gibbs, 2005, Kelly, Greyson, & Kelly, 2007, Rawlings, 1978, Sartori, 2008, van Lommel, 2010). Unknown apparitions who were later recognized from photographs as deceased relatives are also reported from DBVs (Callanan, 2009). If such accounts can be trusted and if contradictory DBV and NDE reports are not massively withheld from publication, these findings would additionally support the notion that persons in near-death states do not simply hallucinate what they would like to see, but that their visions of the deceased possess a certain degree of objectivity and autonomity.

Shared NDEs and Shared Dreams

As noted in the previous section about unexplained bodily changes, dreams and NDEs seem related in that experiences made in both states can result in organic alterations. Shared or mutual dreams might provide a means for better understanding NDEs in a more general sense (for examples of shared dreams, shared lucid dreams, and a comprehensive literature compilation on shared dreams, see Magallón, 1997). According to Raymond Moody, the initiator of modern NDE research, "dozens upon dozens of first-rate individuals" present at the bedside of a dying loved one have reported to him that in a kind of shared NDE, they had lifted out of their own bodies, accompanied the dying upward toward a beautiful and loving light, and experienced the same emotions described by the NDErs themselves (Moody, 1999:4). Just recently, Moody (2010) has published examples of these reports. Such cases have also been described by others (e.g., Hardy, 1979, Morse & Perry, 1992, 1995, Fenwick & Fenwick, 1996, van Lommel, 2010). Shared NDEs could also be regarded as shared ND-OBEs—with the addition that they include mutual experiences of later stages of NDEs featuring more transcendental aspects. Given these parallels, it seems that NDEs and (lucid) dreams are experiences that can be shared with

other living persons in a sort of nonphysical or mental space. In this context, it is of interest that a large proportion of spontaneous psychic experiences are reported from dreams, with death and dying constituting predominant themes (Van de Castle, 2009), and that many of these ostensibly paranormal dreams are characterized by a vividness or an intensity missing in most ordinary dreams (Stevenson, 1971). Correspondingly, the literature on afterlife encounters is in agreement that dreams are a major source for ostensible encounters with the deceased. Some afterlife encounters even seem to involve OBE-states wherein the experiencer is suddenly lifted out of his or her body, floats upward through a tunnel with a bright light at its end, and meets with the recently deceased loved one (Guggenheim & Guggenheim, 1995, van Lommel, 2010)—features familiar from the just-described shared NDEs. Thus, with special regard to such afterlife encounters and shared NDEs, it is justifiable from a theoretical perspective to assume that the faculty to glimpse into a transcendental afterlife realm does *not* depend on the condition of being (almost) dead, but on entering an appropriate state of consciousness. The sometimes-heard assertion that NDErs cannot glimpse into the afterlife realms because they never die but always revive becomes futile in this light. Thus, although I do not disregard the existing differences between (lucid) dreams and NDEs, the existent parallels between both experiences suggest that some of their characteristics might indeed share a related foundation.

Formal Correspondences among NDEs, Mediumship, and CORTs

NDEs also provide a link to mediumship. For example, Giovetti (1999) has described a case in which an NDEr reported having met a woman named Mara during his NDE. She offered him the choice to stay or to return to life. The NDEr decided to return. Later, it turned out that Mara was also a regular communicator of a spiritistic circle and that she had independently given a corresponding account of her meeting with the NDEr during a sitting. A similar case was related by Mattiesen (1936–1939, vol. 2:236). In other interesting cases concerning ostensible mediumistic communications from living but unresponsive patients reported by Daumer (1867, vol. 1:170) and Schiller (1923), the patients acting as alleged communicators did not regain consciousness and died. In the case related by Daumer (1867), the personality continued to communicate from the assumed afterlife and referred to his visit at the circle during the time of his unconsciousness. However, there are many more cases of mediumistic communications that were allegedly transmitted by living agents, at least 80. Although some of them seem to be generated only by the medium's own subconscious wishful thinking (Flournoy, 1899), a considerable number of reciprocally confirmed cases do exist. Many of the reciprocal cases occurred during times when the living agents were drowsy,

dreaming, or purposefully attempting the respective communication (for a brief review on mediumistic communications by living agents, see Nahm, 2010b). Similarly, there are a few reciprocally confirmed cases in which the contents of DBVs corresponded to communications received through mediums at another location. Here, the visions and occurrences at deathbeds were independently described, commented on, or even announced by communicators speaking through the mediums (Bozzano, 1947, Mattiesen, 1936–1939).

Moreover, there are at least 14 CORTs, i.e. cases in which young children claim to remember previous lives, in which the birth of the child who later claimed to remember a previous life was allegedly announced via preceding mediumistic communications (Hassler, 2011, Muller, 1970, Playfair, 1975, 2006, Stevenson, 1997). Usually, the purported previous personalities related this announcement in person through the mediums. In the plain spiritualistic context apart from CORTs, appropriate birth predictions related through mediums have often been reported (e.g., Roy, 2008).

Correspondences among the Contents of NDEs, Mediumistic Communications, and CORTs

Among others, Braude (2003) has argued that even if evidence for veridical ND-OBEs or AVPs could be established, they could not be regarded as evidence for prolonged bodily survival. The human mind might leave the body at death intact, but might disintegrate shortly after. Still, apart from some lines of argumentation already sketched, there are at least two other ways in which ND-OBEs and NDEs in general might be linked to testimonies directly concerning prolonged afterlife states.

1) A link from particularly Western NDEs leads to the contents of the descriptions of dying and the afterlife received through mediums. Many of the mediumistic communicators, the alleged deceased, have given descriptions of what they had experienced during and after dying. Bozzano (1930), Mattiesen (1936–1939), and Crookall (1967, 1974) have outlined correspondences that these descriptions share with narratives of NDErs. These correspondences include leaving the physical body, feeling free from all pain, seeing the deathbed scenery including the mourners, passing a darkness or tunnel, seeing deceased relatives, friends, or angelic beings, living in beautiful light-flooded landscapes, and experiencing a life review. Several of these communicators have related their descriptions of dying through some of the most intensively studied mediums, such as Mrs. Piper, Mrs. Leonard, and Mrs. Willett. The many descriptions of dying related by more popular mediums and in popular books also share the same basic features (Crookall, 1974). It might be possible that many of these authors were simply experiencing or reporting what they had expected because of their familiarity with spiritualistic concepts of dying

and the afterworld. However, in some cases the medium seemed unaware of traditional spiritualistic concepts and still related corresponding descriptions of the dying process (Landmann, 1954). Moreover, some communicators of mediums gave veridical descriptions of events that happened at their deathbeds although none of the sitters was present at this deathbed or knew about these events (Bozzano, 1947, Mattiesen, 1936–1939). From here, it might be only a little step to the many reports of mediumistic communications, afterlife encounters, apparitions, or hauntings in which the purported deceased agent displayed continued knowledge about what was happening in the physical world since he or she had died (Mattiesen, 1936–1939).

2) The second link discussed in this section concerns the ostensible memories of the children who claim to remember a previous life. Sometimes, they report a considerable amount of correct information about the life of the previous personality that they can hardly have come to know by means of normal perception or communication (Stevenson, 2001). In the present context, it is of relevance that several children of different cultural contexts gave additional descriptions about how they had spent the intermission period between the two lives. Often, these descriptions start with the claim that they had left the body of the previous personality when dying, then perceived the scenery from above. Some children also stated that persons in the vicinity of the lifeless body were not able to see or hear them, although they tried hard to contact them from the OBE-state. Some also described correctly what had happened with the dead body of the previous personality, for example by providing veridical information concerning events at the funeral (Hassler, 2011, Stevenson, 1997, Tucker, 2006). Thus, these children report features familiar from NDE reports and descriptions of death and the afterlife related by mediums, or even from the highly controversial literature on hypnotic past life regression (e.g., Whitton & Fisher, 1986). Some of the children have reported prolonged states of discarnate existence in this physical world, for example living in a tree and observing the persons passing it, including their future parents (e.g., Veer Singh in Stevenson, 1975, Bongkuch Promsin in Stevenson, 1983, Ma Khin Mar Htoo in Stevenson, 1997). Others have reported entering a transcendental afterlife realm after having left their physical bodies. This realm contains several features likewise familiar from NDE accounts, such as meeting deceased friends, relatives, superior mystical beings, and, occasionally, experiencing a life review, and even passing through a tunnel into a light (Hassler, 2011, Playfair, 2006, Rawat & Rivas, 2005, Stevenson, 2001). For example, Shanti Devi, an Indian girl born in Delhi in 1926, talked of experiencing a "profound darkness" when she died in her purported previous life, followed by a dazzling light, entering a beautiful garden, meeting men in robes, and experiencing a life review (Rawat & Rivas, 2005). In general, the accounts of intermission periods

in CORTs seem to follow the different cultural patterns (Hassler, 2011, Sharma & Tucker, 2004) also reported from NDEs (Kellehear, 2009). For example, in typical Asian intermission period depictions and Asian NDEs the protagonists will not describe encountering a brilliant light at the end of a tunnel. In this regard, the case of Shanti Devi is atypical. Asian people will usually also not experience a panoramic life review. Rather, they describe their lives being judged by a man or a religious figure, as in the testimony of Shanti Devi. In several CORTs including Shani Devi's case, the children have also claimed that they were sent back to earth on behalf of an otherworld inhabitant, a familiar feature also present in NDEs. But, of course, they ended up in the body of the newborn child—not in their previous body like in NDEs. Interestingly, there are also a few accounts in which NDErs have described trying to enter the body of a newborn baby or a child who had apparently just died, but gave up on it and returned to their own body again (Brownell, 1981, Shroder, 1999). There are corresponding intermission period descriptions in CORTs in which the children described competing with others for becoming born (e.g., Bobby Hodges in Tucker, 2006), being drawn into the body of a living newborn baby (Ven. Chaokhun Rajsutharjan in Stevenson, 1983), or having "taken over" an apparently lifeless body of an infant (Jasbir Singh in Stevenson, 1974). The latter two cases concern previous personalities who were apparently reborn into the bodies of already existing children and could thus be better classified as cases of the possession type. They might provide a link to other cases of the possession type without intermission period memories such as the cases of Sudhakar Misra (Pasricha, 1990) and Sumitra Singh (Stevenson, Pasricha, & McClean-Rice, 1989). The above-mentioned cases make it difficult to draw a distinct line between the reincarnation and possession types of cases. In fact, Stevenson (1997) has pointed out that it seems only a matter of personal preference whether one regards CORTs in which the previous personality had died during the gestation of the child who remembered the life of this personality after birth as examples of the possession or of the reincarnation type (p. 1142).

The evidentiality of the descriptions of the transcendental afterlife experiences between two lives is difficult to determine. Nevertheless, it is noteworthy that the children who gave accounts of intermission periods between two lives made significantly more verified statements about the life of the previous personality than did other children without such intermission period memories. They also remembered the mode of death of the previous personality significantly better and gave significantly more names of persons supposedly playing a role in their previous life (Sharma & Tucker, 2004). Thus, Sharma and Tucker (2004) conclude that "their reports of events from the intermission period seem to be part of a pattern of a stronger memory for items preceding their current lives" (p. 116). Similar to NDEs, there are even a few cases in

which a child claimed to have met with a deceased person in the intermission period and provided verifiable details about this person that the child could have hardly learned by normal means (Banerjee, 1979, Tucker, 2006). Moreover, certain memories of alleged experiences in the interim existence appear to be sometimes confirmed by respective testimonies from the physical plane. For example, the child may claim to have appeared to the future mother as an apparition in an idiosyncratic way, and the mother may remember seeing a corresponding apparition at the time in question (e.g., Maung Yin Maung or Ven. Chaokhun Rajsuthajarn in Stevenson, 1983). Or, the children may talk of having sent a dream to their future mother or of visiting people by "coming down" from the afterlife realm. The persons in question may remember dreams with corresponding content—experiences that apparently constitute a peculiar kind of shared dreams (e.g., the cases of Ma Par, Maung Zaw Thein Lwin, and Pratima Saxena in Stevenson, 1997, or the case of Ven. Sayadaw U Sobhana in Stevenson, 1983). But the more typical non-reciprocal CORT announcing dreams are sometimes quite remarkable. Here, the future parents dream, sometimes repeatedly, of a deceased personality who states his or her wish to be born to them. Later, the subsequently born child talks of a life that corresponds to the life of the personality who had appeared in these dreams, and the child may also display bodily characteristics or birthmarks that correspond to the features of the previous personality (e.g., Necip Ünlütaskiran in Stevenson, 1997). Dreams in which the birth of a child is announced are also part of shamanistic lore (Müller, 2006) and many other traditional belief systems, and are likewise reported in contemporary Western non-reincarnationist contexts (Carman & Carman, 1999). Similar to announcing dreams in CORTs, NDErs sometimes report having encountered a child during their NDE who announced that he or she will be born to the NDEr later in their life (Atwater, 1994, Carman & Carman, 1999). It may also be mentioned in the present context that there are several NDE accounts that seem to include displays of events pertaining to previous lives of the NDEr (e.g., Atwater, 1994, Messner, 1978, Muller, 1970, van Lommel, 2010), although it is difficult to evaluate these reports. However, at least once an NDEr was allegedly able to verify details of the lives of two previous personalities he had remembered during his NDE when he searched for the locations he had seen in his NDE (von Jankovich, 1993).

To conclude this section about parallels in dying and afterlife descriptions provided in the contexts of NDEs, mediumship, and CORTs, I would like to mention another peculiar feature that appears common to all three sources. All are in agreement that when two or more persons are severely injured or die at the same time at the same location, the apparently self-conscious shapes leaving the lifeless bodies can perceive each other and communicate with each other. There are only a few respective accounts available today. For possible examples

of CORTs see Tucker (2006, a car accident) or Banerjee (1979, two children who died on the same day in an epidemic), for mediumistic communications see Stead (1922, the sinking of the *Titanic*), and for an example regarding NDEs see Sabom (1982, a Vietnam soldier injured in combat). In another example of NDEs reported by Gibson (1999), the 40 members of a firefighting unit were met with an unexpected change of wind on a mountain slope with the fire raging below them. Struggling to breathe, one by one they collapsed and rose above their physical bodies, perceiving the others hovering above their bodies and even communicating with each other. Unfortunately, only one member of this unit was interviewed. Despite the dearth of such cases, the importance of them should be noted. Perhaps they could be specifically sought for in NDE research. If such reports could be independently corroborated by different participants of the same experience, they would provide a strong argument in favor of the possibility of intersubjective experiences during apparently disembodied states of being. The belief that those who leave their physical body—be it during life or after death—are capable of seeing other disembodied spirits is part of ancient traditions in many cultures of the world (Cuevas, 2003, Eliade, 1974, Sheils, 1978).

The Work of Robert Crookall (1890–1981)

In this section of the article, I present in more detail certain aspects of Robert Crookall's largely neglected work on NDEs. Derived from his comparative analyses of the testimonies of NDErs ("pseudo-dead"), OBErs ("astral projectors"), bystanders at deathbeds, and purported mediumistic communications from deceased individuals, he has proposed a model describing the subsequent experiences during the process of dying and of entering into the afterlife realm. Following is a summary of important features of Crookall's model (derived from Crookall, 1967, 1974, 1978).

1) The dying send out a telepathic "call" to loved ones who have passed on before, either consciously or instinctively and unconsciously. These deceased individuals will then aid and instruct the dying throughout their transition. It seems Crookall should have added that this call might also reach living loved ones, this time causing (reciprocally confirmed) crisis apparitions and other synchronistic death-related phenomena.

2) The dying feel vibrations, noises in the head, dizziness, etc.

3) They may experience a blackout or a sensation of darkness, and leave the physical body chiefly via the head in an upward direction. Then, they are capable of seeing their physical body from above, the mourners at the deathbed, etc.

4) This leaving of the physical body is sometimes perceived by observers at deathbeds. Then, a cloud-like mass, a fog, or a mist is seen to leave the

physical body chiefly via the head and to collect above the body, ideally forming a luminous replica of it. Typically, this luminous "double" would hover horizontally above the recumbent body, being attached to it by an "astral cord."

5) In general, the surviving essence of the deceased is ovoid or shapeless, but assumes the shape of the physical body due to respective conscious or subconscious impressions of remaining mental images.

6) The dying often feel well, painless, peaceful, and alert after their consciousness has slipped out of the body.

7) They might experience travelling through darkness or a tunnel with a bright light at the end, and enter a light-flooded beautiful afterlife landscape inhabited by the deceased and superior beings.

8) They experience a review of their past life.

9) During all these experiences, the physical body and its double may still be connected by the "astral cord." Only when this cord is broken is the return to the physical body rendered impossible and the person has factually died.

This model bears numerous similarities with the model of features contained in NDEs proposed by Moody (1975). However, there are also differences, especially concerning the many secondary details not included in the sketch of Crookall's model presented above. A more obvious dissimilarity is the paucity of references to the "astral cord" in most other publications on OBEs and NDEs. In a survey of the literature on OBEs, Alvarado (2000) found that only seven percent of OBErs reported something like a cord-like connection to their physical body. In a cross-cultural study, members of only one out of 67 non-Western cultures in which the belief in OBEs was established expressed the belief that the physical body is linked by a cord to the "double" during their separation (Sheils, 1978). It seems that the connecting cord is more rarely observed than is sometimes assumed, and is by no means a necessary and universal feature of OBEs and NDEs. Still, it is of interest that the cord *has* been reported under different circumstances by a variety of observers of different cultures, many of whom were unfamiliar with spiritualistic concepts regarding OBEs and the dying process (for a Muslim NDE containing a description of a luminous cord, see Giovetti, 2007). Such divergent findings stress the significance of systematic studies into the phenomenology of OBEs and NDEs.

Fogs, Mists, or Lights Emanating from the Body of the Dying

Confirming Crookall's findings, Moody (1999) stated that "lots of doctors and nurses have described to me how they perceived patients' spirits leaving their bodies at the point of death" (p. 5), and he has described only some of these cases (Moody, 2010). In a literature survey covering roughly the last 200 years, I found 142 case references that were related by 124 different witnesses, excluding general claims that did not contain concrete case examples and cases

reported in the hagiography from saints and mystics (e.g., Görres, 1836–1842). With regard to NDEs, I found only two cases in which a light was reported surrounding the NDEr. In the first case (Jaffé, 1962), a bright radiance was observed around the head of Carl Gustav Jung during his NDE. In the second case (Sabom, 1998), a bright light surrounded the head, the shoulders, and the chest of an NDEr, although it seemed not clear whether the light emanated from the body or originated from an external source. The latter group of phenomena represents another intriguing set of spontaneous experiences reported by bystanders at deathbeds, but space prohibits discussing them in this article. With regard to luminous phenomena originating from the body of the dying, there appear to be two related kinds of phenomena: (1) The mentioned mists, fogs, or luminous clouds leaving the body (113 case reports), and (2) luminous halos, radiances, or flame-like protuberances emanating predominantly from the head of the dying (29 case reports). Both types of phenomena continue to be described up to the present (Fenwick & Fenwick, 2008, McAdams, 1984, Moody, 2010, O'Connor, 2003, Randall, 2009) and were sometimes reported in combination (Monk, 1922, Tweedale, 1925). Of the 142 cases in my collection, 45 cases were reported by persons said to be mediums or psychics. All these 45 cases pertain to the first category of phenomena, the mists or shapes leaving a dying body. The 29 cases in which only a luminosity around the head was described were all reported by people not recognized to be psychic. In the first category, visions of the formation of a fully developed "double" above the deathbed as postulated by Crookall were reported 58 times. Other case reports refer to only brief glimpses of something leaving the body via the head or the abdomen, or even from the feet (Fenwick & Fenwick, 2008). Many cases of the first category were also reported by apparent non-psychics who at times gave descriptions of luminous phenomena that lasted for several hours and were witnessed collectively by up to 11 persons. The descriptions related by the witnesses were not always entirely congruent and indicated selective or divergent perception of the phenomena (e.g., Monk, 1922, McAdams, 1984). The phenomenological variations in the 142 case descriptions including the collective cases in which divergent observations of the same event were reported could indicate a difference in the ability to perceive these phenomena among the observers, divergent memories of identical observations, differing degrees of autosuggestion, differences in the dying process itself, or combinations of these factors. It might even be possible to photograph or film such kinds of luminous phenomena (Alvarado, 1987). A successful documentation would point to an at least partly objective component of these lights. Yet, the field of observations of luminous phenomena at deathbeds is an almost untouched issue. But, like many of the other death-related experiences I have already touched on, it seems well worth studying.

Concluding this section about luminous phenomena emanating from physical bodies, I'd like to mention that in personal communication a midwife has informed me that she had on two occasions seen a bright light shining around the body of a newborn baby. Except for one reference (Losey, 2007), I have so far not been able to find other examples of this phenomenon in the literature. Nevertheless, I should not be surprised if many of the paranormal phenomena reported from near-death states would also be reported sometimes from near-birth states—just as announcing dreams and announcing apparitions seem to be mirrored by afterlife encounters via dreams and apparitions.

Unexplained Death-Related Music

An experience similar to the perception of unexplained luminous phenomena observed by bystanders at deathbeds is the perception of unexplained music around the time somebody dies. Authors such as Perty (1861:470–472), Bozzano (1943/1982), and Rogo (1970/2005a, 1972/2005b) have collected cases in which bystanders at deathbeds have reported hearing inexplicable music of celestial quality. In a literature survey, I have found 47 cases in which persons attending to dying persons claimed to have heard such music on the day they died, or the day before. These experiences seem to be rarer than luminous deathbed phenomena, but in five cases the music and something leaving the body were perceived simultaneously. However, the ability to perceive this mystifying death-related music seems less related to psychic abilities compared with the perception of mists or shapes leaving the dying body. All 47 cases involved apparently non-psychic persons, although on two occasions a medium was among those who had heard the music. In total, 31 collective perceptions of music at deathbeds were reported. And, comparable to DBVs and NDEs in the blind (Lerma, 2007, Moody, 2010, Kessler, 2010, Ring & Cooper, 1999), there is one case indicating that a deaf man in a near-death state was able to "hear" the celestial music that was also heard by his caregivers (Podmore, 1889–1890). An intriguing aspect of these experiences is that the descriptions of the music often seem identical to the descriptions of the ineffable celestial music reported from OBEs, NDEs, DBVs, afterlife encounters, or the music described by purported communicators from the afterlife speaking through mediums (Bozzano, 1943/1982, Rogo, 1970/2005a, 1972/2005b, Moody, 2010). In that sense, unexplained celestial music heard at deathbeds might represent one more clue indicating that some kinds of genuine paranormal phenomena occur in near-death states, and thus during NDEs. Although the documentation standard of most of the reported cases is low, it seems likely that these death-related musical experiences represent another intriguing topic that has slipped the attention of most parapsychologists and NDE researchers alike.

Terminal Lucidity

Another peculiar phenomenon reported from near-death states can be described as terminal lucidity. In such cases, drowsy, weak, confused, or unresponsive patients start to regain mental clarity shortly before they die. This observation has frequently been reported with DBVs. As soon as the dying see these visions, they can suddenly become fully alert and lucid; sometimes, they will sit straight up in their bed and display a bodily strength they lacked during the preceding days or months (Barrett, 1926, Bozzano, 1947, Kelly, Greyson, & Kelly, 2007). Terminal lucidity cases of special interest concern patients with severe psychiatric or neurologic disorders who became lucid again shortly before dying (Nahm, 2009b, Nahm & Greyson, 2009, Nahm et al., 2011). At present, I am aware of 85 published cases of this sort. They include patients with brain tumors, dementia, and Alzheimer's disease, strokes, meningitis, schizophrenia, and many cases without proper medical diagnoses. Several other cases were related to me in personal communication. The most perplexing incidents are those in which the mental disorder was caused by diseases resulting in the degeneration or destruction of the patient's brain structure such as Alzheimer's disease, brain tumors, or strokes. Should these observations be substantiated in future investigations, they would pose serious problems for the mainstream model of consciousness and memory processing. Here, the human mind is regarded as the simple byproduct of the interaction of firing neurons. But similar to NDEs, one might be inclined to ask: How do cognition and memory processing work under conditions of severe brain malfunction, or even severe degeneration of the required neuroanatomical brain structures? The unexpected lucidity displayed by some patients could also be related to the extraordinary mental clarity often reported from NDEs and, as mentioned, to the lucid moments during DBVs. Guy Lyon Playfair reported a case of a DBV that highlights this possible relation (email correspondence, 22 December 2009). In this case, a dementia patient experienced a DBV the day before she died. In that vision, she saw and recognized deceased family members, namely a brother and a sister who were long dead. The vision was so real to the woman that she asked her caregiver in a surprisingly clear manner for three cups of tea. Yet, for at least one year, she had not been able to recognize the family members who lived with her in the same house. Moody (2010:15) has described a similar case involving an elderly man with Alzheimer's disease who was out of touch with reality for two months. On the day he died, he suddenly sat up in his bed, and held a clear and normal conversation with "Hugh," looking upward with bright eyes. It turned out later that this Hugh was a brother of his who had just died of a sudden fatal heart attack about that time, which was unknown to everybody present.

Although persons with dementia may be able to remember or hallucinate long-familiar individuals such as sisters and brothers better than those who played a role in the more recent past, the visions and conversations of these two persons represent a peculiar act of cognition and responsivity, given their previously deranged mental state. If dementia patients can suddenly recognize close living family members during terminal lucidity, others might well recognize deceased family members during DBVs or NDEs, perhaps due to entering a comparable stage of the process of loosening ties with the obstructive physical brain matter. In fact, it is a long-standing claim in spiritualism that many mental disorders are reversed or healed in the discarnate state. The already-mentioned reports of mediumistic communications with unresponsive, mentally disturbed, or dementia patients might support such a notion (Daumer, 1867, Mattiesen, 1936–1939, Monteith, 1921, Nahm, 2010b, Schiller, 1923). Some therapists even attempt to establish mediumistic communications with nonresponsive patients to help them regain an increased ability to communicate, or to help them to let go and die—allegedly, with some success (Sonnenschmidt, 2002). With regard to dreams in which nonresponsive persons play a role, there is an account of a five-year-old boy suffering from a malignant brain tumor who had already spent three weeks in a coma (Morse & Perry, 1990:65). His family members were constantly present at his bed and prayed for him. At the end of the third week, the boy appeared to the pastor of the family's church in an unusually vivid dream. He urged the priest to tell his parents that his time to die had come and that they should stop praying. The parents agreed and told their boy that it would be okay if he would go now. Suddenly, the boy regained his consciousness. He thanked his family for letting him go and predicted that he would soon be dying. He died the next day. A similar case was reported by Lerma (2007). Generally, it seems not uncommon that patients who had been in a deep coma suddenly become alert again shortly before they die to say goodbye to loved ones at their bedside (Fenwick, Lovelace & Brayne, 2010). Perplexing as such reports may be, they offer lines of future inquiry which might prove to be valuable especially for those who work with dementia or otherwise nonresponsive patients, for their families, and of course for the patients themselves.

Unusual Memories of Infants

The phenomenology of NDEs and, perhaps, terminal lucidity in patients who suffer from degenerative brain diseases pose difficulties for current neurobiological models of the mind and memory processing. The same applies to infants who seem to recall memories of things they should not be able to recall. Regarding CORTs, it is in my opinion reasonable to assume that several

of these children possess knowledge that they cannot have obtained through normal means of perception and communication. Still, it remains obscure how the knowledge about the previous personality's life can be remembered at all—especially when assuming that all personal memory is somehow stored in one's brain. In CORTs, some children may also talk of events occurring about the time of or during their birth (e.g., Ven. Chaokhun Rajsuthajarn in Stevenson, 1983, Bobby Hodges in Tucker, 2006). An intriguing case is represented by Pratomwan Inthanu (Stevenson, 1983). This woman remembered the life of a previous personality who died at the age of only three months. She gave several veridical statements about the short life of this baby, and stated that the process of birth into her present life had frightened her. Such cases seem to link CORTs to other contexts in which persons claimed to remember their birth or to experiences they had had when they were only a few days or months old. For instance, psychologist David Chamberlain (1988) has investigated cases of children who claim to remember their birth. Similar to CORTs, these children start speaking about their experiences at the age of two or three years. Sometimes, they seem to give veridical descriptions of details of the birth process and of complications that were never discussed in the family. Obstetrician David Cheek has reported similar cases in which hypnotically regressed persons gave veridical descriptions of specific incidents during pregnancy (Cheek, 1992). The parallels between memories of pre- and perinatal experiences and of NDEs have been detailed by Jenny Wade (1998). Chamberlain (1988) also reported the account of a scientist who claimed to remember leaving the baby's body when he had a sensation of dying during his birth. He remembered hovering above the scenery until the baby's body was pushed through the birth channel—apparently, he described an ND-OBE. Similarly, there are several NDE accounts that date back to the first days or months of life (Cornillier, 1927, Fenwick & Fenwick, 1996, Ring & Valarino, 2000, Serdahely, 1995, Serdahely & Walker, 1990, Sutherland, 1995, Walker, Serdahely & Bechtel, 1991). Usually, the children who claim to remember such NDEs begin to talk about them a few years later. They may tell about leaving their bodies, seeing it and the immediate surroundings from above, travelling through tunnels toward a light, or about meeting mystical figures—features that correspond to NDEs of adult Westerners. Thus, Fenwick and Fenwick (1996) speculated that such experiences indicate that NDEs do "not depend on the maturation and development of the brain" (p. 264). In support of this suggestion, it should furthermore be noted that many adult NDErs also report no less puzzling accounts of witnessing their own birth or events of their earliest childhood when experiencing their life review (e.g., van Lommel, 2010). The supposition that NDEs do not depend on the state of the organic organization of the brain would offer an explanatory model to account for the enigma of

why NDEs can be so remarkably similar under a variety of brain physiological conditions, ranging from mere fear of dying during conditions of optimal brain functioning to total anoxia and cessation of all brain activity for a prolonged time. Thinking along these lines might also lead to a better understanding of terminal lucidity, DBVs, and, in addition, to a better understanding of the enigmas associated with memory processing in general (Braude, 2006, Gauld, 2007).

Concluding Remarks

I have aimed at demonstrating how NDEs could be related to a variety of peculiar experiences and how connecting the dots might enable us to draw firmer conclusions about the nature of NDEs and human consciousness—if only after performing future investigations into the different subtopics. Because dying can be regarded the most deeply mysterious of the events likely to befall the living, it seems not unreasonable to strive for a better understanding of what precisely is going on during this process, and perhaps even after it. Except for psychologically and sociologically driven fears to address the taboo of dying, there is no reason why it should not be possible to study this neglected field of research by applying current scientific methods used in brain physiology, neurology, palliative care, grief research, developmental biology, psychology, or in parapsychology. Although it must be admitted that we seem far from this prospect at present, I hope that this paper might serve as a reminder that NDEs are not isolated oddities occurring at initial stages of the cessation of vital body functions, and that assessing the different experiences described might contribute to a better understanding of NDEs and the process of dying, and, perhaps, to a better understanding of the nature of the human mind.

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RESEARCH

An Important Subject at the Institut Métapsychique International: Jeanne Laplace. The 1927–1934 Experiments

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Abstract—Jeanne Laplace is a psychical subject who was studied extensively by Eugène Osty and his assistants at the Institut Métapsychique International (IMI) in Paris during the years 1927–1934. Since childhood, she had remarkable abilities, probably strengthened by two nervous "shocks" occurring when she was twelve and eighteen years old. Her abilities were rather regular in their manifestation though variable in their quality from one day to another, but they could be solicited at will. Before IMI, she had participated regularly for seven years as a medium in a spirit circle, until a reader of the *Révue Metapsychique* in 1926 introduced her to Eugène Osty, director of the Parisian institute, who at once convinced himself, after having tested Jeanne Laplace, of her abilities. To obtain paranormal knowledge, she had to feel a kind of "link" with the "target" person. The paranormal information occurred mainly through visions, gustatory, olfactory, and tactile hallucinations. In order of importance, after the visions, the paranormal information occurred as "impulsive words." Two remarkable séances were conducted at IMI in Paris with the English researcher Harry Price. Her abilities were also studied by Henri Desoille in the form of paranormal diagnosis of diseases. Jeanne Laplace, at the IMI in Paris, showed herself to be a gifted subject; nevertheless some critical points remain concerning mainly the execution of the séances and the method of evaluation used.

Keywords: Institut Métapsychique International—Jeanne Laplace—Eugène Osty—Harry Price—Henri Desoille—clairvoyance—metagnomy—paranormal knowledge

Introduction

Jeanne Laplace, a French woman, when at the Institut Métapsychique International (IMI) in Paris, between the 1920s and the 1930s, had the opportunity to be studied constantly, for a long period of eight years, by Eugène Osty and his assistants. Many séances were recorded, then duly illustrated, word by word, with details and other information. They remain highly interesting,

precious documents today, as a check, comparison, and further judgment about the possible mechanisms of the origin and course of some extraordinary abilities that allow the subject the acquisition of reliable paranormal information.

Jeanne Laplace probably inherited her paranormal abilities from her maternal grandmother, who distinguished herself with premonitions concerning her sons, and also from her mother, who, from nine years of age, showed similar gifts. Her cousin also showed paranormal abilities, but in all these women the extraordinary ability was rather spontaneous and substantially focused on dramatic familiar events. Jeanne, instead, with the passing of time, showed a regular and powerful exercise of her paranormal abilities. When aged six and in Paris, while she was sitting at a table, she began to cry suddenly, shouting that Aunt Clotilda was dead. This relative lived in the Jura region and all of them knew that she was healthy. The following day, however, a cable communicated to the relatives that their aunt had died suddenly the previous day. On another occasion dating back to the same period, Jeanne was given by a person in business affairs with her father a chocolate fish as a gift. Her parents insisted that she thank the generous donor, but she, without showing joy or gratitude for the received gift, told the man she could not love him because he beat his wife. Apologies were made to the man for such presumed puerility and infantile imagination, but afterward it became known that Jeanne was right that day: The matrimonial life of that man, considered quiet by many people, was actually often rather stormy (Osty, 1934:73–76).

At the age of twelve, Jeanne suffered from scarlet fever, a pathology which caused a strong cerebral reaction. If we strictly follow what Eugène Osty refers to in relation to this situation, we have the clear feeling that the disease the young Jeanne had had included an experience of a kind of *Near-Death-Experience*: In fact, it seemed to her she rose up to the ceiling of her room, and was forced to enter what seemed to be cotton–wool. There she had the perception of her dead forefathers waving her to meet them and at the same time she had another perception, that she was reaching another world, and that she would not return to this one. Suddenly the whole set of images vanished with a sense of detachment and afterward she regained consciousness. At that point the doctor ascertained that the condition of Jeanne's health improved. After that serious pathology, the manifestations of clairvoyance were more numerous and also more remarkable. A serious flu, again with cerebral involvement, affected her when she was eighteen, again increasing the activity and the strength of her abilities, as if such nervous "shocks" determined, somehow, neurophysiological conditions that supported the process of paranormal knowledge (Osty, 1934:76–77).

The painful loss of Jeanne's fiancé, during the First World War, was the final turning point and added a moral stimulus to the pathology ones. One of her girlfriends, in order to relieve her friend's pain, brought her to a spiritistic-

like circle where a medium acted with the help of some assistants. There the medium told her that she had lost her aunt, that is Aunt Clotilda, and that Jeanne could consider herself a medium. Therefore he invited her to sit at his side and put her hands on the table. This table, with the joint touch of the two subjects, moved, and through the interpretation of a conventional code, expressed intelligible communications. Jeanne participated regularly for seven years as a medium in that circle, adapting herself to its habits, rites, and doctrines, until in 1926 a reader of the *Revue Métapsychique* introduced her to Osty (Osty, 1934:77).

Jeanne Laplace

Osty (1874–1938), an active and ingenious paranormal researcher, medical doctor, and director of the Institut Métapsychique International (IMI) in Paris, gained the direction of the Institute in 1925 after the dramatic and sudden death, by a plane accident, of Gustave Geley, the first director.

Founded in 1919 by several researchers to scientifically investigate paranormal phenomena, the IMI was distinguished in the following decades for high-quality research into mediumistic and ESP phenomena, saw a declining period starting from the 1950s, and then a had a complete reorganization in 1998 with President Mario Varvoglis, presenting itself once more as a prestigious institution focusing on the most serious French parapsychological research (Varvoglis & Evrard, 2010).

Osty was soon persuaded, through some preliminary tests, that Jeanne indeed had the gift of metagnomy, a word coined by Boirac (1917:224), indicating the knowledge of facts by the mind beyond what we can commonly know, also called paranormal knowledge. That is by extraordinary means she could "know" the past and the future, the life, the personality, and the events of other human individuals. Osty therefore arranged an experimental protocol that did not leave any doubt as to the individuation and the assessment of the indications coming from that paranormal knowledge (Osty, 1934:77–78).

Also in 1926, the year in which he met Jeanne, Osty published an important work dedicated to Pascal Forthuny (1872–1962), making him very famous.

This fame could have attracted other gifted individuals toward IMI, such as Miss Laplace. Forthuny had for many years been expressing surprising abilities of clairvoyance and precognition that lasted for almost all his life. In particular, in 1926 Osty planned with Forthuny the precognition experiment "chaise-vide" or "chair-test," in which the subject tries to describe the physical and psychical characteristics and essential life events of an unknown individual who afterward occupies a specific seat within a free and completely casual seating arrangement for the public (Osty, 1926). Also typical of his ability, during the public experiments in which he did not go into a trance but put himself in a state of "concentration," or a light altered state of consciousness, he would trace the past of individuals he had never met. There are some similarities with Miss Laplace, and Osty's work with the latter, in the years 1927–1934, can be considered parallel to the investigations with Forthuny.

There is information about Miss Laplace and her involvement at IMI in the following sources: Osty, 1937:93–94, and Société des Amis de l'Institut Métapsychique International, 1949:60, 1952:79.

General Experimental Conditions

Miss Laplace always worked as a medium in an apparently waking condition, or "awake-like": In fact, if hypnotized by Osty, she lost all of her paranormal abilities. She passed from the normal to paranormal exercise of her psyche without any apparent change: Transformation of her mental dynamics occurred spontaneously and the psychophysiological condition useful to the manifestation of her parapsychological ability was obtained almost instinctively. She fell into an "altered state of consciousness–like" condition, that could be defined as "trance," though it did not seem quite evident, and, during a séance, she passed regularly through a succession of particular conditions somehow comparable to a "trance." The first particular condition needed more time to appear than the following ones. The only effort made by Miss Laplace was to stop the ordinary movement of her mind, to think of nothing, to become a mental vacuum. She felt the beginning of the useful psychophysiological condition and the coming out of her ability through a certain feeling in the solar plexus: In fact, she said that at a certain point she felt a sense of heat deep in the epigastric area. Then, such heat came out from her body and directed itself toward the "target" person, setting up in that moment a sort of "fluidic" symbolic conjunction or conduction. When this did not occur, she said the repetition of attempts was completely useless, as it was not possible to set any "link." The quality of her paranormal performances was variable from one day to another, her ability needed continuous exercise, and any break was dangerous in the sense that then a number of days were necessary to bring back the former optimal quality. Illness, similarly, had an effect of weakening her abilities (Osty, 1934:216–220).

Once the "link" with the "target" person was established, Miss Laplace experienced paranormal information through visions, that is various hallucinations, various and vivid mental images she believed she saw outside herself, projected onto a "virtual screen," in black and white or colors, motionless or in motion, dumb or speaking (therefore with the addition of auditory hallucinations), with moments of pause. Sometimes those images could be allegoric and submitted immediately into her consciousness for the job of "translation" of their meaning. When the past or the present was involved, that "virtual screen" was about 30 cm from her; when the future was involved, that "screen" moved some meters away, and such distance reflected basically the distance in time of the predicted event. Some of the paranormal information came also through gustatory, olfactory, and tactile hallucinations. After the visions, awareness of the possible paranormal information occurred as "impulsive words," which Osty somehow has discriminated from the "automatic word." The "impulsive word" is considered by Osty as an intelligent process, aware of its aims and its procedures. Practically, observing a person "target" of the clairvoyance, or touching a given object, Jeanne saw nothing, she heard nothing, nevertheless she began at once to speak as if the physical organs of her phonation were moved by an intelligent force outside her; she became aware of the content of that information at the same time as the persons present (Osty, 1934:220–225).

Miss Laplace, like other subjects, could make mistakes, but Osty never considered any of her séances useless. On the other hand, the mistakes have always been useful for Osty to understand, through the analytical study of their differences, the factors causing them, and the mental "game" of paranormal knowledge (Osty, 1925:327–377, 1927:261–274, 1930:97–116, 1934:78–79).

The series of séances, managed and directed by Osty with Miss Laplace, lasted a period of eight years; they rarely would be private, that is carried out in front of one consultant and with a secretary present, but were mostly public, in front of a group of participants, about twenty to thirty individuals, for the most part doctors bringing other people to the séances. During these public séances the "target" person of the proof of paranormal knowledge of his life proposed himself personally or was proposed to Miss Laplace by one of the assistants, or was chosen spontaneously by Miss Laplace, with the basic condition being that up to that moment that "target" person was completely unknown to her. Moreover, at the séances an IMI secretary wrote down the responses given by Miss Laplace and then read them to individual protagonists of the test, sentence by sentence, for the necessary checks of their content. Only at that point did the subject learn about the correctness of her "impressions." Obviously, any addition made by Miss Laplace at that point was not considered, as it could be judged a fruit of possible suggestion (Osty, 1934:77–78).

She often used objects put at her disposal by the consultants. They did not have a "psychoscopic" or "psychometric" meaning (Buchanan, 1885, Denton & Denton, 1863), that is objects impregnated with some "fluidic irradiations" emitted by the owners and by the events in which they were present, and then "translated" into specific information about the past. Instead, those objects were considered to have an intermediary and "supporting" function. According to the ideas proposed about the problem by Osty, they mainly help individual concentration and address, with a kind of thread, paranormal knowledge of the subject toward the "target," that is arousing the subject's "metagnomic" abilities able to bypass the obstacles of space and time and to catch things or facts not present in the objects. In conclusion, no hypothesis of "force" recorded in the objects was able to influence the subject. Among the objects to be used, Osty remarks, a great variety of them could be useful for the optimal course of a séance, according to the personal preferences of the individuals gifted in paranormal knowledge, which were tested every time: organic fragments (hair, nails, and so on), gloves, pieces of clothes and lingerie, jewels, papers, photos, and so on, in conclusion owned objects, or objects only touched, as if the length of the contact did not seem to be a meaningful factor; and once the ability for paranormal knowledge began, such objects could be taken away or even be destroyed, without interrupting the paranormal ability and the flow of communications regarding the "target" person (Osty, 1913:142–165, 1925:207–214, 1929:506).

Many proofs are and remain undoubtedly of great interest and include long and detailed reports about the character, life, and experiences of the consultants.

The private séances with one consultant but always with a secretary present for the recording of the paranormal responses, had however a greater probability of success as opposed to the public séances, and, in these latter, the paranormal responses given by Miss Laplace were generally of lesser quality (Osty, 1934:214).

Osty has remarked that Miss Laplace had come to IMI as a "spiritic medium," convinced she was a simple "receiver" and therefore not responsible for the phenomena she produced. She was certain that the "spirits" used her with the aim of communicating with living people. For his part, Osty, though, looked for an unquestionable communication with a dead man, and never did anything to change her mind, for fear of seeing a decrease in the special ability of Miss Laplace; and nothing was ever done concerning it in the context of the séances at the Parisian institute. Nevertheless, she found herself in a new research context, and its rigorous investigation of her did not presume any specific doctrine, and the researchers had not solicited her abilities in the same way and for the same aims to which she was accustomed in the seven previous years. In the new context, at IMI, only one aim was present: to recreate, through

the subject's abilities, the extraordinary phenomena and to investigate their true genesis. The teachings arising directly from this specific research exercise soon changed the idea that Miss Laplace had formed about her ability and practice, persuading her that her own visions were purely subjective, in which the allegory prevailed, and that the actual source of those images (visual, auditive) and other feelings referred to paranormal information that was always in her mind. Therefore, Miss Laplace had found it inopportune, in the exercise of her clairvoyant abilities developed remarkably at IMI, to involve some "spirit guides" or similar entities, though in some odd moments the old habits of talking about and referring to deceased people made their appearance, and, in any case, she always kept the inner conviction that paranormal knowledge proved the possibility of survival of the individual spirit (Osty, 1934:234–235).

Some Experiments at IMI

Here are some typical and synthetic tests carried out at the IMI.

On February 9, 1927, in a public séance, Mrs. Of. was present for the first time. She was told, among other facts concerning her life and temper, by Jeanne that she had a clever and jealous dog, that liked to be spoilt and pouted like a child, small-sized and well-groomed (exact description), that it had something yellow or blue around its neck (the dog had a blue collar), that she saw a little shape of a tender and lovely female child, but that in that moment that child had grown up, she had been very important for her, she was of "oval-shaped" physical aspect like medals, that her name was *Ginette* or *Gisèle* (her name was *Gisèle*). She was very frail and needed much care, with a predisposition for chest complaints and pulmonary congestion (the young girl had already suffered three pulmonary congestions); regarding her studies, she had difficulty with math, arithmetic was very tough for her (in fact, she had not yet learned her multiplication tables). As far as the lady was concerned directly, Jeanne told her she had married twice (which was correct) (Osty, 1934:80–81).

On March 2, 1927, at a public séance, through an object brought by a doctor present for the first time at IMI, Jeanne "felt," among other things, that a part of the doctor's life had been dedicated to a military career (true), that someone had sung often around him (verified as his mother), that he loved mimosa (true) (Osty, 1934:83).

At a public séance on December 20, 1933, she was given by Mr. K. a lock of hair and immediately she had some "impressions," assessed afterward as being mostly exact, among which was that the consultant's life was marked by the Navy (in fact he had been for more than two decades a naval officer), that he was a very irascible person (true), that he had some pain in his left kidney (true), that his life was also marked by journeys (true), that he had a predilection for blond women (true), that he loved elephants (in fact, he owned, in his salon, a

majolica elephant, which he liked very much) (Osty, 1934:88–89).

During the public séance on March 6, 1934, after two tests of paranormal knowledge, carried out through the touch of objects, Jeanne suddenly turned right, asking if someone had lost a paper, a document having no value in itself, but that could have value from the point of view of a job. Something that had occurred during that week and was more than a paper, it could also be an anatomic part. She added that it would have been left in the Boin. At that point Dr. F. Moutier, who was sitting in the queue of persons situated to the right of Miss Laplace, admitted in public that those precise words concerned him personally. In his laboratory, two days before, he had forgotten an anatomic fragment in a fixative liquid, a circumstance that had caused a little deterioration of the piece. And the name of the fixative liquid was "Boin" (Osty, 1934:145–146).

In the public séance on April 10, 1934, suddenly Miss Laplace shouted that she "felt" a name as *Isabeau* or *Yseult*. Then she wanted to specify *Yseult*, to whom she asked to speak. A lady, present for the first time at the Parisian séances, stood up and said her name was really *Yseult*. She immediately received the following correct "impressions": about her mother's death and the father's new wedding, her desire to travel to a country such as Sweden, her love and practice of music, her repudiation of perfumes, and an engagement broken when she was twenty-three (Osty, 1934:146–147).

Séances at IMI with Harry Price

Harry Price (1881–1948), enthusiast since youth about illusionism, afterward dedicated himself actively to psychical research, including unmasking the tricks mediums could use to produce their phenomena. Strict, tenacious, and tendentially skeptical, he dedicated his life to the investigation of mediums, psychics, hauntings, and poltergeists, and in the end he convinced himself that at least some paranormal phenomena were true.

Osty was not present during Price's experiments, two private séances with a secretary whose task it was to write out in shorthand all the indications noted by Jeanne Laplace. The second séance included three different experiments.

Price had remarked that Miss Laplace spoke the French language with a very clear intonation and there was little ambiguity about her utterances; besides, she did not attribute her paranormal "impressions" to any kind of "spirit guide," "control," or "trance personality" (Price, 1928:485–486).

The first part of the séance on January, 29, 1927, with Price situated in front of Miss Laplace and the young Osty daughter acting as secretary, was carried out with the experimental help of one of the English researcher's personal gloves (previously left by Price on the reception table at the Institute) and brought by Osty to the salon of the séance. The glove was then put in Miss Laplace's hand. A

succession of impressions regarding Price followed, also in reference to his future. Price judged after that they could be drawn from what Jeanne knew about him and from the fact that she was in personal touch with him for more than one hour. Two correct claims however hit him: The first concerned the fact, real, that in that moment of his existence he was reflecting over his past and, unusual for him, was suffering from insomnia; the second was that his grandmother had been for him a real second mother. In fact, his mother died when still young and his grandmother had replaced her and her role in the family. After these revelations, Price decided to give Jeanne a photo, extracted by chance from among many others present in his pocket-book. The image, not showing any kind of written words or marks, represented a young woman's face, seventeen years old at the time of the shot, though she looked younger, fifteen or sixteen years old. The young girl, Miss Mollie F., a member of a family in touch with him, was completely unknown in Paris. As far as the "impressions" drawn by that image, thirty-four in total, Price could afterward verify, on the basis of his own information and also after some necessary further details were received from the F. family, that Miss Laplace had manifested on the whole a very convincing proof of presumed paranormal knowledge through clairvoyance. From that small half-length photo, in fact, she had drawn, among others, the age, the aspect, the temperament, the aptitudes, and the tastes of the original subject, that is the young lady. Surprisingly, she had drawn her first name, Mary, which Price did not know. This was an element that seemed to give him proof, on the other hand, that Jeanne had not obtained those "impressions" from his mind, telepathically. In addition, against the telepathic hypothesis, Price put out the evidence that he had ignored other data, for example Jeanne's claim about a "hidden trouble" that the young girl's father had (in effect, he suffered from cardiac trouble, but kept that hidden from his family) (Osty, 1934:153–157, Price, 1927, 1937a:257–269, 1940:156).

On July 7, 1928, the first experiment of the second séance was carried out by Price and Miss Laplace, with Miss Galloy, Osty's sister-in-law, acting as a secretary. Price extracted from the right inside breast pocket of his coat, randomly, among other papers, a letter contained in an envelope, written by Mrs. H. C., a young widow. Price folded it in such a way that the last white sheet hid all the written pages. Miss Laplace, who as always did not seem to show any apparent condition of "trance" or apparent modification of the consciousness state, took in her hand that letter, without unfolding it, and afterward, without looking at it during the experiment, gave her mental "impressions." There were not less than sixty-one, and Price estimated that forty-eight of them were substantially correct, a quantity that would exclude the hypothesis of simple coincidence. Many of the facts listed by Miss Laplace were completely unknown to him, a circumstance that once again led him to exclude the telepathic hypothesis, and therefore Price had to gain further and more precise information to confirm them. As far as this proof

is concerned, Price considered the first part of one "impression," that is the 56th, extremely meaningful and not due to a banal attempt to give a casual name. Miss Laplace "caught" the name *Bob* or *Bill*, or anyway a name ending in *y*. In effect, *Billy* was Mrs. H. C.'s nickname, and all her friends knew her by that name, even though it is a male name (Osty, 1934:157–161, Price, 1928:486–490).

The second and third experiments of that day also gained positive results.

In the second experiment Price used a typed document placed in his pocket, a contract in the English language (a language not known by Miss Laplace), obtaining twenty-six "impressions," of which twenty-one were considered absolutely correct, two had no link with the document as far as he knew, and three were ambiguous or based on the future (Price, 1928:490–492).

As far as the third experiment is concerned, Price used a typed letter sent to him by Dr. R. J. Tillyard, resting until that moment in an envelope in his pocket, written only on the internal side, and folded with the blank side on the outside. Price extracted the folded letter from the envelope and gave it to Miss Laplace, making sure she could not see the address, nor if it was handwritten, typed, or printed. Price obtained not fewer than fifty-three "impressions" from her, and, according to his precise analysis, this latter experiment was also successful, although the last part of it was not as positive as in the previous experiments. Price supposed that Miss Laplace was tired and that perhaps the conditions of the manifestation of her paranormal abilities had been disturbed by a break (between the second and the third séances) to have tea. Dr. Tillyard, for his part, judged that the description of his own personality and job given by Miss Laplace had to be considered "excellent." Price, who did not know some events regarding Dr. Tillyard, concluded that in this case also the hypothesis of telepathy (that Price himself was a source from which the subject could have obtained information through paranormal ways) could be mostly excluded (Price, 1928:492–495, 1937a:269–277, 1937b:49–51, 1940:153–155,298).

But what appears most interesting regarding Dr. Tillyard was the fact that in the context of this third experiment, Miss Laplace had explicitly indicated a precise prediction for the future, repeated twice: In her 23rd "impression," she said that the writer of the letter would die by railway or car accident and that the wheels and the ruts were not good for him; in the 49th "impression" the subject once more had said that the writer of the letter would be subject to a dramatic death, that is he would be struck down by a brain congestion and would fall on the ruts or under a car. Moreover, in her 30th "impression," Miss Laplace had said that such person would not have much time to live, only some years (de Vesme, 1937:78–80, Price, 1928:493, 1937a:271–272, 1937b:50; 1940:40,154–155,298). We remember that the prediction was made in 1928. At the beginning of 1937, Dr. Tillyard died as the consequence of a car accident near Canberra, Australia, where he was living (de Vesme, 1937:78, Price, 1937b:49, 1940:40,155,298).

The Paranormal Diagnosis

Henri Desoille was, at the time of his study of Miss Laplace, in a medical internship in the Hôpitaux de Paris. Afterward, he became professor at the Faculty of Medicine of Paris and directed the Chair of Labour Medicine from 1949 on. He was a member of IMI from 1937 to 1953, after that an honorary member. Desoille wondered about the problem of the paranormal diagnosis of diseases; in his opinion, it seemed sufficiently clear that there was a reality to the phenomena of clairvoyance or metagnomy, though the intimate mechanism was unknown and the phenomena still appeared rather irregular and capricious. Waiting for better knowledge of the mechanism and of the reasons for the extraordinary manifestations, he asked himself what their practical use could be. In particular, how can the clairvoyant's information support a doctor in his professional activity, from the point of view of the diagnosis and prognosis of various diseases? Desoille immediately observed Miss Laplace with this particular aspect in mind. He noticed that some of her predictions could have no practical utility. For example, the precise pre-visions of the oncoming death of a patient, whose apparent condition did not show any change (had she caught pathological changes acting in that moment that somehow escaped the doctor?); also, others were disputable, as they could come from the normal perception of symptoms that were much evident. Also, problems of interpretation were present, and from such a perspective Desoille observed that it was necessary that the subject learned to distinguish what he "felt" from what he interpreted. It was up to the doctor to interpret clairvoyant's impressions, and, moreover, it was necessary that the clairvoyant owned the technical rudiments regarding medicine so that he could be more precise about his paranormal information. In conclusion, Desoille noted that the clairvoyant rarely gave useful information to the doctors, because they were rather far from having the ability of doing a medical examination carried out according to proscribed professional rules. A practical usefulness, however, could be the "detection" of an infection still in early stages, but after this information was passed to the doctor any followup verifications were immediately and unfailingly up to the doctor (Desoille, 1929).

Osty, for his part, in a long and specific paper divided into three parts, tried to deepen the specific problem of the diagnosis of diseases in subjects supposedly gifted in paranormal knowledge, an argument often marked by positive and meaningful outcomes, and to define the extent, the mechanisms, and the favorable and unfavorable conditions for such behavior. All the people tested by Osty had a mediocre or middle general education and had no medical knowledge. Osty observed that those subjects were different in their variable output over time due to "intra-organic" and external causes, but similar in their more or less evident

attitude that they could detect others' pathological conditions. The diagnosis given by them could be sudden, spontaneous, and unsolicited (in séances carried out for other aims, for example, a paranormal and general knowledge of others' lives, or outside the circle of the séances), or solicited directly in appropriate séances. The diagnosis, with an essential premise that the involved subject had to know nothing about the ill person and the disease, could regard people both present and far away, and, in this second condition of distance, could use an object (generally a handwritten paper) of the ill person. The perceiver touched the object or sometimes only observed it. The experimenter, for his part, could know the ill person and his disease, or be ignorant of that disease or ignorant of both the person and the disease. The quality and the quantity of the diagnosis were variable, and the output of the subject was rather better if the "target" person was in his presence and if such a diagnosis was spontaneous. Moreover, the diagnosis could be made not only about actual diseases, with a relative prognosis, but also about past diseases (retrospective diagnosis), as well as future diseases (premonitory diagnosis) (Osty, 1929:503–507).

Osty looked carefully at the problem of mistakes, which appear in various degrees in the subjects he tested who were reputed to have paranormal abilities. They were not educated in medicine, meaning that the paranormal diagnosis did not translate technically into anatomical, physiological, and pathological realities, but aimed generally to characterize the conditions of the disease through the indication of the symptoms. Such lines often were insufficiently precise to indicate the pathological condition if it was not already known by a medical source or if it could not be specified afterward by appropriate clinical tests. The paranormal diagnosis, therefore, would represent in the best cases only approximations of a different quality, marked by possibly correct indications but also including fragmentariness and omissions, according to the personal ability of the involved subject and the weight of favorable conditions. For example, some mistakes could derive from the fact that the "relationship," the "link" between ill person and the subject, was not established, and sometimes by the psychic subject not being able to say simply "I do not feel anything," or because the subject as a consequence of habit might be immediately dragged by an uncontrolled "ideogenesis" leading invariably to fictitious productions. Or, on the basis of the belief that the subject was gifted with paranormal knowledge and a remarkable "detector" of others' thinking, it is possible that the ill person or the experimenter could become psychically susceptible and send out paranormally some incorrect information based on their false beliefs, fears, or hopes about the action of the disease (Osty, 1930:97–114).

In conclusion, Osty thinks that the use of subjects gifted in the field of the diagnosis of diseases is undoubtedly interesting as a metapsychic topic, but only for research into their extraordinary abilities of paranormal knowledge. In usual medical work it is not really important, except when a doctor might be inspired

by some of the indications to afterward follow through and try to verify them through medical testing. A useful approach, according to Osty, could be to educate a good and believable subject, showing an inclination for the detection of disease, in anatomy, physiology, pathology, and therapeutics, thereby improving his/her paranormal abilities (Osty, 1930:140).

In addition to Miss Laplace, Osty availed himself of the contributions of numerous subjects in the field of paranormal diagnosis: Miss de Berly, Mr. de Fleurière, Pascal Forthuny, Mrs. Peyroutet, and many others (Osty, 1929, 1930).

In the part of his paper dedicated to the diagnosis and prognosis regarding acting diseases, Osty quotes two occasions involving Miss Laplace (cases VII and IX).

On February 16, 1927, during a public séance at IMI, she was asked to exercise her ability about a lady present for the first time. She was given by Miss Laplace true information about her husband's professional job, also premonitory, then Miss Laplace told her that she had weak ankles and was subject to feet twists. The lady in question confirmed then to Osty the typical weakness of her ankles and the frequent twists of her feet. Before that, on November 6, 1926, Mr. H. T., 25 years old, was put by Osty into the presence of Miss Laplace for a paranormal reading about general knowledge of his life and personality. Miss Laplace mentioned with regard to the man's health, that she felt malaise in one of her arms, certainly unpleasant but momentary. Two days before, Mr. H. T. had received an injection of anti-typhic vaccine to a shoulder and, consequently, on the day of the séance his corresponding arm was painful (Osty, 1929:512–513).

In the second part of his paper and regarding Miss Laplace, there are more numerous quotations about diagnoses related to the category of past diseases (cases XXXV, XXXVIII, XL, XLI, XLV, XLVI, XLVII, XLVIII, XLIX, LIV). In addition to the basic distinction between spontaneous and solicited diagnosis, characterized by a time factor (when the diagnosis of past disease is done, such diseases do not exist anymore, and sometimes the ill person is dead at the time of the diagnosis), Osty also stated the distinction between retrospective diagnosis concerning persons put in the presence of the subject, retrospective diagnosis concerning persons not present, and retrospective diagnosis concerning dead persons (Osty, 1930:5–6).

Concerning these last three different typologies of diagnosis, we present, for each one, an example involving Miss Laplace.

Case XXXV regards Mr. D., unknown to Miss Laplace, who, in the séance of February 23, 1927, at IMI, proposed himself for a proof of clairvoyance. Among the many indications verified as exact, Miss Laplace said that when a child he was characterized by weak health and that a hand was hurt, by a cut or a puncture. She did not feel any danger for him from this accident, nevertheless he had to pay attention to insolation. This was important during his life, as a dangerous

congestion could appear in his head. On the whole, the sitter had, nevertheless, good health but his left kidney had some trouble. Regarding the indications given by Miss Laplace, the person had at once confirmed that his health had been delicate in childhood, adding that in that moment he was suffering from problems in the kidneys. As far as the wound on his hand was concerned, he had made a hole in it with a chisel and for this reason he had had trouble with it for a long time. Regarding the insolation, he had been hit so strongly that for eight days he had been in a near-delirious condition (Osty, 1930:10).

Case XL, at the IMI, concerns a Miss D., unknown to the subject, who in the public séance of February 2, 1927, was put before Miss Laplace for her to obtain paranormal information. Among the many and precise indications she gave about Miss D., Miss Laplace also spoke about the health condition of the consultant's mother, who was not present. She said that she was still living and represented, more than a mother, a sister to Miss D. The mother had not had good health in her life, but many pains. Due to a disease or to a surgery, she had bad health. Previously, for a certain period, she was calm and reasonable, but now she was no more so, due to the disease and to a surgery that had changed her life. She was easily upset, despairing and crying about anything. In effect, the lady's mother had suffered, when she was about 30, an inflammation of the uterus and ovaries and for this reason these organs were removed. Due to this, a transformation in temper made the lady unquiet and irritable, subject to frequent crises of light anxious melancholia (Osty, 1930:12).

Case XLVIII, at IMI, concerns a public séance of March 16, 1927, when Dr. H. D. brought a lady who was introduced to Miss Laplace as a possible object of paranormal knowledge. Miss Laplace gave different indications about her life. In particular, Miss Laplace had the vision of a portrait inside a medallion which she felt concerned the distant death of a man with a "musical" and swinging voice. Such a man had died under dramatic conditions due to head congestion, but he could have been saved. More, Miss Laplace saw "H", "a", "u", "t", "e" letters, that is Haute, perhaps Hautes-Pyrénées or something similar, as well as the letter "G". Afterward, the lady said that her husband, whose name began with "G", had died some years before in Haute-Saône of a head infection. He was a doctor himself and had said that his disease had been treated badly. His voice was musical indeed (Osty, 1930:17).

Conclusions

Miss Laplace, at IMI in Paris in the years 1927–1934, showed herself to be a very gifted subject, always available in every single experimental occasion for the aims of the research, able to constantly give a certainly meaningful quantity of heterogeneous information of paranormal origin and also to give precious observations and personal remarks about her own extraordinary abilities and

the dynamics of their course. Therefore she was a useful source for a deepening and a cognitive widening of the different conditions, both interior and exterior, in which those abilities had manifested. Though she had participated previously for seven years in a spirit circle, adapting herself to its rites and beliefs and attributing the produced "communications" to the deceased spirits, during her activity at IMI Miss Laplace never attributed her abilities and manifestations of paranormal knowledge to disembodied spirits, "spirit guides," or similar entities.

The séances done with Harry Price, in the context of IMI, testify further in favor of the reliability of her clairvoyant abilities.

Nevertheless, some critical points remain involving the quality of the proof obtained in such experiments, mainly the method of judgment used, which was to interrogate subsequently the "target" person to validate little by little every statement given by Miss Laplace, without carrying out any other investigation. The answers of the "target" person may not be objective for many reasons and often are not reliable owing to psychological and social inhibition.

Some séances could have been carried out with a public not carefully selected, with the possibility that not all people present at the tests were completely unknown until that moment to Miss Laplace. Also, the high number of individuals present may provide for a situation in which a sudden indication (and rather approximate) indication from the psychic subject could easily fit one individual in so large a group.

The psychic subject, in addition, on the basis of long practice and experience, memory, and a good capacity for observation, is able to extract precious information from certain nonverbal clues. This is the so-called "cold reading"—understanding of personality traits and socioeconomic level, through the observation of elements such as the general and physical physiognomy, the face, the hands, the posture, etc., as well as clothes, jewelry, etc., and then observing verification from the individual through the catching of reactions such as movements of the eyes and the dilation of pupils.

It must be considered in any case the many occasions on which the "impressions" given by Miss Laplace have been anything but generic, as well as those in which the individual "targets" were not present and some details of their life were completely unknown to the individual present. Also in these cases the problem of the rigorous validation of the "impressions" given by the subject remain. Osty was given by Dr. Eugène Lenglet (a medical doctor, future president of IMI from 1940 to 1946) in a public séance on December 20, 1933, before the execution of the experiences, some envelopes containing hairs and a card-case in black leather. In the pocket and in a closed envelope he had the diagnosis, already written, of the diseases of the people directly linked to the objects. Then Dr. Lenglet retired to a reading room of IMI and Miss Laplace was brought into the

room for the séances. Afterward she gave the "impressions" concerning the card-case and a wisp of hair extracted from one of the envelopes. Then Dr. Lenglet came into the room of the séances, with the envelopes containing the above-mentioned diagnosis written in advance, for the evaluation of the two tests, which were judged substantially positive for the accuracy of some indications. This séance, though not perfect in its experimental conditions, appears more rigorous than others and may be considered a double-blind experiment (Osty, 1934:90–92).

Under strict controls and with the necessary precautions (we remember that Osty was a doctor and the assistants at the séances at the IMI were mostly medical doctors), Miss Laplace was studied with every possible care by Osty, including in the delicate and always extremely disputed field of the paranormal diagnosis of the diseases, and after that by Henri Desoille, who was previously interested and had thought there might be a possible practical use of those abilities he had observed in Miss Laplace.

Miss Laplace's diagnoses, however, could be marked by synthesis, mistakes of different degree, omissions, and approximations, and so on; nevertheless, mistakes were often included in the whole context of other general indications about the personality and the life of the consultant which were sufficiently exact, and therefore the diagnosis acquired a further general validity. Furthermore, Miss Laplace always limited herself to simple advice to the interested person and invited them to consult in short order an appropriate specialist for the medical treatment of the case, without pretending at all to substitute herself for their diagnosis and in no way to practice medicine herself.

Osty reputed that the possible use of such gifted subjects for the diagnosis of diseases was doubtless interesting for metapsychic research, but only for the particular aim of a deeper and detailed study of those with the extraordinary abilities of gaining paranormal knowledge. And Osty showed himself in essential agreement with Desoille about the fact that, in usual and daily medical practice, the paranormal diagnosis of the diseases did not show any concrete and real importance, except when the doctor with all necessary precautions decided to use some of indications from the psychic subject, while controlling the value of her diagnosis and using the precision and all the complements required of them by medical profession rules, conduct, and ethics.

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RESEARCH

A Baby Sea-Serpent No More: Reinterpreting Hagelund's Juvenile "Cadborosaur" Report

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Abstract—Eyewitness reports and cultural representations have been interpreted by some researchers to suggest the existence of a large, long-bodied marine vertebrate in the northeast Pacific. Dubbed "Caddy" or "Cadborosaurus" (after Cadboro Bay, British Columbia), it was formally named and described as *Cadborosaurus willsi* by Bousfield and LeBlond in 1995. Among the supposedly most informative accounts is the alleged 1968 capture of a juvenile by William Hagelund, detailed in his 1987 book *Whalers No More*. Reportedly morphologically similar to adult "Cadborosaurs," the specimen was comparatively tiny, and apparently precocial. Bousfield and LeBlond argue that this strongly supports their contention that "Caddy" is reptilian (juvenile reptiles are typically precocial, recalling "miniature adults" in both behavior and morphology). Anomalous traits suggest some degree of misrecollection in Hagelund's account, furthermore a quantitative analysis of the similarity of 14 candidate identities with the specimen indicates that it most strongly resembles the bay pipefish (*Syngnathus leptorhynchus*)—far more so than a cryptid or reptile. While this detracts from the plausibility of the cryptid, the re-identification of this particular specimen does not discount the data as a whole nor does it suggest that all "Caddy" reports are necessarily of known fish. We contend that the "reptilian hypothesis" does, however, need to be seriously re-examined in light of the removal of a strong piece of evidence.

Keywords: bay pipefish—*Syngnathus leptorhynchus*—sturgeon poacher—*Podothecus accipenserinus*—Cryptozoology—*Cadborosaurus willsi*—reptile—William Hagelund

Introduction

It is not accurate to presuppose that technically qualified scientists are uninterested in examining cryptozoological evidence. Several workers have assessed such data and reported their findings in the peer-reviewed technical literature (e.g., Scott and Rines, 1975, Raynal & Sylvestre, 1991, Paxton et al., 2005, Paxton & Holland, 2005, Paxton, 2009). Critical discussions of large undescribed species are not necessarily outlandish, as numerous marine vertebrate megafaunal species (>45 kg) have been discovered and described in recent years (e.g., Megamouth shark *Megachasma pelagios* Taylor et al., 1983, Bandolero beaked whale *Mesoplodon peruvianus* Reyes et al., 1991, West African skate *Bathyraja hesperafricana* Stehmann, 1995, Indonesian coelacanth *Latimeria menadoensis* Pouyaud et al., 1999), and statistical work suggests that several such species remain to be documented (Paxton, 1998, 2001, Raynal, 2001, Solow & Smith, 2005, Woodley et al., 2008). Large marine vertebrates can be surprisingly cryptic due to rarity, habitat, and/or avoidance of vessels (Heyning, 1989); *Megachasma pelagios* was not recorded from the Atlantic until 1995 (Amorim et al., 2000); the family Ziphiidae ("beaked whales") includes numerous poorly known species, including *Mesoplodon traversii*, which is known from three partial skulls and has no live records (Van Helden et al., 2002).

Between the early 1990s and the present (see also LeBlond & Sibert, 1973), Edward L. Bousfield and Paul H. LeBlond have collected and analyzed aquatic cryptid reports from the northeast Pacific Ocean (Bousfield & LeBlond, 1992, 1995, LeBlond & Bousfield, 1995, LeBlond, 2001). These authors have speculated on the existence of a large, long-bodied marine vertebrate species in the northeast Pacific Ocean based on their interpretations of eyewitness reports and local cultural representations. Purportedly, the anecdotal evidence generally describes an animal with a length of 5–15 meters, a serpentine body, undulatory locomotion, sheep/horse/giraffe/camel-like head, a neck 1–4 meters in length, anterior flippers, posterior flippers either absent or fused with the body, top of the tail "toothed" or spiny, and a tail which is horizontally split or fluke-like; less frequently reported characteristics include whiskers, large eyes, "colored" eyes, ears, and/or horns; the color is variously described as orange, green, brown, grey, black, and "gun metal" blue; the skin has been described as smooth, although sometimes fur/fuzz/hair on the neck or body is reported; the back has been variably described as serrated and smooth (LeBlond & Bousfield, 1995). This cryptid was informally dubbed "Cadborosaurus" (after Cadboro Bay, British Columbia) by journalist Archie H. Wills in 1933 and was formally, albeit controversially, described as *Cadborosaurus willsi* by Bousfield and LeBlond in 1995.

A number of speculative inferences and suggestions led Bousfield and

LeBlond (1995) to promote a hypothesis of the putative taxon's phylogenetic affinities. The long, slender body reported for *C. willsi* was argued by Bousfield and LeBlond (1995) to be most compatible with a poikilothermic physiology, and hence with a reptilian identity (Bousfield & LeBlond, 1995:9). It was also suggested that the existence of small, precocial "*Cadborosaurus*" juveniles evidenced reptilian identity since the juveniles of mammals generally undergo an extended period of parental care in which they are incapable of surviving by themselves. By comparing the inferred morphology of an enigmatic carcass from Naden Harbour, British Columbia, with that of various extinct and extant vertebrates, they concluded that the closest similarities were with the extinct reptiles of the clade Sauropterygia, and specifically with plesiosaurs. Sauropterygians are otherwise known only from the Mesozoic, and there is no evidence from the fossil record that they survived beyond the end of the Late Cretaceous (Lucas & Reynolds, 1993). Bousfield and LeBlond's hypothesis has been criticized on the grounds that eyewitness evidence used to support the reality of *C. willsi* is more compatible with a mammalian identity than a reptilian one, as the putative animal inhabits cold water, exhibits maximum flexibility in its vertical plane, and is sometimes described as possessing hair (Saggese, 2006, Woodley, 2008, Woodley et al., 2008). Now, further analysis has demonstrated that one of the best-described juvenile "cadborosaurs" cannot be considered reptilian and most likely represents a known, albeit unfamiliar, species of fish.

Captain William Hagelund's Account

In August 1968 while at Pirate's Cove, De Courcy Island, British Columbia, former whaler Captain William Hagelund gave the following description of an animal he could not identify; the account is taken from Hagelund (1987:177–180):

> With my two sons and their grandfather aboard our centre cockpit sloop, we spotted a small surface disturbance in the calm anchorage where we had dropped the hook for the night. Lowering the dinghy, my youngest son Gerry and I rowed out to investigate. We found a small, eel-like, sea creature swimming along with its head held completely out of the water, the undulation of its long, slender body causing portions of its spine to break the surface. My first thought that it was a sea snake was quickly discarded when, on drawing closer, I noticed the dark limpid eyes, large in proportion to the slender head, which had given it a seal-like appearance when viewed from the front. When it turned away, a long, slightly hooked snout could be discerned.
>
> As the evening's darkness made observation difficult, and the swiftness of the creature's progress warned that he could quickly disappear, I decided to attempt a capture and bring it aboard the sloop for closer examination. Reaching out with a small dip net as Gerry swung the stern of our dinghy into the path of

> the small vee of wavelets that were the only indication of the creature's position, I was pleased to find him twisting angrily in the net when I lifted it up.
>
> Under the bright lights aboard the sloop, we examined our catch and found he was approximately sixteen inches long, and just over an inch in diameter. His lower jaw had a set of sharp tiny teeth and his back was protected by plate-like scales, while his undersides were covered in a soft yellow fuzz. A pair of small, flipper-like feet protruded from his shoulder area, and a spade-shaped tail proved to be two tiny flipper-like fins that overlapped each other.
>
> I felt the biological people at Departure Bay would be interested in this find, but without a radiophone to contact them, the next best thing was to sail up there in the morning. Agreeing on this, we filled a large plastic bucket with seawater and dumped our creature into it. We retired early, for I intended to leave at first light, but sleep would not come to me. Instead, I lay awake, acutely aware of the little creature trapped in our bucket. In the stillness of the anchorage I could hear the splashes made by his tail, and the scratching of his little teeth and flippers as he attempted to grasp the smooth surface of the bucket. Such exertion, I began to realize, could cause him to perish before morning.
>
> My uneasiness grew until I finally climbed back on deck and shone my flashlight down into the bucket. He stopped swimming immediately, and faced the light as though it were an enemy, his mouth opened slightly, the lips drawn back exposing his teeth, and the tufts of whiskers standing stiffly out from each side of his snout, while his large eyes reflected the glare of my flashlight. I felt a strong compassion for that little face staring up at me, so bravely awaiting its fate.
>
> Just as strongly came the feeling that, if he was as rare a creature as my limited knowledge led me to believe, then the miracle of his being in Pirate's Cove at all should not be undone by my impulsive capture. He should be allowed to go free, to survive, if possible, and to fulfill his purpose. If he were successful, we could possibly see more of his kind, not less.
>
> If he perished in my hands, he would only be a forgotten curiosity. I lowered the bucket over the side and watched him swim quickly away into the darkness, then returning to my bunk for a peaceful rest, my mind untroubled by the encounter.

Hagelund included an illustration of his creature (reproduced in Figure 1) with the following notes: hooked upper jaw, 3 inches (brackets include head), large eyes, plate scales, black on top and brown on sides, ragged ends (arrow pointing to tail), yellow tail, approximately 1 to 1½ inches in diameter, yellow fuzz (pointing to belly), tiny teeth on both jaws, 16 inches (brackets including head, body, and tail).

Analysis

Hagelund's account includes 24 reported traits: an eel-like appearance (= sea snake–like; long, slender body), head held out of the water while swimming, undulatory movement, dark eyes, limpid eyes, large eyes, seal-like face,

slender head, slightly hooked snout, long snout, length of 16 inches (40 cm), diameter of 1 to 1.5 inches (2.5–3.8 cm), tiny teeth in both jaws, plate-like scales on the back, undersides with a soft yellow fuzz, flipper-like feet near the shoulder, spade-shaped tail, tail composed of two overlapping flipper-like fins, lips, whiskers, coloration of black on top and brown on the sides, yellow tail, and a head length of 3 inches (7.6 cm). It is likely the ragged ends of the tail mentioned in the illustration's text represent damage rather than an actual trait, which raises the possibility that "overlapping flipper-like fins" are also the result of damage.

Our objective was to use these and other traits in comparing Hagelund's specimen with other plausible candidate species. In order for some of the traits to be usable in comparison with known animals and proposed cryptids, some needed to be more strictly defined or modified. Body diameter and head length were not used directly, but were rather modified into proportions relative to the total length (i.e. including the tail appendage), giving a depth:TL of 1:16 to 1:10.7, and a head:TL of 1:5.33. "Eel-like" was taken to mean an elongate and cylindrical body, and is not necessarily redundant in conjunction with the aforementioned proportions, as eel-like animals may not be proportionally similar and animals with similar head:TL proportions may not be eel-like. For the given traits of "eel-like," "large eyes," "slightly hooked snout," "long snout," and "slender head," the illustrated morphology was used to determine the threshold of these traits, e.g., if the eyes are at least the same size in proportion they were considered "large." While the account suggests that only the back had plate-like scales, the illustration shows them covering most of the animal's side; due to this apparent contradiction, the trait was simplified to the presence of plate-like scales. Since several of the candidates lack teeth entirely, it was decided that the simple presence or absence of teeth would be a more worthwhile trait rather than attempting to determine the threshold for "tiny" teeth; specifying teeth in both jaws is unnecessary in this analysis as none of the candidates, and few animals in general, have teeth in only one jaw. The trait of "undulatory" movement unfortunately does not specify a plane, so was interpreted as eel- or snake-like locomotion occurring either horizontally or laterally. It is not clear if "slender head" refers to head depth or width, so the illustrated depth was used as a guide but given low weight (see below).

For comparisons with fish candidates, the traits of dorsal fin(s), pelvic fins, and anal fin were added to determine which candidates are the closest fit. The description of "flipper-like feet" near the shoulder is confusing since Hagelund's illustration appears to show fin rays typical for actinopterygian fish; accordingly, this trait is regarded as synonymous with pectoral appendages of any type.

Hagelund's illustration does not clarify how dark the eyes are, so this

trait was assumed to indicate that the eyes were somewhat darker than the surrounding body. It is hard to objectively define how eyes could be described as "limpid," although this trait was retained since it still has comparative value with one aberrant report.

Due to the uncertainty of eyewitness observations, multiple character states were used in our analysis. While a certain trait may be present (e.g., poacher pelvic fins), there may be a plausible reason why it could be overlooked (e.g., the fin could be folded and/or is small and transparent enough to be easily overlooked). Additionally, a trait may not be present (e.g., tail composed of two separate flippers in cutlassfishes) but could be explained by the misinterpretation of another trait (e.g., a strongly forked tail). This does not mean that overlooking or inventing a trait is impossible; it is merely less likely than the suggestion that these may be flawed descriptions of real character states.

It is apparent that not every trait should carry the same comparative weight due to both occasional nebulous descriptions and the potential for eyewitness confusion: We therefore argue that traits should be sorted into different categories based on their importance. Traits regarded as having high importance are clearly described and difficult to misinterpret: They involved such obvious morphological traits as plate-like scales, eel-like appearance, teeth, head held out of the water while swimming, black dorsal coloration, brown lateral coloration, and yellow tail.

In total 29 morphological characters were used. A simple coding system was developed to determine whether a particular trait was present or not. When a trait is unambiguously present, it is coded with P (for present), when a trait is occasionally present due to individual variability, it is coded with an O (for occasionally present). The use of A indicates the absence of a particular trait, whereas a question mark indicates that it is not known whether or not this trait or something that could be mistaken for it is present. As there is an element of subjectivity to the inference of a particular trait, the addition of * next to a trait indicates that the presence of the trait may be open to eyewitness interpretation. Each character was ranked as either similar (s), in that it co-occurs (is either simultaneously present or absent) in both the Hagelund specimen and candidate, somewhat similar (ss), in that it or something that could be mistaken for it could co-occur, or dissimilar (d) indicating no co-occurrence. Co-occurrent (similar) traits were awarded a whole point. An occasionally present (somewhat similar) trait was given half a point in all cases as the trait must be either present or absent at least some of the time in the candidate. Stand-alone question marks (indicating unknown presence or absence) were awarded zero points, and a co-occurrent score followed by * (suggesting uncertainty) incurred a "subjectivity penalty" of a quarter of a point. This gives rise to a simple formula with which the overall similarity with respect to the Hagelund specimen could be ascertained for a given candidate:

Similar scores (1 point) + Somewhat similar scores (0.5 point) − Subjectivity penalty (0.25 point) = Candidate's overall similarity score.

It was decided not to include a separate penalty for dissimilarity, as this would have further complicated the measure. For example, calculating separate dissimilarity scores and then subtracting them from the similarity score resulted in negative scores in the case of some candidate identities. Furthermore, dissimilarity scores were deemed to be less informative in instances where there were large numbers of "unknown" character states which couldn't be honestly described as dissimilar (for example in the case of the Finn John description there were 21 "uncertain" character states vs. 8 character states that were unambiguously present, i.e. were "similar" with respect to the Hagelund specimen and no unambiguously disimilar characters—in this instance similarity scores are simply more informative). Therefore, while not perfect, the similarity measure developed here should serve as an adequate metric allowing for candidate identities to be easily compared.

To determine the possible identification of the Hagelund specimen, the reported characteristics were compared with those of the cryptid *C. willsi* proposed by LeBlond and Bousfield and with those of an unusual "caddy" report from one Finn John reported by Hagelund. Crocodilians and elasmosaurids were also included in the analysis following LeBlond and Bousfield's proposal of reptilian affinities for *C. willsi*. The traits of ear and/or horn presence, long neck (quantified as more than twice the length of head), and presence of a "toothed" or spiny tail were also included in our comparative analysis. A generic pinniped was also included as a candidate owing to Hagelund's description of his specimen possessing a "seal-like face." One of us (McCormick) noted a strong similarity between the Hagelund specimen and pipefish; the hypothesis that the specimen represents a known fish rather than a reptilian cryptid is significant, so a number of fish from the northeast Pacific (all morphologically reminiscent of the specimen) were incorporated as well: bay pipefish (Syngnathidae; *Syngnathus leptorhynchus*), poachers (Agonidae; *Podothecus accipenserinus*, *Pallasina barbata*, *Sarritor frenatus*), tube-snout (Aulorhynchidae; *Aulorhynchus flavidus*), green sturgeon (Acipenseridae; *Acipenser medirostris*), and cutlassfishes (Trichiuridae; *Aphanopus arigato*, *Lepidopus fitchi*). A decapod candidate (*Pandalus platyceros*) was also included due to Staude and Lambert's (1995) suggestion that a representative of this order might have been the culprit behind Hagelund's specimen.

For a listing of the traits ascribed to "caddy" by LeBlond and Bousfield (1995), refer to the Introduction above. A review of the reports utilized by LeBlond and Bousfield (1995) shows that no one individual account possesses the full complement of traits present in the Hagelund description, furthermore

contradictions are frequent (as discussed above), and singular traits such as "fins all over the body," "turtle-like," "cat-like head," "like a huge diver wearing a helmet," et cetera, are not uncommon. Clearly, the establishment of *C. willsi* by LeBlond and Bousfield was subjective, and conclusions drawn from comparisons with the set of traits have to be limited.

Table 1 presents an analysis of the similarity of 14 candidate identities to Hagelund's specimen with respect to 29 different characters. Based on this analysis it is evident that conflating LeBlond and Bousfield's *C. willsi* with the Hagelund specimen is problematic for a number of reasons: most strikingly, the plate-like scales of the latter. While the traits of a serrated crest and toothed/spiny tail are reportedly present in *C. willsi*, the former does not necessarily imply armor (it could be a soft structure or even hair), and the latter appears to have occurred exclusively in the enigmatic Naden Harbour carcass. Also conspicuously absent in the Hagelund specimen is a long neck. While the Hagelund specimen and *C. willsi* share the traits of large eyes and whiskers, the rarity of the traits in "caddy" reports, coupled with their fairly generic nature, suggests they have little diagnostic value. Overall, *C. willsi* exhibited a relatively low similarity to the Hagelund specimen (8.25 points out of a possible 29). The Finn John "caddy" report shares a number of specific traits with Hagelund's encounter such as a spade-shaped tail, large limpid eyes, whiskers, fur, and plates on the back, although its overall similarity was low (8 points out of a possible 29); this unusual report was in fact recalled by Hagelund, and its dissimilarity to other reports aside from traits specific to Hagelund's specimen is no doubt significant (see below).

Interestingly, the Hagelund specimen shares more traits in common with the generalized crocodilians (plate-like scales, sometimes coloration) (scoring 13 points out of 29); however, significantly with respect to LeBlond and Bousfield's thesis, it seems to share no more traits in common with the elasmosaurids than it does with *C. willsi* (8 points out of 29). A generic pinniped was included for comparison owing to Hagelund's reference to his specimen possessing a "seal-like face." There are five seal species native to British Columbia belonging to both the Otariidae family (northern fur seal *Callorhinus ursinus,* Steller sea lion *Eumetopias jubatus,* and California sea-lion *Zalophus californianus*), and the Phocidae family (northern elephant seal *Mirounga angustirostris* and harbor seal *Phoca vitulina*) (Allen, 1974). While the pinnipeds as a whole scored a respectable 14.75 out of 29, no single species possesses all of the traits present in Hagelund's specimen. The fact that Hagelund's specimen was small (33cm) is also grounds to rule out pinnipeds as plausible candidates, as this size falls far below that of any pinniped species. One point of similarity between these candidates and the Hagelund specimen is swimming with the head out of the water, which as air breathers these candidates must do at least some of the time.

TABLE 1

Analysis of the Similarity of 14 Candidate Identities to Hagelund's Specimen with Respect to 29 Different Characters

Traits	Hagelund	*C. willsi*	Finn John	Thalattosuchia *spp.*	Elasmosauridae *spp.*	Pinnipedia spp.	*S. leptorhynchus*	*P. accipenserinus*	*Pa. barbata*	*Sa. Frenatus*	*Au. Flavidus*	*A. arigato*	*L. fitchi*	*Ac. Medirostris*	*Pan. Platyceros*
Teeth	P	?	?	P (s)	P (s)	P (s)	A (d)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A (d)	A (d)
Lips	P	?	?	A (d)	A (d)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A (d)
Head held out of water	P	P (s)	?	P (s)	P (s)	P (s)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)
Ears and/or horns	A	O (ss)	?	A (s)	A (s)	O (ss)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)
Tail dorsally toothed, spiny	A	P (d)	?	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)
Black dorsally, brown laterally	P	A (d)	?	?	?	O (ss)	O (ss)	P (s)	A (d)	P (s)	A (d)	A (d)	A (d)	A (d)	A (d)
Yellow tail	P	A (d)	?	?	?	A (d)	A (d)	P (s)	A (d)	A (d)	A (d)	A (d)	A (d)	O (ss)	A* (d)
Plate-like scales	P	?	P (s)	O (ss)	A (d)	A (d)	P (s)	P (s)	P (s)	P (s)	A* (d)	A (d)	A (d)	P (s)	A* (d)
Eel-like	P	P (s)	P (s)	A (d)	A (d)	A* (d)	P (s)	A* (d)	P (s)	A* (d)	P (s)	P (s)	P (s)	A (d)	A (d)
Long snout	P	P (s)	P (s)	P (s)	A (d)	O (ss)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A* (d)
Large eyes	P	O (ss)	P (s)	O (ss)	O (ss)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A (d)	P (s)
Long neck	A	P (d)	?	A (s)	P (d)	A* (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)	A (s)
Snout slightly hooked	P	A (d)	?	A (d)	A (d)	A (d)	A* (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)	A (d)
40 cm approximate total length	P	A (d)	?	P (s)	?	A (d)	O* (ss)	A* (d)	A (d)	A* (d)	A (d)	P (s)	P (s)	P (s)	A (d)
Diameter:TL ~ 1:16 to 1:10.7	P	A (d)	?	O (ss)	O (ss)	A* (d)	P (s)	P (s)	P (s)	A* (d)	P (s)	P (s)	P (s)	A* (d)	P (s)
Head:TL ~ 1:5.33	P	A (d)	?	O (ss)	A (d)	A (d)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A (d)
Undulatory movement	P	P (s)	?	P (s)	A (d)	O (ss)	P (s)	A* (d)	A* (d)	A* (d)	A (d)	O (ss)	O (ss)	A* (d)	A (d)
Flipper-like feet near shoulder	P	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	P (s)	A (d)
Dorsal fin(s)	A	A (s)	?	A (s)	A (s)	A (s)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P (d)	A (s)
Pelvic fins	A	O* (ss)	?	P (d)	P (d)	P* (d)	A (s)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P (d)	A (s)
Anal fin	A	A (s)	?	A (s)	A (s)	A (s)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P* (d)	P (d)	A (s)
Dark eyes	P	A (d)	?	?	?	P (s)	P (s)	A* (d)	A* (d)	P (s)	P (s)	P (s)	P (s)	P (s)	A (s)
Tail composed of separate flippers	P	A* (d)	?	A (d)	A (d)	P (s)	A (d)	A (d)	A (d)	A (d)	A* (d)	A* (d)	A* (d)	A* (d)	A* (d)
Whiskers	P	O (ss)	P (s)	A (d)	A (d)	P (s)	A (d)	A* (d)	A* (d)	A* (d)	A (d)	A (d)	A (d)	A* (d)	A* (d)
Underbelly w/ soft yellow fuzz	P	A* (d)	?	A (d)	A (d)	A (d)	A* (d)	A* (d)	A* (d)	A* (d)	A (d)	A (d)	A (d)	A (d)	A* (d)
Slender head	P	?	?	?	?	?	P (s)	?	P (s)	?	P (d)	?	?	?	?
Seal-like face	P	?	?	?	?	P (s)	?	?	?	?	?	?	?	?	?
Limpid eyes	P	?	P (s)	?	?	?	?	?	?	?	?	?	?	?	?
Spade-shaped tail	P	?	P (s)	?	?	?	O* (ss)	?	?	?	?	?	?	?	?
Total similar (out of 29)	**29**	**8.25**	**8**	**13**	**8**	**14.75**	**16**	**13**	**13**	**12**	**12**	**13.5**	**13.5**	**10.5**	**9**

* open to eyewitness interpretation; ? unknown presence; O occasionally present due to variability; P present; A absent; s co-occurs as present or absent in the Hagelund specimen; ss somewhat similar in that it or something that could be mistaken for it sometimes co-occurs; d dissimilar indicating no co-occurrence

This trait would seemingly imply that the Hagelund specimen was also an air-breather; however, Hagelund never mentioned breathing. Rather than dismiss the local fish species that superficially resemble the Hagelund specimen on the basis of surface activity, the possibility of aberrant behavior in those fish must be considered: After all, this is in no way less likely than the identification of Hagelund's animal as a cryptid. Another possibility is that Hagelund added "caddy"-like behavior during his recollection of the encounter, although it would still require the animal to be at or near the surface.

The bay pipefish is common to the bays and sloughs of the west coast of Canada, the US, and Mexico, where it lives among common eelgrass, feeding on small invertebrates (Eschmeyer & Herald, 1983). Data suggest that this species does venture into more open water (Hart, 1973), so the location of Hagelund's encounter is not necessarily problematic. The presence of plate-like scales, pectoral fins (= "fore flippers"), large eyes, a long snout, and lips all strongly agree with traits reported from the Hagelund specimen. In Hagelund's illustration (reproduced in Figure 1), the specimen was described as having a black dorsum, brown flanks, and yellow ventral fur; this appears to fall within the known color variation of *S. leptorhynchus* which has been described as varying from green to mottled brown with streaks of black on the dorsal portion, coupled with a yellowish ventrum (Filisky & Peterson, 1998, Girard, 1858). The reported head length of 7.62 cm (3″) for the Hagelund specimen gives a head:TL (TL = total length) proportion of 1:5.3, which is similar to the head:SL (Standard Length = tip of snout to end of caudal peduncle) proportion of 1:6.5 reported for *S. leptorhynchus* (Girard, 1858). Since the individual measured by Girard (1858) was 15 cm in length, it might be possible that positive allometric growth of the pipefish's head would yield an even closer proportion for a large individual.

While *S. leptorhynchus* has not been observed to reach 40 cm in length, the maximum reported length of 33 cm is within a reasonable margin of observer error (Eschmeyer & Herald, 1983). The 2.54 cm (1″) body depth of the Hagelund specimen (body depth:TL = 1:16) seems excessive for a pipefish, but this could be explained by the possibility that the Hagelunds captured a pregnant male, as pregnancy in pipefish causes considerable swelling. The lack of a dorsal fin and anal fin in Hagelund's description could be explained by their being folded down or being overlooked entirely as they are semi-opaque structures composed of only 32 and 3 soft rays, respectively (Girard, 1858). The presence of a bifurcated caudal appendage reportedly composed of two separate and overlapping fins could be due to a misinterpretation of a folded caudal fin or damage to the fin. Hagelund's description of integumentary structures is curious; hair-like appendages used for camouflage are present in some syngnathids such as *Urocampus carinirostris*, however these fish are weak swimmers which lack a dispersive egg and larval phase, implying that the entire

life cycle occurs in localized areas in the western Pacific (Neira et al., 1998, Chenoweth et al., 2002). While the possibility exists that the Hagelund pipefish represents an undescribed, large, "hairy" syngnathid from the northeast Pacific, we contend that the fur-like growth reported on the specimen's underside could be a misinterpretation of the ventral coloration, which has been described as yellowish with a mesh work pattern of brown lines (Girard, 1858). Alternately, a covering of algae could create the impression of a fur-like integument.

The most problematic morphological aspect reported by Hagelund is the presence of "whiskers" and of teeth. Since Hagelund already referred to "fore flippers," it seems very unlikely that he would interpret the pectoral fins again as "whiskers," and it is also unlikely that the coloration pattern would give the impression of a structure protruding from the head of the fish. Pipefish have very small, toothless mouths quite unlike what Hagelund described. Despite these problematic details, the pipefish is still the strongest candidate for the Hagelund specimen, scoring 16 out of a possible 29. Other local fish species, however, also deserve consideration:

Poachers (*Agonidae spp*) are morphologically distinctive scorpaeniforms with rows of bony armor covering their typically elongated bodies; due to a superficially similar appearance to pipefishes, they are also somewhat plausible candidates for the Hagelund specimen. Large eyes, long snouts, small teeth, and lips are typically present in members of the clade, as are barbel-like structures, which could be interpreted as "whiskers." The spines associated with the armor of some species could potentially be confused for hairs. The often-large pectoral fins are the primary means of locomotion except for the c-start escape behavior, which utilizes the caudal fin; this appears to be comparable with the behavior that Hagelund observed in his specimen (Nowroozi et al., 2009). Problematically, however, poachers are benthic and strongly negatively buoyant (Nowroozi et al., 2009), which makes the capture of a specimen near the surface in relatively deep water seem rather improbable. The presence of a prominent spiny first dorsal fin (sometimes absent), a soft-rayed second dorsal fin, a prominent anal fin, and a small, thoracic pelvic fin would have to have gone unnoticed in Hagelund's specimen if an agonid was involved, as such traits go unreported (one possibility is that they were folded). Like pipefish, the caudal fin is rounded and could only be interpreted as bifurcated if it was damaged.

Most of the approximately 50 poacher species occur in the North Pacific, and it is noteworthy that they are not well-known (Jensen, 2005). While at least 17 species are known to occur in the same broad geographical area as Hagelund's sighting, most of these species fall considerably under 40 cm in length and some are even fairly stout-bodied (Froese & Pauly, 2009). The superficially sturgeon-like *Podothecus accipenserinus* can reach 30.5 cm in length, has

very prominent barbels, and has a coloration which can be roughly similar to that of the Hagelund specimen (Hart, 1973); this species obtained a similarity score of 13 out of 29, however, it is not particularly attenuated since the body depth:total length is approximately 1:7.5 instead of 1:16, which was observed in the Hagelund specimen. This difference falls far outside a comfortable margin of error. Other strong candidate species include *Pallasina barbata* and *Sarritor frenatus*; *P. barbata* has a slender head and similar proportions as the Hagelund specimen, but is small (max. 17 cm) with a prominent stripe on its head (Eschmeyer & Herald, 1983), *Sa. frenatus* is somewhat larger (max. 27 cm) and matches the coloration description as well as the head:total length proportion, but not the body depth:total length, and the known range does not include southern British Columbia (although it is close) (Eschmeyer & Herald, 1983). These candidates both obtained similarity scores of 13 and 12 out of 29, respectively. It does not appear that there is any long-snouted poacher, which matches the size, proportions, and reported coloration of the Hagelund specimen (Tokranov & Orlov, 2005, Miller & Lea, 1976, Froese & Pauly, 2009). While Agonidae as a whole may display almost all of the characters reported in the Hagelund specimen, no one species is more probable as a candidate identity than the bay pipefish, and suggesting an unknown species is outside the applicability of the present data.

The tubesnout (*Aulorhynchus flavidus*) is a marine gasterosteoid (stickleback relative) with a long snout, large eyes, and body that is both slender and elongate; notably, the caudal fin is forked (Hart, 1973), and sharp teeth are present in the mouth (Jordan & Gilbert, 1882). 24–27 membrane-free dorsal spines are located anterior to the soft rays (Hart, 1973). The skin is naked with the exception of rugose shields near the lateral line and dorsal fin (Jordan & Gilbert, 1882). It could be possible for the shields and/or spines to suggest more extensive plate-like scales to an eyewitness, but this is not very likely. A soft dorsal fin is located far back on the body and mirrors the anal fin (Hart, 1973). The fish is described as pale mottled brown with an olive-brown or yellow-brown dorsum, white ventrum, and a silver patch bordered by a dark band near the head and gills (Hart, 1973). This candidate species obtained a similarity score of 12 out of 29, however the maximum recorded size is 18.8 cm (Bayer, 1980), and coupled with the distinctive coloration, lack of actual armor, and lack of morphology which can be interpreted as whiskers and fuzz, the tubesnout can be ruled out as a strong candidate for Hagelund's specimen.

Cutlassfishes regularly exceed 40 cm in length, and have big eyes, teeth, subtle pelvic fins, and a forked caudal fin. *Aphanopus arigato* (formerly *A. intermedius*) and *Lepidopus fitchi* occur in the northeast Pacific Ocean and appear to be the strongest candidates for the Hagelund specimen within the group; *A. arigato* is coppery black in color with an iridescent tint, has a body

depth:standard length proportion ranging from 1:12 to 1:16.4 and a head length:standard length proportion ranging from 1:4.9 to 1:5.5; *L. fitchi* has a black or brown coloration with a silver abdomen, a body depth:standard length proportion of 1:9.2 to 1:13.3, and a head length:standard length proportion of 1:4.2 to 1:5.5 (Nakamura & Parin, 1993). It is presumed both species use similar locomotion as *A. carbo*, which involves ostraciiform swimming (i.e. caudal fin only) when stalking prey and anguilliform when in striking distance; it is notable that the dorsal and anal fins are retracted when in the former and the median fins are erected in the latter (Bone, 1971). Both candidate species obtained similarity scores of 13.5 out of 29, however the absence of plate-like scales, structures which may explain "yellow fuzz" (the anal fin occurs only in the far posterior of the body), and strikingly different coloration compared with Hagelund's specimen provides substantative grounds upon which this group can be ruled out as a strong candidate identity.

All sturgeon species (Acipenseridae) can exceed 40 cm in length and have five rows of dorsal, lateral, and ventrolateral scutes, which could complement Hagelund's description of plate-like scales. The Green sturgeon (*Acipenser medirostris*) is present in the northeast Pacific Ocean, has a nearly homocercal tail (i.e. consisting of two equal lobes) which could be regarded as separate "flippers," lips, pectoral fins, barbels (potential "whiskers"), and a similar head:body length proportion as the Hagelund specimen (Girard, 1858). This candidate obtained a similarity score of 10.5 out of 29, however it is not eel-like and it seems unlikely an observer could overlook a dorsal fin, pelvic fins, an anal fin, strongly ventral mouth, and prominent lateral stripes, which effectively rules out this candidate species as a strong contender.

Staude and Lambert (1995) proposed decapods as a candidate for Hagelund's specimen, but did not specify a species. Presumably, the authors suggested this crustacean order due to the possibility of an exoskeleton being interpreted as plate-like scales, antennae as whiskers, pereopods and pleopods (swimming and walking legs) as "fuzz," and uropods as a tail composed of two flippers. The reported presence of lips, teeth, pectoral appendages, and the overall vertebrate-like appearance of the drawing are problematic for any decapod candidate. The Spot prawn (*Pandalus platyceros*) is the largest shrimp in the region, with an eyestalk-telson length that may exceed 20 cm, and coloration that is orange in large individuals with white spots on the first and fifth pleura (Hoffman, 1972). American lobster (*Homarus americanus*) have been introduced to the region (Ray, 2005), and fit the size criterion, but are highly unlikely to be found at the surface and to go unrecognized. While the decapod hypothesis is certainly novel and thought-provoking, the lack of a viable candidate species, coupled with a low similarity score for *P. platyceros* (9 out of 29), means that it can be ruled out as a plausible candidate.

As can be seen through comparison of the illustrations in Figure 1, Hagelund's drawing bears more than a superficial resemblance to the bay pipefish. Despite the problematic description of whiskers and teeth, given how well the majority of the details reported by Hagelund seem to complement our proposed *S. leptorhynchus* identification, is it therefore possible that Hagelund simply misremembered the details of the specimen in his 1987 description? One piece of evidence supportive of this is the 18-year gap between Hagelund making his observations and recounting them in his book. Memories are hardly infallible and are subject to distortion with the passage of time (Wiseman & Lamont, 1996, Wright & Loftus, 2008). Hagelund claimed that the description of *C. willsi* he heard from Finn John had slipped his mind at Pirate Cove but perhaps there was a subconscious influence upon recollection; Finn John's account shares traits with Hagelund's account that are reported in no other "Caddy" reports (ventral fur, dorsal overlapping plates) and shares several details with little variation (horse-like head, large eyes, whiskers, slender body, flippers, spade-shaped tail). Perhaps as Hagelund became increasingly convinced that what he and his family had caught was a baby sea-serpent, his memory of the specimen correspondingly adapted by taking on the "appropriate" characteristics.

The bay pipefish shares more characteristics in common with Hagelund's specimen than any other candidate species. Although certain observed traits are congruent with similar traits reported in *C. willsi*, Hagelund's "sea-serpent" differs markedly from typical accounts of *C. willsi* and is comparatively far less similar. Based on this analysis it is therefore suggested that the theory that Hagelund (1987) describes a pipefish, most probably *S. leptorhynchus*, is the most probable explanation.

Conclusion

Both cryptozoologists and those skeptical of the field have reinterpreted reports of sea-serpents and lake-monsters as reports of either known animals perhaps engaged in unusual behaviors or as inanimate objects viewed under unusual conditions. Naish (1997) argued that photographs of an alleged *C. willsi* "carcass" taken on the beach at Camp Fircom, British Columbia, in the 1930s, do not represent an animal carcass but are in fact composed of a montage of beach debris. Similarly Naish (2001) and Radford (2003) have both independently suggested that the "lake monster" photographed by Sandra Mansi in 1977 at Lake Champlain might have been a tree stump propelled to the surface by gas generated through bacterial decay. Paxton et al. (2005) suggested that Egede's alleged account of a "most dreadful monster" witnessed off the coast of Greenland in 1734, which was interpreted by Heuvelmans (1968) as a sighting of a "super-otter" (a hypothetical primitive mega-archaeocete), may

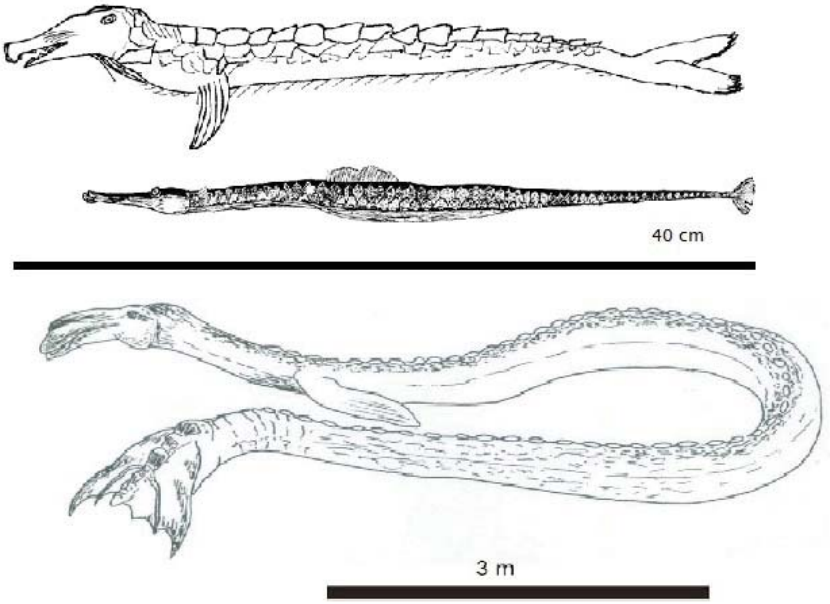

Figure 1. A reproduction of Hagelund's drawing of his "baby sea-serpent" (top) along with an illustration of the bay pipefish *S. leptorhynchus* (middle), and *C. willsi* (bottom) along with scales (40 cm and 3m, respectively).
Note that the maximum girth:total length ratio in Hagelund's illustration is approximately 1:11 while the description gives a significantly more attenuated ratio of 1:16. Pipefish and Hagelund specimen by Cameron A. McCormick, *C. willsi* by Darren Naish.

actually have been of a whale in a state of arousal, owing to morphological similarities between the description of the terminal end of the monster and whale penises (Paxton et al., 2005). Many additional examples represent probable misidentification of this kind; even Heuvelmans (1968) ruled out 52 reports in *In the Wake of the Sea-Serpents* on the grounds that they were likely misidentifications of known species or other more mundane objects.

At this stage it is necessary to make two points. Firstly, in suggesting that Hagelund's 1968 baby sea-serpent was in all likelihood a bay pipefish, we are in no way implying that he deliberately falsified the details of his encounter, although we have reason to suspect that certain details may have been misremembered subsequently. Similarly, there is no reason to believe that Hagelund (or his family) should have been familiar with pipefish as they are

far less well-known than their close relatives the sea horses; even experienced whalers like Hagelund would never normally encounter pipefish in their line of work. It is therefore easy to imagine how a bizarre-looking, long, serpentine, armour-plated sea creature might excite the imaginations of those encountering it for the first time.

Additionally, in suggesting a bay pipefish identity for Hagelund's animal, we are not suggesting that all "Caddy" reports are simply cases of mistaken identity. Since the Hagelund specimen, by far the smallest reported "Caddy," was already at the extreme of bay pipefish size variation, it is highly improbable that pipefish misidentification resulted in any other reports of the cryptid. The possibility that cutlassfishes and sturgeons may have been responsible for some "Caddy" sightings cannot be ruled out, however.

It is our contention that Hagelund's encounter should not be used in support of the existence of "Caddy," let alone form the basis of entirely speculative theories concerning its putative reproductive and life-history characteristics. Although the elimination of this encounter lessens the overall likelihood for the existence of "Caddy," rooting out the probable misidentifications advances enquiry, as researchers can focus their efforts on the more robust and ultimately intriguing data.

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RESEARCH

Avian Formation on a South-Facing Slope along the Northwest Rim of the Argyre Basin

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Abstract—This is a description of an avian-shaped feature that rests below a network of cellular structures found on a mound within the Argyre Basin of Mars in Mars Global Surveyor image M14-02185, acquired on April 30, 2000, and released to the public on April 4, 2001. The area examined is located near 48.0° South, 55.1° West. The formation is approximately 2,400 meters long from the tip of its beak to the tip of its farthest tail feather. There is a minimum of six different variations in appearance of the surface material over this small area. Utilizing the public targeting request form provided on the Mars Global Surveyor (MGS) website, co-author Miller secured a second image of the area that was obtained on July 3, 2006, showing this feature under different conditions S20-00165. The new image was then released to the public on August 11, 2006. A third image of the formation identified as MGS S13-01480 was acquired on December 15, 2005, and although officially processed on June 20, 2006, it was not made available to the public until August 22, 2009, on NASA's Planetary Data System (PDS) website. All three of the MGS images reveal defining aspects of this avian feature, including a head, beak, body, eye, leg, foot, toes, wing, and feathers. When taken together, these components induce the visual impression of an avian-shaped formation that exhibits a unique set of proportional features. Adjoining this formation is a composite of complex cellular features that form a compartmentalized infrastructure. The three authors who are veterinarians provide a critical analysis of the avian features, and the geologist and geoscientist authors examine natural mechanisms that could contribute to the formation of this feature. An extensive search of comparable regions within and beyond the area of the Argyre Basin was conducted. A list of these sites is provided, and terrestrial comparisons are also offered.

Introduction

On March 7, 2002, independent researcher Wilmer Faust presented an odd hillock formation captured in MGS (Mars Global Surveyor) image M1402185 (MOC narrow-angle image M14-02185, 2001) to the first four authors of this paper (Figure 1). The rectangular areas along the upper edge of the hillock on a south-facing slope along the Northwest rim of the huge Argyre Basin interested him most. Faust noted compartmentalized structural features throughout the area's topography as well as a formation of entirely different geometry, suggestive of a gigantic profile of a bird. The avian-shaped formation has recognizable features in the appropriate size, shape, and anatomical orientation that include a head, beak, and body. Additional anatomical components include an eye, leg, foot, toes, wing, and feathers.

The original image and two subsequent images showing the feature for this study were obtained via the Malin Space Science Systems (MSSS) website and NASA's Planetary Data System (PDS) website. All images are presented as they were provided through those sites to the general public with only minor contrast adjustments. The first image M14-02185 became available to the public on April 4, 2001, and the second image, via the public targeting program, S20-00165, was released on August 11, 2006 (S20-00165, 2006) (Figure 2), and the third official release S13-01480 was on August 22, 2009 (S13-01480, 2009) (Figure 3) (Kuehnel, September 3, 2009). There are considerable differences in the telemetry, sun angle, resolution, and other factors of the three images; a comparison chart is presented as Table 1. The basic physical features persist throughout the three images, and some features that were obscured in the first two images are now visible in the third image.

The first MGS image of the formation M14-02185 was taken during the summer in mid-afternoon (4:33 PM) from a point almost directly overhead with a resolution of 3.41 meters per pixel. Image S20-00165 was taken in the winter season, very early in the morning (3:13 AM), from an emission or camera angle of 17.91 degrees off nadir with a resolution of 4.39 meters per pixel. The third MGS image S13-011480 is the clearest and most complete of all three images. It has the highest resolution, photographing the formation at 1.43 meters per pixel.

The Geological Context for the Avian Feature

The Argyre Basin is a large-impact crater located in the southern hemisphere of Mars between 35° and 61° South and 27° and 62° West. The impact basin is approximately 1,100 kilometers in diameter and is believed to have been created in the earliest period of Mars' geologic history about 4 billion years ago (Kiefer, Treiman, & Clifford, 2011). A rapid melting of the south polar ice cap is

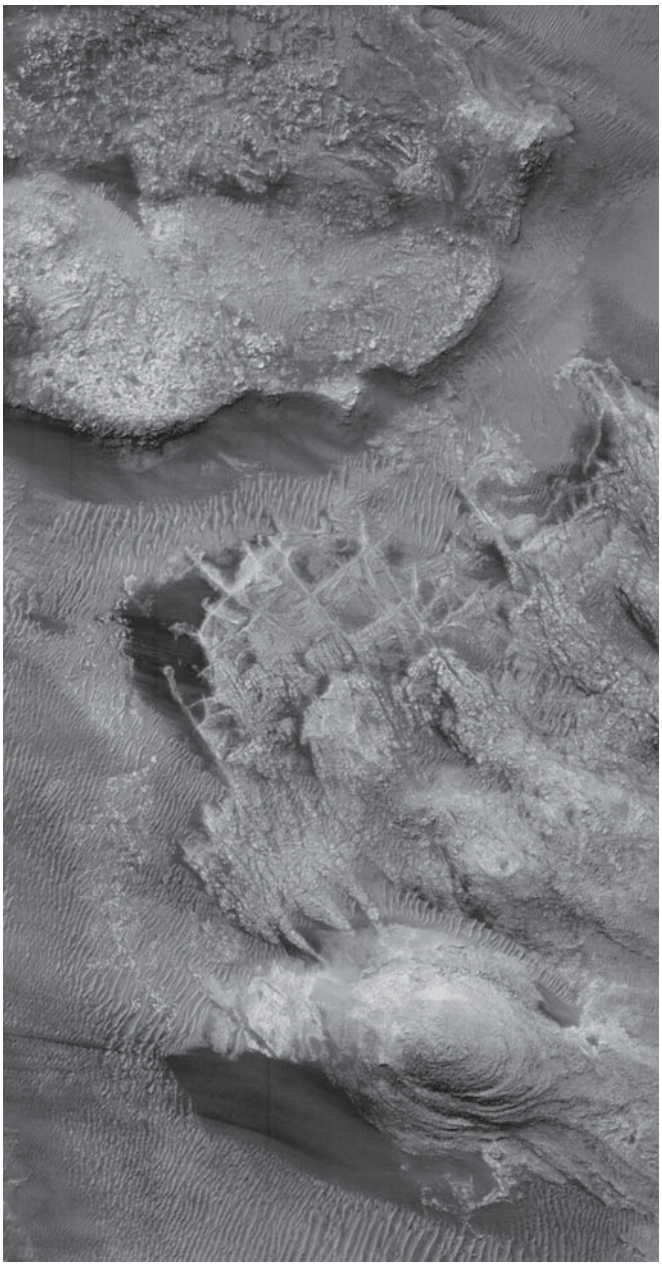

Figure 1. A portion of Mars Global Surveyor image M14-02185 (2001).
Courtesy NASA/JPL/Malin Space Science Systems.
Contrast enhancement by Keith Laney.

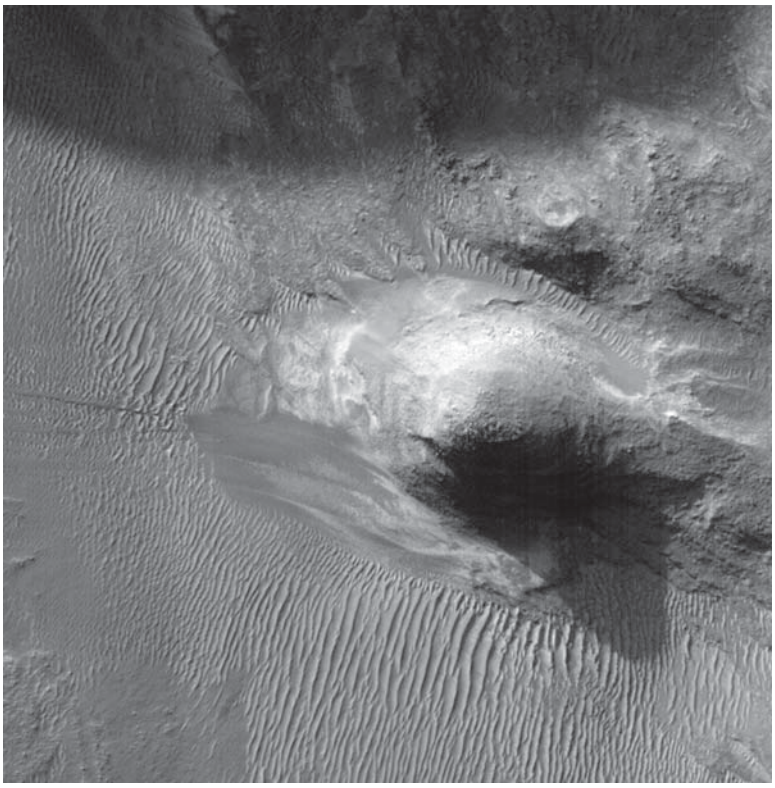

Figure 2. A portion of Mars Global Surveyor image S20-00165 (2006).
Courtesy NASA/JPL/Malin Space Science Systems.
Contrast enhancement by George J. Haas.

believed to be responsible for the basin being water-filled during the Noachian period (Hiesinger & Head, 2002:969).

As described in the Introduction, the main feature originally noted by Faust in MGS image M14-02185 was a network of cellular structures (Figure 4, item B) located directly below the contoured ridgeline of the adjacent landform (Figure 4, item A) and just above the avian feature (Figure 4, item C).

A closeup view of this network of compartmentalized infrastructure (Figure 4, item B) is provided in Figure 5. The deformation of these ridgelines and compartments resemble joints or dikes filled with deposits of fine windblown materials. The area around the upper half of the cells appears to have been formed by water-filled channels (Hartmann, 2003).

According to a scientist from the American Astronomical Society, William

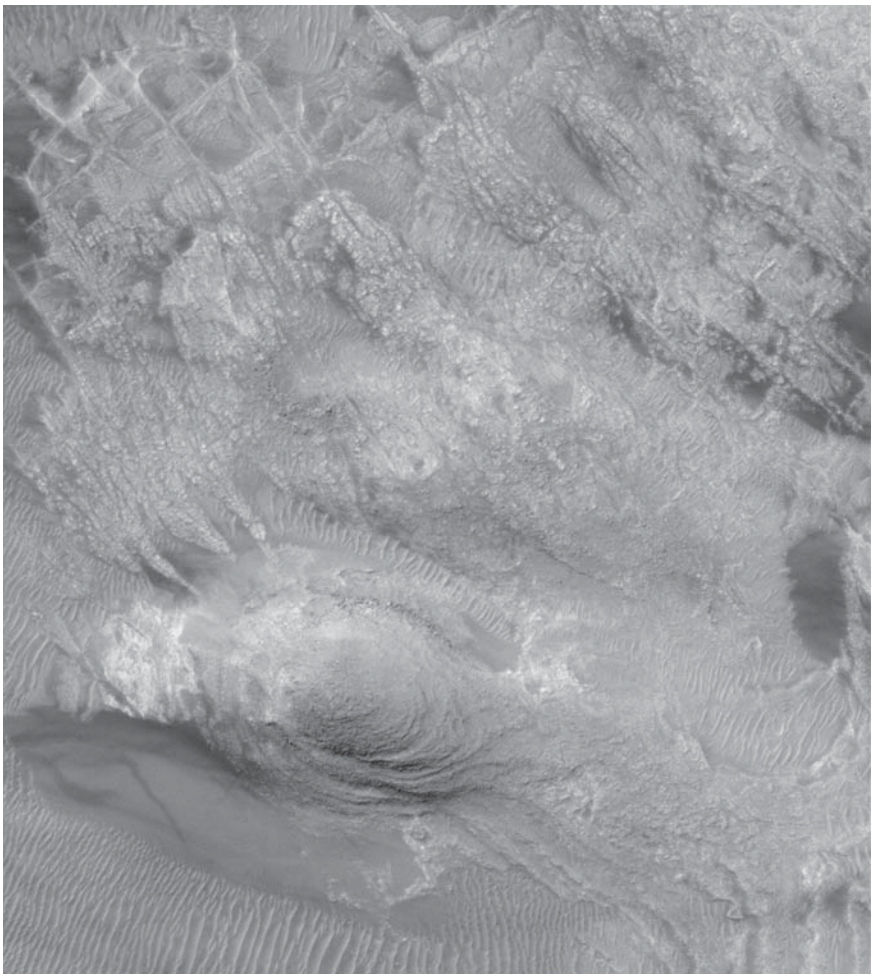

Figure 3. A portion of Mars Global Surveyor image S13-01480 (2009).
Courtesy NASA/JPL/Malin Space Science Systems.
Contrast enhancement by Keith Laney.

K. Hartmann, the data acquired by the Mars Orbiter Laser Altimeter (MOLA) in 2000 (Figure 6) revealed evidence that the area was part of an ancient waterway that connected with the Argyre Basin (Hiesinger & Head, 2002:969). In the online color version of Figure 6 in this *Journal* issue, the red and orange colors of the topographic map indicate the highest terrains, while the green areas indicate a lower terrain, and the blue area indicates the lowest (Hartmann, 2003).

TABLE 1
Comparative Ancillary Data for MOC Narrow-Angle Images M14-02185, S20-00165, and S13-01480

	Image Number		
	M14-02185	**S20-00165**	**S13-01480**
Image start time SCET	2000-04-30T 20:17:33.04	2006-07-03T 04:03:13.29	2005-12 5T 19:58:31.16
Image width	1024 pixels	672 pixels	(km) 2.94
Image height	4864 pixels	9216 pixels	(km) 9.89
Crosstrack summing	2	3	1
Downtrack summing	2	3	1
Scaled pixel width	3.41 meters	4.39 meters	1.43 meters
Pixel aspect ratio	1.60	1.01	N/A
Emission angle	0.29°	17.91°	9.75 °
Incidence angle	45.20°	79.88°	44.30°
Phase angle	44.93°	64.71°	49.67°
Center longitude of image	55.30°W	55.32°W	304.98E
Center latitude of image	48.07°S	47.93°S	-47.53°N
Line integration time (millisec)	0.7231	0.4821	0.4821
Gain mode	4A (hexadecimal)	4A (hexadecimal)	N/A
Offset mode	36 (decimal)	0 (decimal)	N/A
Compression type	MOC-PRED-X-5	MOC-PRED-X-5	N/A
Scaled image width	2.84 km	2.95 km	2.94 km
Scaled image length	21.64 km	40.86 km	9.89 km
Spacecraft altitude	370.76 km	374.58 km	N/A
Slant distance	370.77 km	391.62 km	N/A
North azimuth	94.39°	94.39°	93.27°
Sun azimuth	63.82°	59.34°	60.31°
Solar longitude	344.17°	74.18°	341.04 °
Local true solar time	13.41 decimal hrs (1:41 PM)	14.54 decimal hrs (2:54 PM)	13.50 decimal hrs (1:50 PM)
Release date	4/4/2001	8/11/2006	8/22/2009

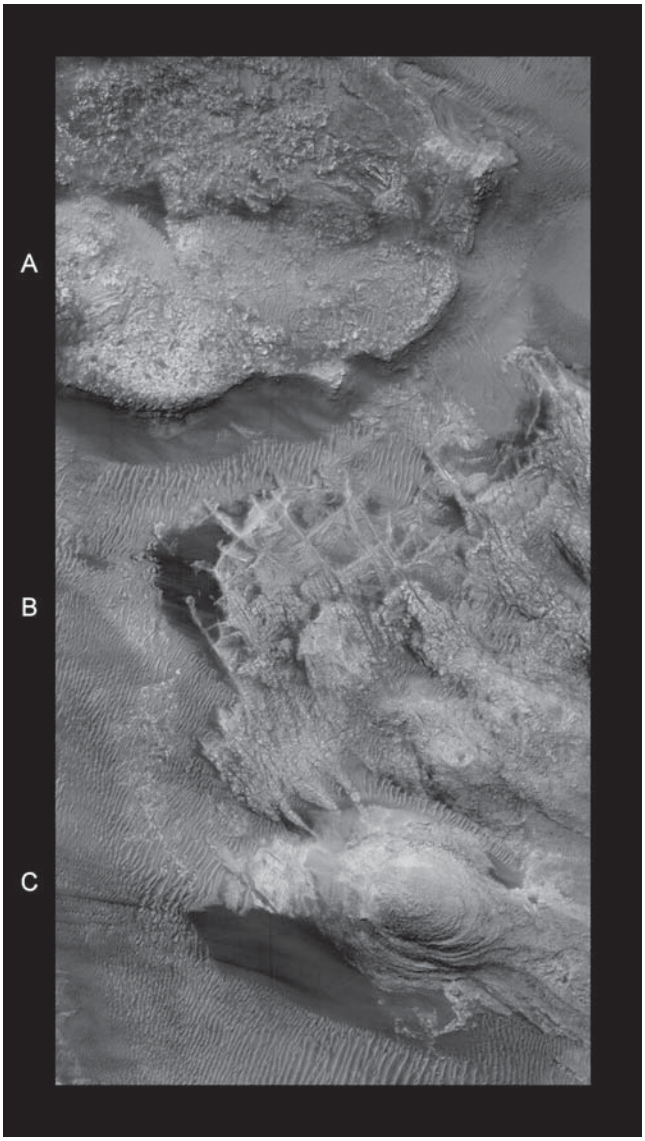

Figure 4. Mars Global Surveyor image M14-02185.
(A) Shows an adjacent landform to the structures in B & C.
(B) Shows a network of cellular structures.
(C) Includes the avian feature item.
Courtesy NASA/JPL/Malin Space Science Systems/Keith Laney.
Contrast enhancement by Keith Laney. Notated by the authors.

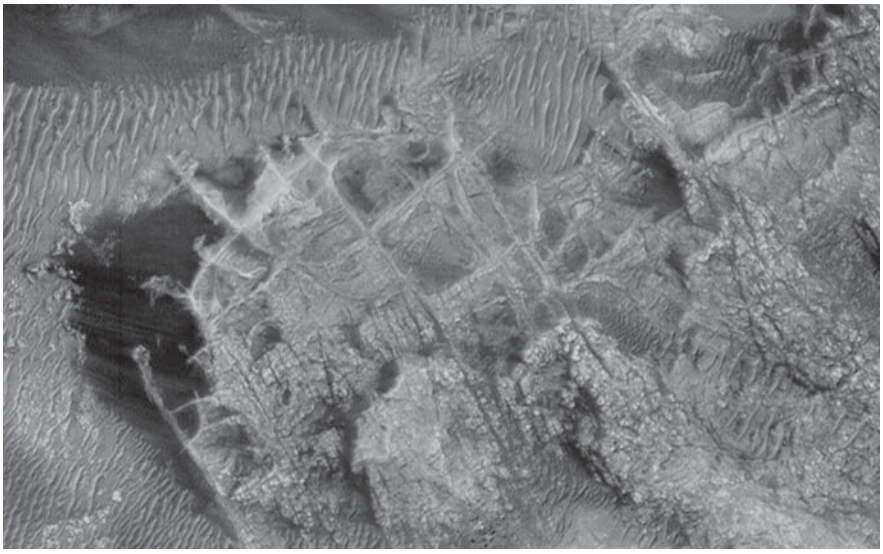

Figure 5. MGS M14-02185 cropped area of cellular compartments. Closeup of Figure 4, section B.
NASA/JPL/Malin Space Science Systems.
Contrast enhancement by Keith Laney.

Topography and Morphology of the Avian Feature

The purpose of this segment is to assess the geomorphology of the avian-shaped structure in question and determine what natural processes are needed to create its structure.

The feature is located on the northwest side of an ancient impact crater known as the Argyre Basin. The regional overview provided in the Mars Orbital Camera (MOC) image M14-02185 and S13-01480 reveals three separate features unique to one another on the edge of a plain. The plain is the remnants of channel beds covered with furrows and dunes most likely created by wind action after the water disappeared. Pockets of a darker and perhaps less dense eolian detritus in some areas overlie the dunes, suggesting the dunes were solidified enough not to have been reworked a great deal after their deposition. It has been argued that glacial and fluvial/lacustrine processes in conjunction with eolian modification were probably most important in the evolution of the interior of the Argyre Basin (Hiesinger & Head, 2002:940). What is immediately apparent regarding the three features (Figure 4A, Figure 4B, and Figure 4C) on the edge of the plain is that they have a disparate appearance and erosional expression

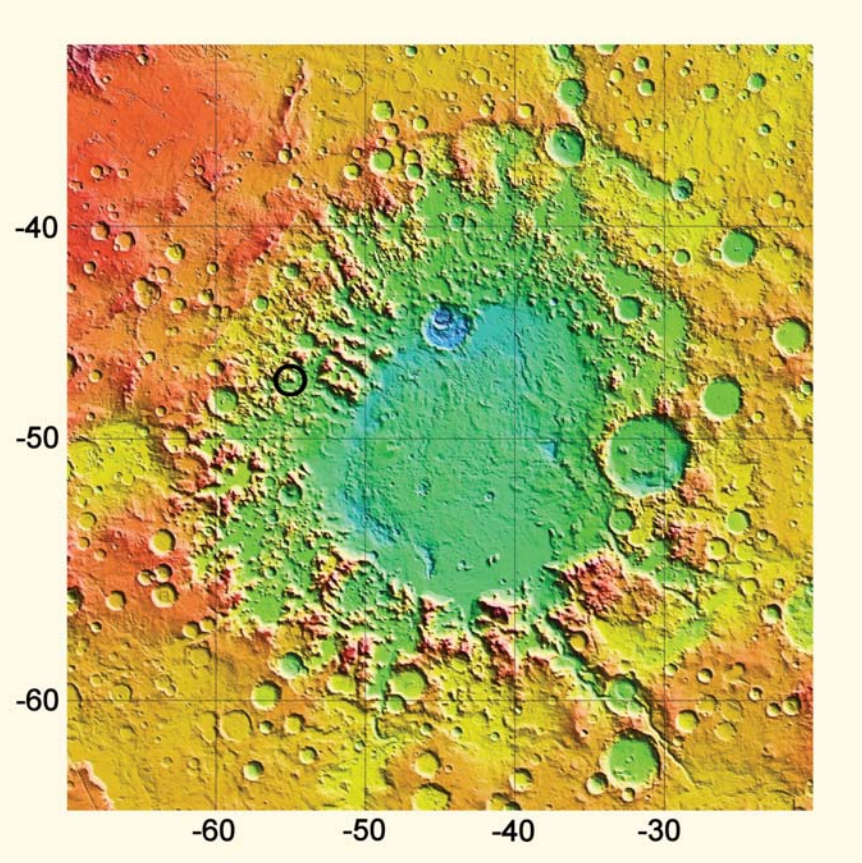

Figure 6. Argyre Basin NASA Mola Data map. Notated with the approximant location of the avian-shaped formation.
Courtesy NASA/JPL/Malin Space Science Systems/The Cydonia Institute.
Annotated by the authors.

inferring different lithological composition (Figure 4). Structure A (Figure 4) has a rounded edge but no striations or major visual evidence of erosion from wind or water action. The composite feature marked B (Figure 4) consists of numerous rectilinear segments along its periphery and an interior with massive rectilinear expression and fracturing. The initial impression for the genesis of such a structure would be dike-like features. It also has an irregular, rather spiked, perimeter showing no indication of lateral water action but may have undergone some wind erosion and deposition within its cellular cavities.

The avian structure (Figure 7) is composed of six segments that include an

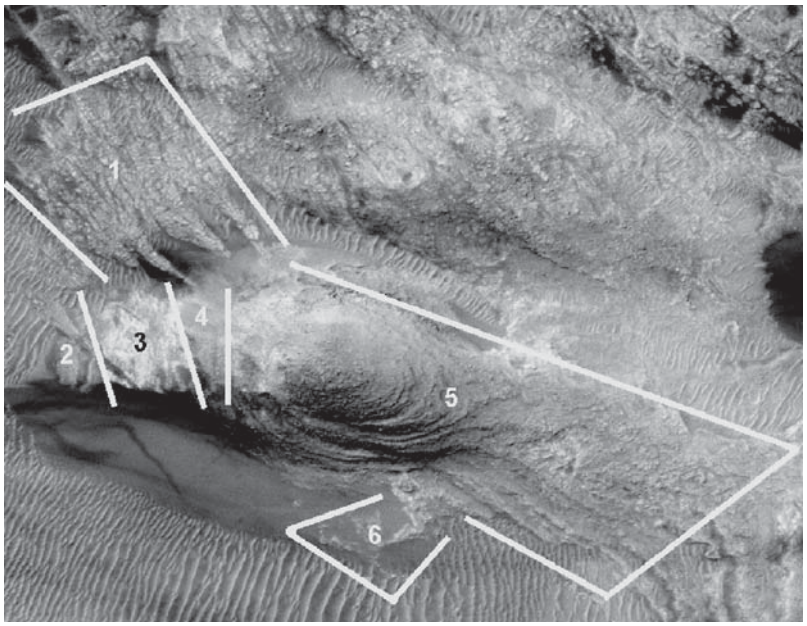

Figure 7. Six Segments of the Avian Formation. Detailed crop of M14-02185. 1) extended right wing, 2) beak, 3) face, 4) neck, 5) body with left wing and tail feathers, 6) legs/feet.
NASA/JPL/Malin Space Science Systems.
Contrast enhancement by George J. Haas. Notation added by the author.
Line annotations by William R. Saunders.

extended right wing (1), a beak (2), face (3), neck (4), the body with left wing and tail feathers (5), and the legs/feet (6). These segments are differentiated by height, color, patterning, contour, and lithology (Figure 7). We shall address the main feature, the body (Figure 7, section 5) first.

The central mound that forms the body, left wing, and tail are sedimentary in appearance. Since the height of the mound is roughly 175 m, and sand dunes on Mars are typically only 10–25 m in height (Greeley, Lancaster, Lee, & Thomas, 1992), an eolian depositional feature can likely be ruled out. The southwestern quadrant of the Argyre crater is suggested to have numerous glacial features including eskers (Hiesinger & Head, 2002:944). Although the avian feature is in the northwest quadrant, subglacial deposition in the form of a drumlin or esker that has undergone lithification would be the most likely candidates for the formation of the avian feature's body. The layered or stratified appearance that gives the visual impression of bird feathers is similar to what could be formed through wind or water action with the feature undergoing post-depositional

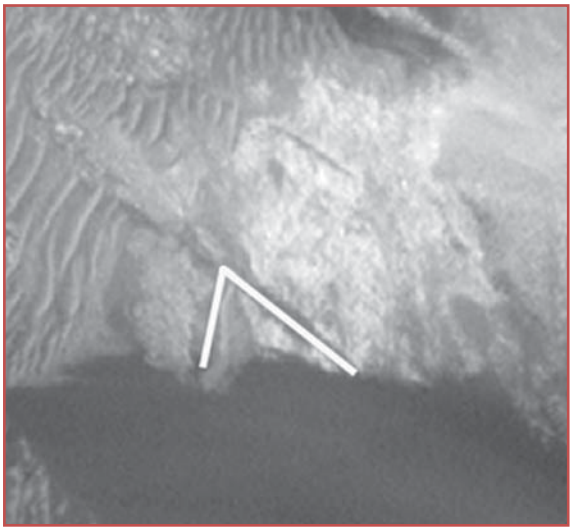

Figure 8. Possible Block Faulting (avian head). Detailed crop of M14-02185.
NASA/JPL/Malin Space Science Systems.
Contrast enhancement by George J. Haas. Line annotations by William R. Saunders.

erosion. The extended right wing (Figure 7, section 1) is highly textured in appearance with longitudinal and shorter perpendicular and slightly angular fractures. This is obviously different lithology than the body, and its extensive fracturing is likely due to rapid cooling. The composition of the beak (Figure 7, section 2) could be composed of the same material as the body (Figure 7, section 5) having been separated by the removal of material from the face area.

What appears to be a block fault also separates the beak from the face forming the mouth (Figure 8). Post-faulting depositional material is the most probable natural explanation for the tongue identified within the fault cavity. The avian-shaped mound is truncated at the neck leaving the portion of the structure between the neck and the beak structurally lower and forming the face (Figure 8) by the exposure of an older underlying material, possibly from a lava flow.

Interestingly, there is no wind-deposited material covering the face; however, wind action may be responsible for a darker material that appears to have been deposited up against the truncated body forming the hood or neck (Figure 7, section 4). The truncated and irregular edge at the juncture of the face and neck raises the question as to whether further erosion over the face occurred after this material was laid down.

Possibly the most interesting feature in the aspects of its structure and

exposure is the leg and foot (Figure 7, section 6). The lighter color and structural level is similar to the face, indicating it likely consists of the same lithology. Interestingly, it as well is exposed and has no windblown material obscuring it. The angular nature of the leg and toes would most conceivably be due to multidirectional faulting occurring prior to the deposition of the mound that forms the body.

The third MOC image of the formation (S13-01480) covers more of the area to the east and reveals a complete depiction of the tail section. In Figure 9, the avian-shaped head, body, feet, and tail are highlighted in a color wash (bottom photo) [color in online journal only] to note the location of individual features.[1]

Conclusions for the Topography and Morphology of the Avian Feature

This investigation has concluded that the processes that were needed to produce this avian structure include glaciation, deposition from water and wind, erosion from water and wind, and faulting. Using the available data provided by the Mars Orbital Camera and the Mars Orbiter Laser Altimeter aboard the Mars Global Surveyor, as well as the studies done by numerous researchers, it is apparent that the necessary geological and geomorphological processes to produce the avian-shaped feature took place in the Argyre Basin. What is most intriguing, however, is the procession of the events and their precise distribution that is necessary to produce all the avian features in their present form and proportion. A random search of the surrounding area of Argyre Basin was conducted and no suitable comparative features were found within the proximity of the observed avian-shaped feature. The search included the north-facing slope of a crater in MOC image M04-00606, a rim feature in MOC image M04-00926, the north central region in MOC image R15-01672, a northwestern area in MOC image M13-00036, the northeastern area in MOC image R15-01194, and a sample of terrain seen in the southwestern area in MOC image M20-00992. The expansive search also included the southwestern area of Argyre Basin in MOC image M13-00220 and a traverse of mountains located in the western region in MOC image M13-00471.

Veterinarian Analyses of the Anatomical Features of the Avian Formation

Three veterinarians (coauthors Cole, Friedlander, and Orosz) have examined this avian feature exhibited within the Argyre Basin. They impartially and independently evaluated the features of the proposed avian formation, having access to both a printed hard copy and computer-displayed image of the complete formation as obtained in NASA MGS photographs M14-02185 (2001), S20-00165 (2006), and S13-01480 (2009). Each veterinarian was provided with an

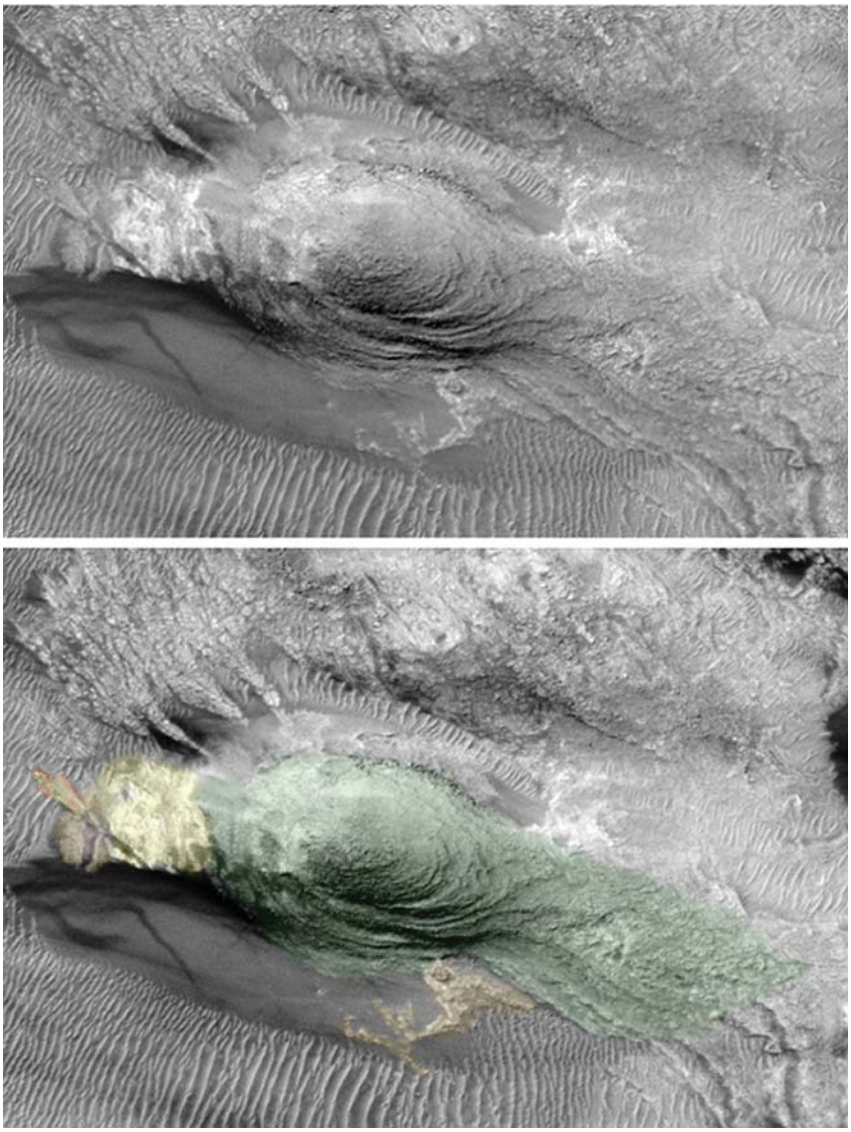

Figure 9. Avian-shaped formation with colorized features.
Cropped from MOC S13-01480.
(Top) Original.
(Bottom) Colored [online journal only].
Contrast enhancements by George J. Haas. Coloration by William Saunders.

analytical drawing of the avian feature produced by author George Haas (Figure 10), and they approved of the notations and details presented. A. J. Cole was aware of prior theories of artificial objects on Mars, while Joseph Friedlander and Susan Orosz had no prior awareness of any theories of artificial objects on Mars. Orosz's contribution to this article is directed mainly at classification of the type of parrot observed.

Anatomical Analyses of the Avian Formation

There are distinct anatomical similarities between the features found on the formation located at Argyre Basin (Figure 1 and Figure 3) and avian species. Centrally there appears to be a midstructural breast and abdomen with protruding structures resembling primary flight feathers with feather shafts attached to the dorsal aspect of the image. On the left (rostral) aspect of the structure there is a resemblance to head and facial features ending at the nape of the neck. The head includes a lateral left eye, and a hinged beak with a blunted tongue between a parted lower mandible. Between the eye and beak there is an arching structure resembling a cere without evidence of a nostril that may be obscured by a crest or comb feature. Below the abdomen (ventrocaudally) there appears to be a claw consisting of a three- or four-toed foot with a bend at the equivalent of the tarsus. There is only a hint of a paired second foot, which is unresolved. The structural formation to the far right of the body (caudally) resembles tail feathers.

The analytical drawing in Figure 10 identifies a set of 17 points of confirmation that veterinarian Cole believes provides evidence that the formation at Argyre Basin not only represents an avian creature, but that its sculptured features appear anatomically correct.

Examination of the formation at Argyre Basin (Figure 1 and Figure 3) reveals features of the avian species. Rostrally (left), one can visualize the beak with its maxilla mandible surrounding the tongue. Features of the head are clearly visible. The cere is noted dorsal to the maxilla. The orbit, papillary margin, and opening of the external ear canal are evident. The head looks featherless. Down feathers are seen in the cervical area. Visualized in the thoracic region is the left wing folded in a natural position. Primary feathers cover this region. Ventrally is the pectoral area ending at the point of the keel. Caudally (to the right) is the abdomen and left pelvic limb. Three digits, tarsometatarsus, and tibiotartus are visible. The photograph includes the proximal portion of tail feathers. Just rostral and dorsal to the tail feathers is a change in feather pattern of the pygostyle (preen gland).

The analytical drawing in Figure 10 identifies a set of 16 points of confirmation that veterinarian Friedlander believes provides evidence that the formation at Argyre Basin not only represents an avian creature, but also that its sculptured features appear anatomically correct.

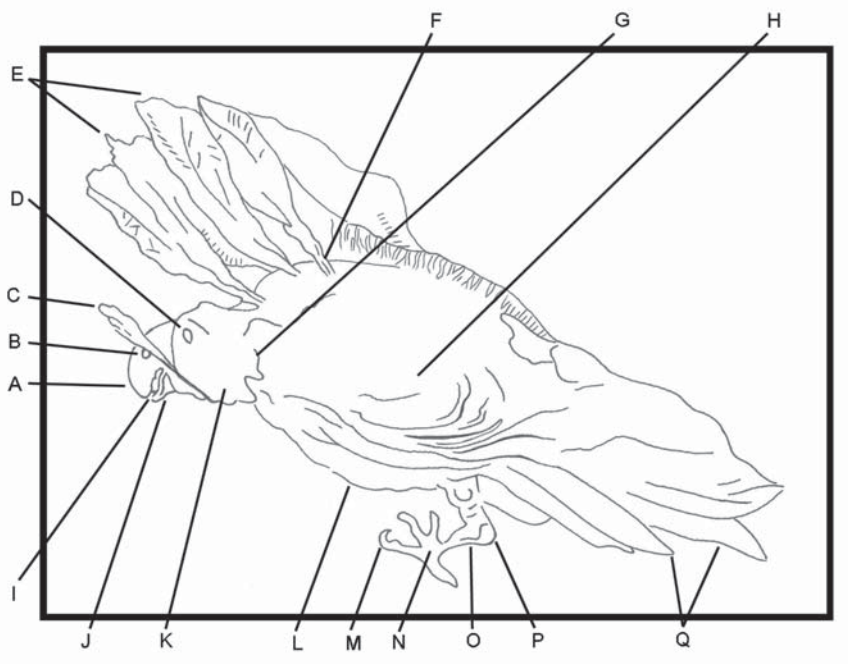

Figure 10. Avian formation. A) Beak. B) Cere. C) Crest. D) Eye. E) Primary flight feathers (right wing). F) Feather shafts. G) Hood line (neck). H) Body (folded left wing). I) Tongue. J) Jaw. K) Head. L) Abdomen. M) Claw. N) Foot and toes. O) Tarsus joint. P) Tibia. Q) Tail feathers.
Analytical drawing by George J. Haas with notations by A. J. Cole. Image source: S13-01480, 2009.

Avian Feature Comparison to Terrestrial Specimens

In viewing the avian formation in Figure 1 and Figure 3, we note that the body type looks very similar to the Psittacines or parrot. The presentation of the bird seems to be that you are looking at the left wing up or extended over the body with the margin on the right on the underside of the body and the medial ventral surface rolled so that the keel is pointing up toward the viewer. The beak is psittacine-like and not passerine, as the thickness and the downward curve to the maxillary ramphotheca has the characteristics of the psittacine (or hook-billed) beak. A distinct upward formation on the beak suggests the presence of a crest or caruncle. Although unusual in this genus, it is quite plausible that this feature is a remnant modeled after the fleshy wattle found on the upper mandibles in the prehistoric taxonomy of Psittaciformes. Although there are many gaps in the fossil history, the earliest fossil of parrot-like birds dates to

Figure 11. King Parrot (*Alisterus Scapularis*).
Image courtesy of Phil Hart.

the late Cretaceous about 70 million years ago (Grzimek, 2003). Therefore, any classification of the avian formation as presented here is variable and subject to change when new images resolve some of the open questions, such as plumage color and the extent of the tail and the formation of the second foot. For that reason, this classification should be treated as preliminary. Considering the identifiable characteristics of external features observed in the available images obtained by NASA, it is reasonable to suggest that, of the 353 species of parrots, the avian formation on Mars derives its anatomical template from the terrestrial King Parrot.

Figure 11 provides a comparative image of the King Parrot (*Alisterus Scapularis*) native to Australia. It averages 14″ or 35.56 cm in length including the tail. The variety of parrots is quite large, and therefore one specimen was selected that closely resembled the avian feature discussed in this paper.

Since no proportional measurements relating various parts of the body to each other have been reported in the literature, the sample parrot was measured and segregated into its components including the head, body, and leg pelvic limb with nails or talons. These measurements are compared to the features of the avian formation. This analysis strongly correlates to the proportions as presented in Table 2.

TABLE 2
Comparison Chart of Anatomical Measurements of Avian Formation and King Parrot Measurements

	Avian Feature Measurements Utilizing M14 & S13	Comparisons	King Parrot Measurements	Comparisons
Body full length	From S13 2042M X=103, Y=4891		14", 35.56cm X=36, y=44 X=493, y=346	
Body length no tail	1346m X=250, y=227 X=733, y=291	Body is 66% of full length	8.72", 22.15cm X=36, y=44 X=325, y=250	Body is 63% of full length
Body width	541m X=528, y=351 X=603, y=172	Width is 40% of length	3.21", 8.15cm X=157, y=245 X=233, y=151	Width is 37% of length
Head to shoulders or scapula	477m X=250, y=227 X=422, y=227	Head is 35% of body length	2.47", 6.27cm X=36, y=44 X=112, y=96	Head is 33% of body length
Thigh or leg	213m X=612, y=362 X=637, y=430		.81", 2.06cm X=200, y=273 X=184, y=245	
Crus or lower leg	183m X=581, y=443 X=637, y=430	8% difference in length of lower and upper legs	.88", 2.24cm X=200, y=273 X=164, y=282	7% difference in length of lower and upper legs
Claw nails or talons	336m X=504, y=397 X=598 y=478	16% difference in the length of the claw and the total length of the lower and upper legs	1.87", 4.75cm X=188, y=285 X=116, y=285	11% difference in the length of the claw and the total length of the lower and upper legs

The avian feature cropped from Figure 2 and the King Parrot in Figure 11 were measured by author Miller using Scion Image for Windows software by Scion Corporation based on an NIH image for Macintosh by Wayne Rasband of the National Institutes of Health USA, release Alpha 4.0.3.2. This is the software used by NASA to measure surface features on Mars starting with the Viking mission. Both the M14 and S20 images were measured utilizing the aforementioned software. Only the S20 image provided a shadow which was used to establish the height via the formula provided in the tutorial for the software, that being y (height or depth) = x (length of shadow) tan (90 – INA), (INA is the incidence angle which is 79.88° as noted in Table 1). With the use of the S13 image, an approximate overall length is established for the feature as

TABLE 3
Basic Anatomical Measurements of Avian Formation

Body length	=	1,570 meters
Body width	=	685 meters
Length of shadow	=	975 meters
Height of body	=	175 meters

illustrated in Table 3. The comparisons in Table 2 are extremely close regardless of the fact that starting and ending points are confined by pixel selection. The knowledge of the differences could have prompted re-selection of the points to bring the totals closer. However, it carries more meaning to arrive at the numbers by selecting points the eye considers correct.

The x and y coordinates are provided in Table 2 as guidelines so that interested researchers may make their own measurements; however, it should be noted that even minor deviations can produce differences of several meters at this scale, and the main point of Table 2 is to provide an overall comparison of proportions as opposed to any standardization of measurements for parrots, as the variations are simply too large a sample to gather valid interpretations for the species. It is also noted that in using a flat image, beginning and ending points on both examples are somewhat capricious, and that precise measurements could be obtained only during a physical examination of beginning and ending points such as neck to head and leg to body on actual physical subjects. The conclusion can be reached, however, that the avian feature on Mars and the terrestrial King Parrot compare in their overall relative dimensions.

Aesthetic Analysis

The formation at Argyre Basin appears to be the result of a composite structure of unrelated geological materials that have been transformed into a sculptural relief that express the prominent features of an avian creature when observed from above (Figure 9). The topographical features observed in MOC images M14-02185, S20-00165, and S13-01480 include an oval-shaped mound that conforms to the shape and size of a bird's body including a folded left wing. Adjoining features to the left side of the body-shaped mound suggest a composite of structural elements that resemble a bird's head (Figure 10, point K). The head includes an eye formation (Figure 10, point D) and a parted beak with evidence of a tongue (Figure 10, point A). The beak has a feather-like protuberance, referred to as a crest by both authors Cole and Orzos that extends from the beak

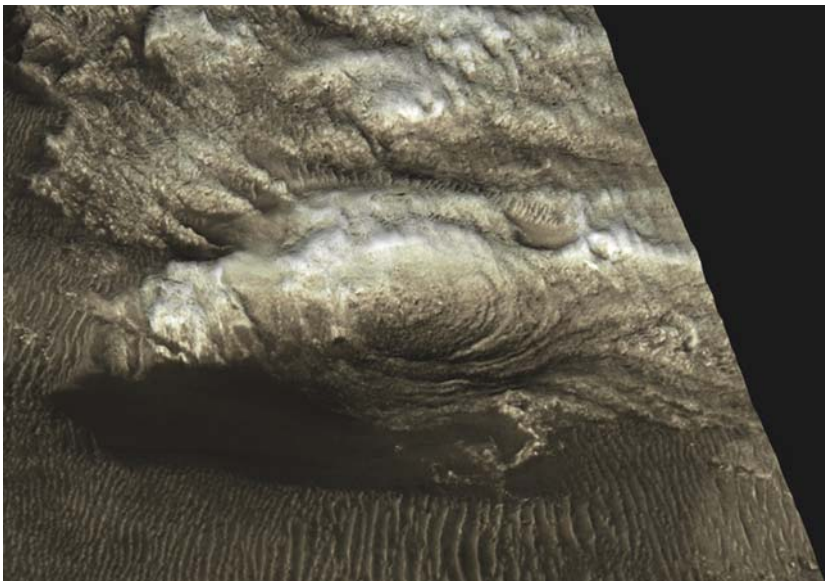

Figure 12. Three-dimensional perspective view of the avian feature. Created by Robert Brunete utilizing M14-02185.
NASA/JPL/Malin Space Science Systems.

and projects out from the head (Figure 10, point C). The modeling of the head is complex in its expression of texture and shading. The foreshortened orientation of the eye is remarkable in its proportion to the sightline expected within a profiled perspective. The plasticity of the beak appears hard and mantled, while the overall head and neck has a soft cauliflower look. Additional elements form an extended left leg (Figure 10, points O & P) and clawed foot with exceptional adherence to muscular definition (Figure 10, points M & N). The sculptural process of the leg appears to be fashioned in low relief and in effect has allowed sediment to cover portions of the detail (Figure 12). Attached to the body is an extended right wing along the back (Figure 10, points E) and tail feathers (Figure 10, points Q) that are again sculpted in low relief. The tail feathers extend from the body ending with splayed tips.

The simulated relief highlights the sculptural perspective of the avian-shaped formation (Figure 12). The image also exhibits additional anatomical structure to the leg and toe, including the appropriate form to the tarsus joint and tibia formation (Figure 13).

The following image in Figure 14 is a drawing of a hammered copper plaque of an avian form that was produced by the Hopewell Indians of Ohio about 400 BC (Thomas, 1994). It is presented here as a comparative image for the

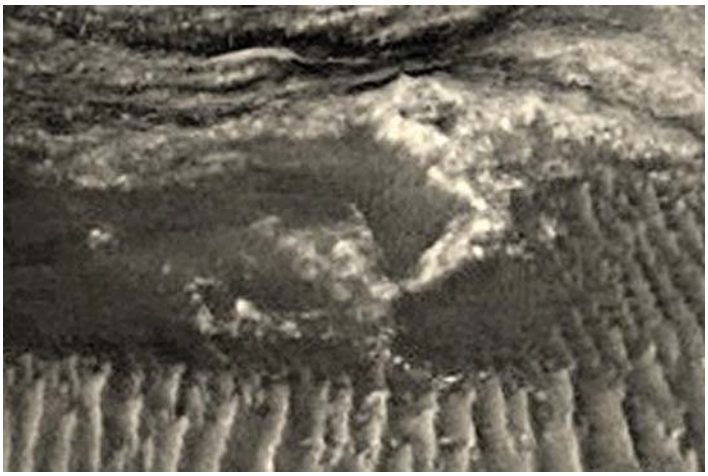

Figure 13. Three-dimensional perspective views of leg and toes. Cropped from MOC image M14-02185.
Figure 13 by the author.

avian feature found at the edge of the Argyre Basin on Mars. In reviewing this Hopewell plaque, avian specialist and author Orosz in 2006 identified the form as representing an indigenous parrot. She acknowledges the overall profiled posture of the Hopewell parrot with its extended wing motif is reminiscent of the design expressed within the avian feature on Mars. She also notes the shape of the parrot's head and beak shares a common form with the avian feature on Mars, while the shape of the clawed foot, the round belly, and the stylized tail feathers are also analogous.

The majority of comparative examples of manipulated terrestrial geology come to us in the form of earthworks that were created by ancient cultures throughout North and South America. These huge mounds and earthworks were shaped like animals and geometric symbols, while others were formed like ceremonial platforms and step pyramids. It is estimated that the amount of earthworks found throughout North America number in the hundreds of thousands. However, over time almost all of these monuments have been either destroyed by natural erosion or by the rapid expansion of rural and urban development. Because there are a limited number of examples of animal and figurative earthworks in the available database, only two meet the criteria of this study with comparable detail and content.

The first is a 5,000-year-old, eagle-shaped geoglyph located in the town of Eatonton, Georgia. At the site, an eight-foot-high bed of white quartz stones

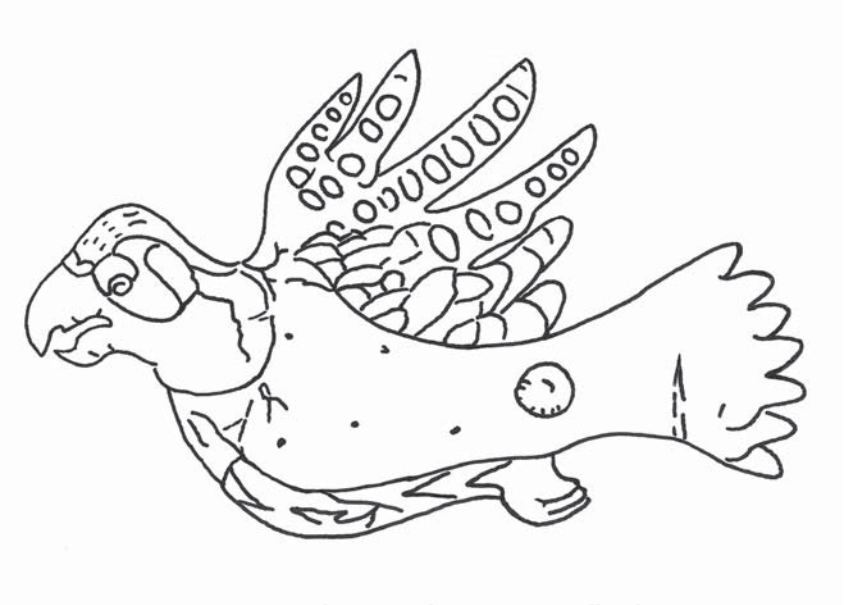

Figure 14. Parrot—Hammered copper plaque (Hopewell Indians). Drawing by George J. Haas.
Image source: *Exploring Ancient Native America, An Archaeological Guide* by Davis Hurst Thomas, Macmillan, 1994, p. 135.

form a silhouette of an eagle hovering within a circular mound. The apex of the mound forms the eagle's abdomen, which creates a similar elevation as seen in the mound-shaped abdomen of the avian formation on Mars. The body of the eagle effigy measures more than 100 feet from head to tail and has a wingspan of more than 120 feet (Figure 15) (White, 2002). The overall shape of the eagle effigy is symmetrical in design, featuring a set of outstretched wings, tail feathers, and a head that faces eastward. As seen in the illustration, its contours project only the simplest form of a bird without providing additional details.

A second example of an avian earthwork is etched on a hillside in the Peruvian Andes, not far from the famous Nazca lines (Longhena & Alva, 1999). The Peruvian pictograph is formed by a set of conjoined lines that create the impression of a standing bird (Figure 16). Although the awkward shape of the Peruvian pictograph is not proportioned or anatomically correct, the overwhelming consensus is that it indeed represents the generic form of a small bird.

Accepting the consensus that this simple mound and hillside rendering are accepted as intentional works of art by the limits of aerial observations, it would be reasonable to suggest that the formal organization expressed within the avian feature on Mars conflicts with the randomness of mere chance. There are no

Figure 15. Eagle Effigy Mound: Eatonton, Georgia. Drawing by George J. Haas.
Image source: *National Geographic, 142*(6), 784.

terrestrial geoglyphs that induce such a visual impression that approaches the refined modeling of relief sculptures as seen in the avian formation at Argyre Basin.

Conclusion

The overall impression of this area of the Mars photographs (Figure 9) is that regardless of the nature of the varied lithology or the nature of depositional and erosional agents, the avian-shaped formation is indeed exceptional in its physical appearance and anatomical completeness. While there are known geological mechanisms that are capable of creating the anatomical accuracies presented in this formation, the natural creation of a formation with 17 points of anatomical correctness seems to go well beyond the probability of chance.

With respect to the modeling of these anatomical features, visual perception of the avian formation, which has been documented over a six-year period by the Mars Global Surveyor's orbital camera, appears to have permanence and is not the result of a transient phenomenon or an illusionary projection. One interpretation is that this formation was originally a natural landform

Figure 16. Bird pictograph (Nazca). Drawing by George J. Haas.
Image source: *The Incas and Other Andean Civilizations* by Longhena and Alva, San Diego: Thunder Bay Press, 1999, p. 201.

that was modified to illustrate the required features of a recognizable bird. However, although the authors find this as an intriguing possibility, we also acknowledge that the current dataset is not of sufficient resolution to warrant a conclusive analysis, and additional high-resolution images of this feature are needed. Therefore, it is with our combined fortitude[2] that we have requested the cooperation of both NASA and the imaging team at the University of Arizona, to direct the HiRISE camera aboard the current Mars Reconnaissance Orbiter (MRO) to photograph this enigmatic feature at its next available opportunity.

Notes

[1] The addition of color is an accepted tool utilized to highlight features observed in NASA space images of Martian geography. See Michael Malin, *Fossil Fans in Melas Chasma, Captioned Image Release No. MSSS-2—13 April 2007*, Malin Space Science Systems. http://www.msss.com/msss_images/2007/04/13/

[2] Although both author Miller and Keith Laney filed a targeting request for the avian formation with the HiRISE public targeting program between 2007 and 2009, the new HiWish program which began in January 2010 has no record of their requests. Previous targeting suggestions may have been lost when the HiRISE team reconfigured the new

targeting map. Therefore, during April 2011 Keith Laney filed a new targeting request for the avian formation on the HiWish Public Suggestion Page. The request is titled "Layered massifs and rectilinear ridges in NW Argyre" with the ID number 59392.

Acknowledgments

We would like to recognize the late Wilmer Faust for bringing this avian feature to our attention in 2002 and for all of his input that was offered toward the early drafts of this paper. We also acknowledge and thank NASA and Malin Space Science Systems for the use of Mars Orbiter Camera images that are available at http://www.msss.com/moc_gallery/ as well as the image data. A special thanks goes to Robert Brunete for his 3-D image of the avian feature and to Phil Hart for the use of his photograph of a King Parrot. The authors are also extremely grateful to digital-imaging specialist Keith Laney for providing us with his rich enhancements of the NASA photographs presented here, and we also thank him and the members of The Society for Planetary SETI Research (SPSR), Horace Crater, and Greg Orme for their comments and reviews of early drafts of this paper.

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GUEST EDITORIAL

On Wolverines and Epistemological Totalitarianism

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Whoever undertakes to set himself up as a judge of Truth and Knowledge is shipwrecked by the laughter of the gods.
— Albert Einstein

Only fools and charlatans know and understand everything.
— June 9, 1888, letter from Anton Chekhov to Ivan Leontiev (Scheglov)

While strolling with my beloved in the local zoo, we came across a shortish, furry, brown fellow who engaged our sight and seemed to want to play with us, albeit at a distance. He was friendlier even than the acknowledged local clowns (the bears) and surprise followed surprise as we read that this guy belongs to the ferocious wolverine species. Could this same jolly creature be one who would promptly dispatch us, much larger animals, if he were not fed for a while? Thinking about these seemingly contradictory views of one and the same being and of how reality is always more complicated than our models of it, I had the insight that what mostly afflicts "skepticism" is the inability to tolerate complexity and even seemingly contradictory views about a phenomenon. I write "skepticism" in quotation marks to differentiate the epistemological absolutism that pervades both the strident anti- and pro-psi proponents from what I consider a healthy abeyance from fully committing to a closed position in science or other aspects of life. I contend that although the person in a "New Age fair" trading in everything from magical rocks to mysterious odors may seem to be the counterpoint of, say, the arch-skeptic academic who a priori declares psi impossible, they are both afflicted with the same inability to assimilate contradictory information and tolerate ambiguity, it is only their axioms that differ. And even those may not be that different when we compare superficial materialism and superficial spiritualism (Cardeña, 2010). Consider Humphrey's comments (1995:54) that "materialism is to all intents and

purposes the fact of life" no matter how contentious that concept of "matter" is in physics and philosophy (e.g., Wigner, 1969), and that of a Brazilian medium who reported that after death there is food, the same as here, just better-tasting (cf. Playfair, 2010). For both, nothing else seems to exist but everyday objects, the only difference being that for the second they continue after death.

The main thesis of this Guest Editorial is that although the rhetoric of the aggressive psi critic, the all-believing psi-proponent, or the New-Ager would seem to be, pun intended, universes apart, they are both instances of an epistemological totalitarianism that assumes an all-knowing apprehension of the nature of reality and reveals intolerance for complexity and ambiguity and an indictment of anyone not sharing that view. Let me discuss the differences between the respectable skeptic and the "skeptic." The former is a person who is inclined to question accepted opinions, including those offered by "authorities," scientific or otherwise, and those stemming from one's own preconceptions. This attitude undergirds the scientific attitude toward epistemology, which divorced itself from pronouncements coming from way back (as in Aristotle's statements about the number of teeth found in a horse) or way up high (as in texts inspired by the religious or academic higher echelons). Here are two examples of this very healthy stance. 1) The Editors for the issue of the *Journal for Personality and Social Psychology* in which the recent series of studies on precognition by Daryl Bem were published wrote that they found the results "extremely puzzling [but] our obligation as journal editors is not to endorse particular hypotheses, but to advance and stimulate science through a rigorous review process" (Judd & Gawronski, 2011:406). 2) Also, Carl Sagan's principled refusal to sign a letter against astrology not because he felt

> that astrology has any validity whatever, but because I felt and still feel that the tone of the statement is authoritarian. . . . That we can think of no mechanism for astrology is relevant but unconvincing. No mechanism was known, for example, for continental drift.

He also discussed whether the signatories had any expertise on the matter and concluded that "we can question whether they have the right to state that 'there is no scientific foundation for (astrological) tenets' without having done the necessary homework" (in Gauquelin, 1983:5).

In contrast, the "**skeptic**" is **s**implistic and **k**nowledge-averse, **e**nsures that other perspectives cannot be considered, is **p**ejorative toward his/her antagonists, aims to **t**errify others, holds **i**nconsistent standards, and uses **c**ircular and other forms of faulty reasoning. In what follows, although I will refer to specific authors to make my points, my criticism is against a way of thinking found in both pro and anti-psi stances rather than against particular individuals or conclusions about psi. Thus, I expect that this piece will make

a number of readers uncomfortable but hopefully encourage reflection on the danger of endorsing any simple solution to our topic.

Simplistic

"Skeptics," notwithstanding their surface differences, are convinced that they have found a single explanation for everything, be it materialist metaphysics, evolutionary theory, the action of psi in every event, or the world of the spirits and angels, and refuse to consider complexity and uncertainty. Isaac Asimov (1987) was insightful in his analysis of "pseudoscience" as providing "a security blanket, a thumb to suck" instead of the uncertainty and insecurity of science, but failed to extend it to those who use science for these same purposes. In a scolding rebuke to the latter, Marilynn Robinson (2010) discussed how the issue is not that broad theories such as evolution are wrong, but that they do not explain everything and are often used to underpin metaphysical commitments rather than scientific explanations, a position that the eminent evolutionary biologist Richard C. Lewontin calls "evolutionism" (2005). He also (1994) pointed out how biology, dependent on so many complex phenomena plus a sprinkling of randomness, might be considered more an interpretative discipline than an "exact" science, a perspective missing in so many psychologists and philosophers such as Dawkins, Dennett, and Pinker cloaking themselves with the mantle of an all-explaining evolutionary theory.

An equally all-encompassing (and as unfalsifiable as some functionalist evolutionary accounts) stance, although parting from a different metaphysical point, involves such ideas as the New Age *The Secret* (Byrne, 2006), which proposes that positive thinking will transform reality. While there is a sprinkling of truth to the idea that attitudes and beliefs can have some effect on self and others' experience and physiology (Cardeña & Cousins, 2010), to pass it off as an all-powerful force makes a mockery of the victims of massacres and other forms of violence throughout history who, we should assume, were not thinking positively enough about themselves and their children.

"Skeptic" treatises are rife with other forms of oversimplification. For instance, Humphrey (1995) describes a monolithic science and states that "Most people most of the time actually behave as if they were thoroughgoing materialists" (p. 55), apparently not realizing that individuals may hold as valid *simultaneously* the reality of a world of objects and of seemingly non-material forces, as the cross-cultural phenomena of shamanism, mysticism, and others exemplify (Cardeña, Lynn, & Krippner, 2000). Grossman (2010:x) also describes a monolithic science that "has in fact already established that consciousness can exist independent of the brain and that materialism is therefore empirically false." Predictably his and Humphrey's "sciences" arrive at opposite conclusions. A similar certainty about science is found in a theory

of survival which states that "The reality of living spirits will no longer fall outside of science, *it will be required by science* (my emphasis)" (Schwartz & Russek, 1990). Actually, even the "mainstream" psychology I work with is not at all how these authors portray it. For every theory I know (including some in the "harder" sciences such as biology and physics) there are knowledgeable people who vehemently disagree about the evidential value of different pieces of research, how to interpret them, and so on. Of course, the latter is not a foreign idea at all to the philosophy and sociology of science (cf. Lakatos & Musgrave, 1970).

Knowledge-Averse

"Skeptics" do not need to read anything that runs counter to their beliefs because they already **know.** Thus, not even minimal rules of academic scholarship count. Humphrey (1995) provides an example of this attitude in a book written ironically while he held an endowment created to research psi phenomena. In it he showed that he is well-read in literature and philosophy, yet when it comes to the major theme in his book, psi phenomena, he only included slightly more than 10 references to research, most of them having to do with beliefs and attitudes, rather than about testing the validity of psi phenomena. An undergraduate thesis with about 10 references to its central topic would be unlikely to get a passing grade in my university. The same practice is followed by some psi proponents (e.g., Playfair, 2010) who fail to cover the relevant literature and give due credit to reasonable, alternative explanations, not to mention the many popular books that do not include even a single reference. In contrast, in a recent book evaluating the worth (or not) of most skeptical criticism of psi, McLuhan (2010) analyzed hundreds of publications for and against psi, discussing the merits of both sides and found that overall critics failed to actually engage with specific data reported by psi researchers, relying instead on generalizations and made-up cases. He reports that developmental biologist Lewis Wolpert carried this to the extreme of refusing to see a relevant film being shown as part of his debate with Rupert Sheldrake (p. 291).

In addition to the failure to conduct the typical first stage of a research project, namely doing a good literature review, Friedman and Krippner (2010) provide a number of examples in which critics blatantly misrepresented Krippner's research (e.g., Zusne and Jones) and even failed to correct their mistakes after they had been pointed out to them (e.g., Hansel).

Ensures That an Alternative Perspective Will Not Be Listened to

Contrary to the free discourse of ideas propounded by John Stuart Mill and others, the "skeptic" wants to eliminate the existence of alternate positions. For

instance, in his op-ed the cognitive scientist Douglas Hofstadter (2011) blasted the editors of the prestigious *Journal of Personality and Social Psychology* for allowing an article on research in precognition, which had undergone appropriate peer-review, to be published, and recommended just to "ignore" it and deny it publication. A similar type of censorship was attempted by physicists Antony Valentini and Mike Towler who initially disinvited Nobel prizewinner Brian Josephson and physicist David Peat to a conference discussing the work of David Bohm because of their interest in, respectively, psi and synchronicity (Reisz, 2010). Ironically, Bohm himself endorsed the reality of psi and got an award from the American Society for Psychical Research.

Although I am not aware of an equally egregious example among psi researchers, a recent anthology on the possibility of survival (Storm & Thalbourne, 2006) did not include a single chapter that would provide an informed alternative to the position of the survival of consciousness. Along similar lines, some of us get periodically chastised in a closed list on survival research for expressing doubts about its reality, never mind that such knowledgeable authors as Gauld (1982) have a very difficult time reaching closure or clarity on what the relevant research means, even while accepting that there is a good case to be made for anomalous cognition in this area. And popular New Age books often fail completely to discuss alternative or supplementary explanations to their tenets.

Pejorative

Although the attacks by "skeptics" against parapsychologists have not reached the extreme of comparing them to Hitler, as Frederick Crews did with Freud (in Begley, 1994), questions about personal integrity, intelligence, and even personal insults have been the order of the day. Richard Dawkins (1998), showing no evidence that he had actually read parapsychology research called psi "bunk" and those who "[t]ry to sell it to us fakes and charlatans, and some of them have grown rich and fat." Although in this and in other areas there have been and continue to be people who engage in fraud for personal gain, last time I checked with parapsychology researchers I could not find anyone who would be considered wealthy and their waists did not evidence a greater voluminosity than typically found in academic circles.

Hofstadter (2011), with unrestrained nastiness, called anyone endorsing or doing research on psi "crazy" and "crackpot." Thus, he must consider "crackpots," among many others at least 10 previous Nobel prizewinners in physics, medicine, and other disciplines (Marie and Pierre Curie, Lord Rayleigh, Joseph John Thomson, Santiago Ramón y Cajal, Maurice Maeterlinck, Charles Richet, W. B. Yeats, Henri Bergson, Nicholas Murray Butler, Brian Josephson, Alexis Carrel, and Thomas Mann), towering figures in physics including David

Bohm, Wolfgang Pauli, Sir William Crookes, Sir Oliver Lodge, and Alfred Russell Wallace, co-creator of natural selection theory. "Crazies" in other fields include, in psychology, Sigmund Freud, C. G. Jung, and H. J. Eysenck, along with at least two past American Psychological Association Presidents (William James and Gardner Murphy), foundational philosophers such as C. S. Peirce and Henry Sidgwick, the mathematician Alan Turing, the anthropologist Margaret Mead, eminent writers including Upton Sinclair and poet laureate Ted Hughes, and inventors Thomas Alva Edison and Hans Berger (who developed the EEG to attempt to research telepathy). Recently, research on parapsychology has been conducted in various universities including such bastions of "craziness" as Cambridge University, the University of London, Edinburgh University, Princeton University, Cornell University, the University of California, and Lund University. And, of course, Hofstadter claims to have a better grasp of physics than Einstein, who wrote that "we have no right to rule out a priori the possibility of telepathy. For that the foundations of our science are too uncertain and incomplete" (1946, in Ehrenwald, 1978:138).

Other uncouth criticisms include the characterization by David Marks (2000) of remote viewing researchers as incompetent, deceptive, and fraudulent, and by Ganoe and Kirwan (1984) who described research on psi as pseudoscience and "horse manure" (p. 376). Eric-Jan Wagenmakers also manifested this scatological inclination by commenting about Bem's research that "It shouldn't be difficult to do one proper experiment and not nine crappy experiments" (in Kols, 2011).

On the other side, we have the milder contempt of Grossman (2010) stating that whoever holds a materialist perspective is not "a responsible investigator" and is dogmatic and "irrational." He also stated that those who succeed academically do so not on the grounds of "talent, but mostly on competition, self-promotion, and so forth." He also implies that anyone disagreeing with his conclusion has not accepted the primacy of love. I have encountered in other venues the similar idea that whoever holds a materialist perspective cannot be ethical, find meaning in life, or be a "nice person." As an antidote to that assumption, here are the beautiful words of Bruce Frederick Cummings (nom de plume Barbellion), who had no trouble expressing the sacredness of life without requiring an afterlife, in his *The Journal of a Disappointed Man* (Barbellion, 1920:72).

> To me the honour is sufficient of belonging to the universe—such a great universe, and so grand a scheme of things. Not even Death can rob me of that honour. When I am dead, you can boil me, burn me, drown me, scatter me—but you cannot destroy me: My little atoms would merely deride such heavy vengeance. Death can do no more than kill you.

Terrifies Others

One of the central principles of contemporary politics is that it pays to fear-monger so your audience will become terrified and flock in panic to you to be rescued from such threats. Just such a rhetorical strategy is used by Hofstadter (2011) who writes, without giving a scintilla of evidence supporting his contention, that publishing Bem's studies on precognition goes "against the laws of physics as we know them [and] . . . our entire scientific worldview would be toppled . . . and we would have to rethink everything about the nature of the universe." Really? This must be news to some physicists including David Bohm, Brian Josephson, and Dean Emeritus of the Princeton University School of Engineering and Applied Science Robert Jahn, who have written about the reality of psi phenomena without fleeing to a cave to wait for the imminent collapse of science as we know it. It is also worthy of remark that pronouncements about psi phenomena breaking the laws of physics à la Hofstadter typically fail to mention just what laws are being broken and in what way. For instead, consider that backward causation is both a recognized theory in physics (Sheehan, 2006) and compatible at least in principle with the precognition data reported by Bem and others.

Humphrey (1995) also expresses the fear that the existence of psi would undermine individuality and with it everything bright, beautiful, and creative in nature and culture. This would come as a surprise to artists and other creative people who typically show greater psi abilities than the population at large (e.g., Schlitz & Honorton, 1992).

I could not think of similar fear-mongering by pro-psi authors, but with respect to the New Age literature we are of course living just one year before 2012, the year that according to the interpretation by some of the Mayan calendar the whole world will end, although perhaps not for those who become spiritual enough to escape that fate. By the way, being Mexican I have friends with Mayan roots, all of whom seem to be, amazingly enough, unconcerned about this imminent debacle.

Inconsistent

The scientific process has a number of features that guard it against blatant authoritarianism and prejudice, among them the assumption that evidence trumps authority and that our hypotheses should be put to the test not only by us but by others who do not share our perspective. These safeguards are to be applied consistently by all players, but the "skeptic" frequently disregards the rules. As Robinson (2010:2,33) writes about authors such as Dennett and Dawkins who provide their versions of evolutionary theory to dismiss the

importance of consciousness and culture, that parascience claims the authority of science without practicing

> the self-discipline or self-criticism for which science is distinguished . . . [and presumes that it] has given us knowledge sufficient to allow us to answer certain essential questions about the nature of reality, if only by dismissing them.

Consider a recent review of a book on neurobiological aspects of people claiming psi abilities. In it, Hughes (2010) chastises the authors for "casting aspersions" on "useful science" yet has no problem in stating that psi phenomena "do not exist in a way that can be seen, heard, felt, witnessed, or recorded *by a disinterested observer* [my emphasis]," failing to support his own aspersion. He also writes that the authors need to "acquire higher standards of epistemology," yet has no compunction in citing a meta-analysis of psi research (Milton & Wiseman, 1999) while failing to mention both the criticisms against various aspects of that study (Bem, Palmer, & Broughton, 2001) and a more comprehensive and recent meta-analysis (Storm, Tressoldi, & Di Risio, 2010).

Another example of inconsistency is that while "skeptics" often claim that memory mistakes can explain anecdotes of putative psi events, they carefully avoid mentioning that arguably the most influential research on the reconstructive nature of memory, that of Frederic Bartlett, showed that people tend to "normalize" their recollections, rather than making them more outlandish and psi-friendly. This memory process would indicate that the recollection of putative psi phenomena would underestimate their actual incidence. As McLuhan (2010) describes, even when such a process is found in the psi literature it is taken by "skeptics" to count against the evidence of psi. The description by Bartlett of what tends to happen with remembrances of unusual events is very familiar to me, as I have observed how events that we experienced as very unusual seem to lose potency and intensity with the passage of time.

Zingrone (2004) has also documented many instances in which critics of parapsychology have failed to follow the standards they demand, whether rightly or wrongly, from psi researchers. She presents examples in which a number of critics, including James Alcock, present alternative explanations to psi that either are irrelevant or which they themselves do not test (the published research records of a number of critics of psi methodology, including those of Alcock, Hansel, and Hyman, is rather thin, as evidenced by PsycInfo), and they are uncritical of the sources of their "data," including "anecdotes" whose use they criticize in the pro-psi literature. They also show a lack of self-evaluation and criticism of their own arguments, while being thoroughly critical of those offered by parapsychologists. A more recent example documenting unscientific standards by "skeptics" is a paper on Martin Gardner's attack on the research on

the famous medium Mrs. Piper, which describes his blatant misrepresentation of the actual research (Taylor, 2010).

One point on which Hughes and I agree, however, is that some authors writing on parapsychology, spirituality, or similar topics are inconsistent in decrying mainstream science, the scientific method, and materialism while at the same time using, admiring, and quoting scientific research data that may be interpreted as supporting their ideology. Grossman's claim (2010) that science has proved his conclusion while simultaneously blasting academia is an example of this tendency.

Circular and Other Forms of Specious Reasoning

Implicit in many of the examples discussed above is circular reasoning, which allows the "skeptics" to retain their certainty. Thus, Grossman (2010) states that whoever holds a materialist perspective is not "a responsible investigator." How does he know? Well, because whoever is a responsible investigator does not hold a materialist perspective. Similarly, for Hofstadter (2011) anyone supporting psi is a crackpot. How does he know? Because only crackpots would support psi. . . . And there are other types of circular reasoning and vicious circles. When aiming to appear reasonable, a critic may write that "it might be worthwhile to allocate some resources toward seeing whether these findings [on anomalous cognition] can be independently replicated" (Hyman, 1995) and some years later state "craziness . . . an embarrassment for the entire field" when a collection of studies replicating each other and previous studies is published (Hyman, in Carey, 2011).

A different kind of circular reasoning is the misuse that Wagenmakers, Wetzels, Borsboom, and van der Maas (2011) make of Bayesian statistics in which the probability of psi is given as 10^{-20}. In context, this means that at the same time that evidence is demanded for the validity of psi, that evidence is invalidated a priori (for a rebuttal to Wagenmakers et al., see Bem, Utts, & Johnson, 2011). Even Humphrey (1995:75) does not buy the goods offered by Wagenmakers and coauthors:

> It is important, however, that we play this fairly and do not load the dice against the paranormal . . . we must be careful not to prejudge the issue of 'fishiness' [or experimental or statistical competence, I may add] by presuming that the very fact that a paranormal phenomenon would contravene normal laws is proof that it cannot have occurred.

With regard to proponents of psi, although I do believe that there are such things as decline and experimenter effects (Irwin & Watt, 2007), I am sympathetic to the argument of some critics that research in psi is sometimes interpreted as supportive for it no matter what the actual results are. They

complain, for instance, that fishing expeditions for anomalies in data are typically launched, rather than considering that some studies may just not show evidence of psi phenomena (Alcock, 2003). However, failures to replicate in parapsychology, especially considering the very low statistical power of most projects, is not egregiously damning considering that accepted phenomena in mainstream psychology and other disciplines also show a far-from-perfect replication record (see Bem, 2011, for a discussion and references on this issue).

The "skeptic" also uses other exceptions to scientific practice, such as the unfalsifiable critique that if the only alternative to a psi experiment is fraud then it should be presumed (cf. Truzzi, 1978). Holding this belief consistently would of course pretty much eliminate all of science since only the experimenter him/herself (presuming that there was no self-deception) could be certain of the nature of the experiment. As a final example, we have the ever-changing goalpost for what counts as "enough" evidence for psi phenomena. Where once it was assumed that there was no scientific evidence for psi phenomena, once evidence started accumulating under demanding research conditions the goalposts moved such that "the [evidential] standards of any other area of science" (Wiseman, in Penman, 2008) do not apply to psi. This opinion has the "advantage" of being so unclear that a "skeptic" could always retort that no matter what data were proffered they would not be enough to satisfy this fictitious requirement. I have yet to find in the writings of Roger and Francis Bacon, Galileo, and other developers of the scientific method the principle that evidential standards vary according to the topic investigated.

From *The Secret* type of New Age theories, one also encounters a variety of contradictory and unclear statements, including a different form of unfalsifiable reasoning: If people want something hard enough, they will get it. If they do not, well, it is because they consciously or unconsciously did not want it enough.

I will now leave the "skeptics" to their certainty and give some words to the humbler open perspective of William James. He wrote that (1956/1897:ix): "There is no possible point of view from which the world can appear an absolutely single fact." The courage to assume that one's perspective is not likely to explain all observations also underlies Henry Sidgwick's idea of the *tertium quid,* or the residue of unexplained phenomena in different areas of enquiry (Gauld, 1968; see also James's "unclassified residuum", 1956). Yes, many reputed psi phenomena can be explained by failures in reasoning, perception, memory, or fraud, yet there have always been observations and experiment results that could not be so explained and for which at this point we have the right to hold psi as a valid explanation. Furthermore, the cognitive and emotional ability to tolerate ambiguity, remain open to other possibilities, and attend to the "unclassified residuum" can stimulate new forms of expression, ideas, and discoveries in both the arts and science (cf. Koestler, 1964).

To come back to the wolverine at the beginning of this article, he is not only a ferocious, deadly creature or a playful guy, but both and much more. To reduce him to either a "red of fang and claw" or a cute Disney creature fails to approach him in all his complexity. As both some spiritual and phenomenological (Braud, 2011), and scientific (cf. Keller, 1983) traditions maintain, the cognitive and emotional openness to encounter phenomena as they are may reveal more of reality than the imposition of a priori models. To understand wolverines, and the world in general, we should reject self-indulgent epistemological totalitarianism and let ourselves be seduced by the melancholy whisper of uncertainty.

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LETTER TO THE EDITOR

No Debate Needed on the Extraterrestrial Explanation

Reporter Leslie Kean wants "a legitimate policy debate" about UFOs (Billy Cox's book review of Leslie Kean's *UFOs: Generals, Pilots, and Government Officials Go on the Record*, in *JSE 24*(4), p. 723, Winter, 2010).

When sightings were an everyday occurrence many years ago, I had dinner in Albuquerque with the only scientist to be paid by his government to investigate UFOs. His investigations were almost over at the time, but he had "a few little questions" to resolve. He was going on to Roswell, New Mexico, the next day. We were in agreement as follows:

1. Much of the controversy has been fed by the U.S. policy of "classified information" on secret aircraft built largely at Roswell during the Cold War.
2. Both the U.S. and Russia had powered unmanned aircraft on test flights which were widely observed.
3. These aircraft could perform maneuvers that would kill a pilot.
4. There are enough of these aircraft to explain UFOs without resorting to the extraterrestrial possibilities. Do we need more talk?

There is a continuing story on the move from the city of Roswell of the U.S. new weapons facility to a base farther in the desert.

Keep up the good work.
May your negentropy ever increase.

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ESSAY REVIEW

Know Your Numbers—At Your Peril

Prescribing by Numbers: Drugs and the Definition of Disease by Jeremy A. Greene. Johns Hopkins University Press, 2008. 318 pp. $53 (hardcover), $25 (paperback), $15 (Kindle). ISBN 9780801891007.

Selling Sickness[1] describes how drug companies have expanded their markets by defining as diseases some perfectly normal physiological conditions, chiefly those that accompany healthy aging. *Prescribing by Numbers* elucidates the context in which this could happen. The book is enormously informative, illustrating the ability that good historians display to command a huge array of sources. Greene, an M.D. as well as a medical historian, strives rather successfully to do the historian's job, namely to remain descriptive and not judgmental; but he shrugs off that onus in the concluding chapter.

Medical practice since about the middle of the 20th century has become increasingly "science"-based, relying on laboratory tests, statistics, and epidemiology to guide medical practices, to the increasing exclusion of diagnosis and treatment guided by an individual's manifest symptoms. This has allowed drug companies to obtain approval for medications on the basis of clinical trials in which laboratory tests serve as surrogate markers for diseases. But the measured variables—blood pressure, cholesterol level, PSA, etc.—are not yes-or-no markers of pathological conditions, so decisions have to be made about what numbers represent the difference between normal or healthy on the one hand and on the other hand diseased, pathological. Those decisions are made by experts, people involved in pertinent research, which entails ties to drug companies that support the research and the clinical trials. It has followed rather predictably that the thresholds between normal and pathological have seen a steady progression toward including in the "pathological" category larger and larger proportions of the population, who are consuming routinely an ever-increasing range of drugs as preventive measures and not as treatment for any actual manifest illness. Perfectly healthy people are taking in many substances designed to lower perceived statistical risks, with little if any regard for the risks of "side" effects stemming from long-term consumption of physiologically active chemicals foreign to the human body. Natural and chronic conditions of aging have become viewed as preventable diseases. In effect, we are being persuaded that the human body is inherently diseased (p. 217). Some people

may perhaps benefit, while others are certainly and needlessly damaged.

Instead of relying on how we actually feel, we are urged to "know our numbers"—blood sugar, PSA, blood pressure, cholesterol, etc. Not unexpectedly, people recently diagnosed with too-high numbers are quite likely to develop psychosomatic symptoms.[2] Direct-to-consumer advertising defines drug-centered diseases—erectile dysfunction, low testosterone, premenstrual dysphoric disorder—and pressures medical practice to conform to marketing—"Ask your doctor." Results of clinical trials are featured on front pages of newspapers and in business sections of web and print media (p. 124). Thereby, the role of physicians differs from the earlier time when it was they who informed the general public about everything to do with illness and treatment (p. 124 ff.).

A grave deficiency in the whole system is the failure of clinical trials to assess the only important point, namely, the effect of any given treatment on all-cause mortality, or the *absolute* reduction in risk rather than the relative reduction typically evaluated: after all, there is little benefit in preventing a possible stroke if one dies of cancer at the same age as the stroke would have been predicted (on average) to occur. The latter point is emphasized with specific examples in Joel Kauffman's *Malignant Medical Myths*.[3]

Greene tells this complex tale through the stories of three drugs that were principal players in the evolution of current medical practice and drug marketing.

The first is Diuril, introduced in 1958, a palatable diuretic capable of lowering blood pressure. Earlier, the routine measuring of blood pressure had been made possible by invention of non-invasive methods. Thereupon data accumulated, and insurance companies perceived a correlation between pressure and heart disease. That constituted a financial risk factor in life insurance, and companies began to require blood-pressure measurements and to refuse coverage to individuals with high readings (p. 55). Annual physical examinations became routine, and the financial insurance risk associated with high blood pressure came to be seen also as an individual health risk. This made it worthwhile for drug companies to seek a treatment to lower pressure, and then to instruct doctors that pressure-lowering is desirable for people in general. Diuril was brought to market "amid a dazzle of research symposia, journal advertising, and record prescription rates" (p. 21).

In the first half of the 20th century, pharmacies had actually "compounded" prescriptions from individual generic components supplied by pharmaceutical manufacturers.[4] Diuril was in at the beginning of the change from that practice, in which the various manufacturers supplied standard chemicals, to the current circumstances of prepackaged medications brand-named and competing with one another.[5] This brought with it also a different approach to research: from

seeking substantively new treatments to focusing on marketing strategies with a host of "me-too" drugs competing for the same consumers. It seems as if in another world that less than a century ago "drug marketing textbooks stressed the importance of satisfying the 'ethical demands' of the AMA" (p. 37). Instead of direct-to-consumer advertising, marketing in those days concentrated on advertisements in medical journals and direct approaches to physicians. Merck's creative selling of Diuril also pioneered the now-standard practice of flooding physicians with little gifts, in that case small statuettes of the Diuril Man as paperweights whose transparent figurines displayed the organs that Diuril acted on. Greene points out that this "unidirectional gift economy," too trivial to count as bribery, has the profound effect of creating a relationship between the physician and the company and its sales people.

Diuril marked the transformation of a normal, symptom-free, degenerative condition of aging, increasing blood pressure, into a treatable "risk" category. The medical community did not capitulate immediately to this development. For a decade or more, some cardiologists described it as "a huge uncontrolled clinical–pharmacological experiment . . . masquerading as a clinically acceptable therapy" (p. 53) and resisted the notion of defining a disease purely in terms of a numerical threshold (p. 67 ff.); moreover, the unpredictable course of asymptomatic "hypertension" and the variability of treatment outcomes made it impossible to conduct meaningful trials against untreated controls (p. 72). Even earlier, the highly plausible point had been made that the universally observed increase in pressure with age could be compensating for other physical accompaniments of aging. As we know now, all those reservations eventually went by the board. Further, over the years the threshold pressure for defining and treating "hypertension" was progressively lowered (pp. 77–78).

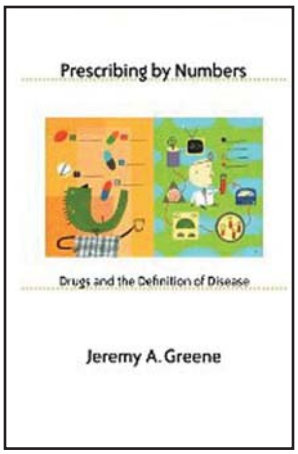
Greene's second case study, of Orinase and diabetes, offers salient points that parallel those of the Diuril story. There was a dazzle of activities at the public launch of the drug. Symptomatic adult-onset diabetes was expanded to include symptom-free Diabetes II defined in terms of blood-sugar level. That level can be assessed in a number of ways—average over some period of time, or maximum at any time, or measured after fasting or after stress—and this allowed progressive changes in recommended treatment, always in the direction of calling for increased prescribing of medications—but only once Orinase, an oral pill, had become available; the earlier treatment, by frequent insulin injection, could hardly be marketed effectively to people who felt no symptoms of illness.

The initial application for approval had been enormously more massive than with Diuril: >10,000 pages in 23 volumes, needed because Orinase produces so small an effect, which could only be discerned by lab tests since there were no symptoms before or after "treatment." Marketing properly emphasized that

Orinase worked differently than insulin, was not an oral insulin, and did not help all diabetics. On the other hand, by defining symptom-free diabetes in terms of blood sugar, it became possible to postulate the existence of "hidden diabetics," and surveys indicated that there were millions of undetected diabetics who were ideal candidates for Orinase since they had only the asymptomatic, mild, adult-onset form of diabetes for which this drug was effective. Whereas significant sugar in urine is a definite indication of dysfunction, that is not correlated with any definite level of blood sugar. Once blood-sugar measurement became standard, the threshold for beginning "treatment" could be progressively changed as new categories were suggested of people at risk for diabetes: borderline hyperglycemic, protodiabetic, chemical diabetic, latent diabetic, stress diabetic, prediabetic—all potential consumers of Orinase (p. 106). The market expanded from an estimated 1.6 million "hidden" diabetics to perhaps 5 million prediabetics.

Controversy followed a large clinical trial of Orinase in asymptomatic prediabetics when, after half-a-dozen years, mortality in the treated group rose sharply above that in the control group (p. 119 ff.). An NIH doctor estimated that oral hypoglycemic medications were responsible for 10,000–15,000 unnecessary deaths annually (p. 133). This was grist for malpractice suits, which had become increasingly common in the 1970s; the question became critical, to what extent physicians should be deterred by cautions about side effects in drug-package inserts (p. 135)? In particular, when the treatment is solely to accomplish a presumed reduction of risk, not to deal with actually present illness? Greene points out that the purportedly preventive treatment of prediabetes, prehypertension, and the like has become so routine that if even one of those regimens were to be thoroughly discredited, it would threaten "the entire edifice of medical knowledge and . . . trust in the doctor–patient relationship"; wherefore there is enormous inertia in current practice against acknowledging that any of these preventive treatments could do more harm than good (p. 146).

Cholesterol and Mevacor is the third of Greene's case studies. The mindset that could assign cholesterol a causative role in heart disease owed something conceptually to the 19th-century discovery that germs cause infectious diseases, that specific substances cause particular vitamin deficiencies, and that toxic agents can cause specific illnesses. These relationships were extrapolated, no doubt subliminally, to the concept that specific things might be identifiable as causing chronic (but natural) conditions associated with aging; so an apparent correlation of cholesterol levels with heart disease stimulated a search for substances that could lower cholesterol. The first such drug to be marketed, MER/29, was launched with the now-typical dazzle and ballyhoo, but it turned out to have unacceptable side effects, was withdrawn from the market, and



the company (Merrell) suffered heavy losses from settling lawsuits—a whistleblower revealed that Merrell had falsified safety and efficacy data in its application for approval of the drug (p. 162). Subsequent clinical trials of dietary changes, and of a consumable resin that reduced blood-cholesterol levels, did not establish a statistically significant decrease in mortality as a result of lowering cholesterol. Nevertheless, the National Heart, Blood, and Lung Institute held a "Consensus Conference" that excluded skeptics (p. 171), and a full-fledged propaganda campaign for reducing cholesterol levels was launched by establishing the National Cholesterol Education Program which pulled out all PR stops and covered all PR bases (pp. 168–177). It is as well to remember that "education" is a misleading euphemism for "propaganda" in a large range of ventures by governments and not-for-profit organizations that are often funded by for-profit entities.

It does little good to urge lowering cholesterol if lifestyle and diet are the only means to do so, and it was the introduction of Merck's statin (lovastatin, Mevacor), soon followed by simvastatin (Zocor) and pravastatin (Pravachol, from Bristol Myers Squibb) that made possible the current obsession with lowering cholesterol and the corollary ubiquitous consumption of statins. The publicity to "Know Your Numbers" had the predictable side effect that people who discovered that their cholesterol was "high" often experienced nocebo and began to feel ill (p. 192; footnote 6 cites several sources)[6]. To persuade people who did not feel ill that they should take a drug, comparison was made with HIV and AIDS, where symptoms followed infection only after a number of years (p. 200). Over the years, the "desirable" level for cholesterol has been continually reduced, just as with HIV/AIDS the CD4 level at which antiretroviral drugs should begin has been progressively raised. By 2001, more than 10% of the US population qualified for statin use; it was even suggested that Mevacor be made available as an over-the-counter (OTC) drug (pp. 211, 218).

In 2003, the *British Medical Journal* topped that suggestion handsomely (p. 221 ff.) with articles[7] proposing that every adult over 55 should, without prescription or prior medical examination, take lifelong a "Polypill" (for which a patent application had already been lodged) that would contain a statin, aspirin, folic acid, and three blood-pressure-lowering drugs, to supposedly reduce strokes by 80% and coronary events by 88%. This was called the most important medical news in half a century,[8] endorsed enthusiastically by a director of a Clinical Trials Research Unit[9]. I recommend the Rapid Responses to those

articles as illuminating and depressing reading for anyone who can access them: Most correspondents offered constructive suggestions for improving the Polypill, only about 1 in 6 of the Responses recognized the idea as ludicrous.

Informative as the book is, I venture some slight caveats. The text is overly sociological in jargon. Too, no one can be familiar with the literature on every topic, and Greene shows himself ignorant about HIV/AIDS when he describes antiretroviral drugs as "safe and effective . . . means of management" (p. 226). A serious substantive deficiency is that although Greene identifies "risk reduction" as the paradigm that has come to dominate medicine, he fails to emphasize that it is actually the reduction of risk *factors*, which represent correlations and not causation; it is symptoms that are being treated, not the sources of those symptoms. Greene also neglects to remark that recommended reductions in blood pressure and cholesterol level are made as though the same levels were somehow pathological or undesirable irrespective of age, when in fact both rise naturally with age, and plausibly for good reason. Greene does point out, however, that treating symptoms and not causes, on the basis of quantitative measures, was already practiced in the 19th century after temperature measurements became common, and drugs were prescribed to bring down fever when doing so was not necessarily a good thing since it might hinder the body's fight against the actual illness.

For the future, it ought to be kept in mind that the risk of mortality increases with age, and that innumerable physiological reactions and quantitative measures also change with age. Therefore the greatest degree of skepticism and demand for overwhelming proof ought to be directed at any claim of a causative role for anything to do with age-related changes that we don't happen to like and that are declared to be pathological just on that account.

Greene seeks to underscore "the fundamental political, economic, ethical, and moral contradictions within American understandings of health that pharmaceuticals bring into sharp relief" (p. 14). He points out in several places that no single actor or group of actors can be held responsible for unsatisfactory, illogical, unproven present-day medical practices. Rather, present circumstances are "overdetermined by some combination" (p. 17) of researchers, regulators, consumer advocacy groups, community activists, charitable foundations, drug companies, physicians and their professional associations, and notably insurance companies, which have all contributed in some fashion to the fact that prescription drugs are the fastest-growing part of health costs; in 2003, Americans aged ≥65 consumed an average of 25 prescription medications each. Many of these highly medicated individuals are subjectively healthy, taking drugs only as preventives.

No conspiracy, no dastardly effect of conflicts of interest is to blame; it is the conventional wisdom, the widely accepted notion of what constitutes good

medical science, the concept that it is beneficial to lower apparent risk levels further and further (p. 190). Conflicts of interest are only a part of that whole, and accepted as normal—it is virtually universally the case that academic researchers are at the same time consultants with drug companies and advisers to regulating agencies. The crucial role of clinical trials in establishing a new drug's credentials led, since about the 1970s, to the development of a new industry, Contract Research Organizations (CROs); paid by drug companies to conduct trials, CROs have a vested interest in getting results desired by their clients (p. 203 ff.). The "influence of the pharmaceutical industry now permeates the global economy of medical knowledge" (p. 232), and Greene states that the public good will be served only if the public invests in it and sets the priorities under non-commercial criteria (pp. 238–239). Marcia Angell, former editor of the *New England Journal of Medicine*, has also called for a publicly funded, disinterested way of assessing drugs.[10]

That no single influence or agent brought about the present circumstances does not entail, however, that a single action could not change current practices quite significantly. My suggestion would be that the Food and Drug Administration require all clinical trials to be evaluated only in terms of absolute risk reduction or effect on all-cause mortality, and that the statistical evaluation be carried out by Bayesian rather than frequentist approaches.[11] In one fell swoop, this would prevent approval of drugs that have to be withdrawn within months or a few years of their introduction into general use, which has become all too common in the last decade or two; and it would cut heavily into the consumption of blood thinners, blood-pressure reducers, and cholesterol-lowerers.

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Notes

[1] Ray Moynihan & Alan Cassels, *Selling Sickness*, New York: Nation Books, 2000; see review in *Journal of Scientific Exploration*, *24* (2010), 515–520.

[2] For this noteworthy assertion, Greene cites E. O. Wheeler & C. R. Williamson, "Heart scare, heart surveys, and iatrogenic heart disease", *JAMA, 167* (1958), 1096–1102; Arthur Barsky, *Worried Sick*, Little, Brown, 1988; Dorothy Nelkin & Laurence Tancredi, *Dangerous Diagnostics*, New York: Basic Books, 1989; Robert Croyle (Ed.), *Psychosocial Effects of Screening for Disease Prevention and Detection*, Oxford University Press, 1995.

[3] Joel M. Kauffman, *Malignant Medical Myths*, West Conshohocken, PA: Infinity Publishing, 2006; see review in *Journal of Scientific Exploration, 20* (2006), 622–629.

[4] The training and licensing of pharmacists is now anachronistic, suited to people competent to compound prescriptions even though pharmacists nowadays do little but count out pills.

[5] Fifty years later, the rate of prescription of Diuril and similar thiazide diuretics has fallen dramatically, even though their efficacy exceeds that of more recent and more heavily advertised and much more expensive drugs (p. 49).

[6] Told their cholesterol is high, some people develop shortness of breath, dizziness, or chest pain in absence of discernible physiological cause: A. S. Brett, *American Journal of Medicine, 91* (1991), 642–647; R. C. LeFebvre, K. G. Hursey, & R. A. Carleton, *Archives of Internal Medicine, 148* (1988), 1993–1997; T. Tijmstra, *International Journal of Risk and Safety in Medicine, 1* (1990), 29–44.

[7] N. J. Wald & M. R. Law, *BMJ, 326* (2003), 1419–1425; M. R. Law, N. J. Wald, & A. R. Rudnicka, *ibid*., 1423–1430; M. R. Law, N. J. Wald, J. K. Morris, & R. E. Jordan, *ibid*., 1427–1435.

[8] "Editor's choice: The most important *BMJ* for 50 years?", *BMJ, 326,* 28 June 2003.

[9] Anthony Rodgers, *BMJ, 326* (2003), 1407–1428.

[10] Marcia Angell, *The Truth about the Drug Companies: How They Deceive Us and What To Do about It*, New York: Random House, 2004.

[11] For the importance of that change, see R. A. J. Matthews, "Facts versus Factions: The use and abuse of subjectivity in scientific research," *European Science and Environment Forum Working Paper*, 1998, reprinted in J. Morris (Ed.), *Rethinking Risk and the Precautionary Principle*, Butterworth-Heinemann, 2000, pp. 247–282.

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ESSAY REVIEW

On Doubles and Excursions from the Physical Body, 1876–1956

"On the Trans-Corporeal Action of Spirit" by William Stainton Moses (under the pseudonym M. A. Oxon). *Human Nature, 10,* 1876, 97–125, 145–157.

Posthumous Humanity: A Study of Phantoms by Adolphe D'Assier. London: George Redway, 1887. 360 pp. [Reprinted by Wizards Bookshelf (San Diego) in 1981]. Free online at http://www.archive.org/details/posthumoushuman00olcogoog

Le Fantôme des Vivants: Anatomie et Physiologie de l'Ame: Recherches Expérimentales sur le Dédoublement des Corps de l'Homme [The Phantom of the Living: Anatomy and Physiology of the Soul: Experimental Researches on the Doubling of Man's Body] by Hector Durville. Paris: Librairie du Magnétisme, 1909. 356 pp.

The Case for Astral Projection by Sylvan J. Muldoon. Chicago: Ariel Press, 1936. 173 pp. [Reprinted by Kessinger in 2004]

Les Phénomènes de Bilocation [The Phenomena of Bilocation] by Ernesto Bozzano. Paris: Jean Meyer, 1937. 187 pp. [Reprinted by JMG Editions in 2006]

The Phenomena of Astral Projection by Sylvan J. Muldoon and Hereward Carrington. London: Rider, 1951. 222 pp. [Reprinted by Samuel Weiser in 1981]

"ESP Projection: Spontaneous Cases and the Experimental Method" by Hornell Hart. *Journal of the American Society for Psychical Research, 48,* 1954, 121–146.

"Six Theories about Apparitions" by Hornell Hart et al. *Proceedings of the Society for Psychical Research, 50,* 1956, 153–239.

This Essay Review is about the ideas of a group of authors who contributed to constructing and maintaining the concept that some principle inherent in human beings was capable of leaving the physical body, and thus accounted for phenomena such as apparitions of the living and what later came to be called out-of-body and near-death experiences (OBEs and NDEs). The authors in

question believed the phenomena were explained by the projection of a spirit, or some sort of subtle body sometimes referred to as a "double," from the physical body. In fact, such ideas of subtle bodies come from ancient times (Mead, 1919, Poortman, 1954/1978) and were widely discussed in the past by many writers (e.g., Jung-Stilling, 1808/1851), including those representing theosophy (e.g., Besant, 1896). But there have been others, such as prominent members of the Society for Psychical Research (Gurney, Myers & Podmore, 1886, Myers, 1903), who have not conceptualized OBEs and apparitions of the living as produced by the projection of a subtle body.

Referring to the implications of excursions of consciousness for the issue of survival of bodily death, German philosopher Carl du Prel (1839–1899) argued that the astral body could "exist independently of the material body and be separated from it, in other words it is immortal. . . ." (du Prel, 1899/1907(1):186). The authors reviewed in this essay believed that OBEs supported belief in survival of death, something accepted as well by many others (e.g., Mattiesen, 1931, Myers, 1903). These ideas have been included in popular books published in relatively modern times, such as *The Mystery of the Human Double* (Shirley, n.d.), and *The Enigma of Out-of-Body Travel* (Smith, 1965), among others (e.g., Battersby, n.d., Pilloni, 1978). All of this is part of the conceptual history of OBEs, a topic that has received some attention as seen in my writings (Alvarado, 1989, 2005, 2009b, 2009c) and those of others (Crookall, 1961, Appendix 1, Deveney, 1997).

In this Essay Review I will comment on three articles and five books published between 1876 and 1956 whose authors have postulated that something leaves the body in an OBE, as opposed to the ideas of those who have theorized that the experience is hallucinatory, even if accompanied by veridical perceptions (Alvarado, 2009a). I am not including in the Review writings based on the repeated OBEs of single individuals (e.g., Muldoon & Carrington, 1929), nor on single accounts of NDEs (Wiltse, 1889), literatures that deserve to be separately reviewed.

William Stainton Moses

William Stainton Moses (1839–1892) was a clergyman, as well as an influential English spiritualist and medium. He wrote about many aspects of spiritualism and psychic phenomena, among them the identity of mediumistic communicators and direct writing (Moses, 1879, 1882). In one of his private notebooks he recorded an interesting OBE he had in January of 1874 while he was writing (Myers, 1895:36–37).

His article "On the Trans-Corporeal Action of Spirit," published in the English journal *Human Nature* in 1876, is one of those nineteenth-century forgotten discussions on the topics of apparitions of the living and OBEs. Like

other writers discussed here, Moses considered cases that did not involve recollection of being out of the body while the person in question was seen as an apparition. Moses wrote:

William Stainton Moses

> The testimony of all sensitives, psychics, or mediums, i.e. persons in whom the spirit is not so closely bound to the body as in the majority of individuals, agrees in the consciousness they all have of standing in places, and observing people, and scenes from a spot removed from that which they know their bodies to be. Whilst employed in some occupation compatible with quietness and passivity, e.g., reading, meditating, or quiet conversation, they feel frequently a strange second consciousness, as though the *ego* had moved away through space and were busied with other scenes. (p. 102)

Moses classified the cases he discussed in two groups. The first were those cases happening spontaneously: (1) seeing oneself (later called autoscopy) and unconscious apparitions of the living; (2) apparitions apparently providing warnings of an oncoming death; (3) apparitions taking place when the physical body was not in movement or was in some other state (including mediumistic materializations), and (4) apparitions showing consciousness and those apparently without consciousness while the person seen was experiencing anxiety.

The second group discussed by Moses was what he considered to be phenomena connected to some form of volition. This group consisted of cases having a strong emotional content (such as apparitions of the dying), and those seemingly dependent on the will of the person represented by the apparition.

Adolphe D'Assier

The topic of a double with physical properties was the main concept discussed by Adolphe D'Assier (1827–1889), once member of the Académie des Sciences de Bordeaux, and known for his writings about matters such as grammar and language (e.g., D'Assier, 1861). His book *Posthumous Humanity: A Study of Phantoms* (1887) was translated from the original

French edition *Essai sur l'Humanité Posthume et le Spiritisme* (1883).

In the book, D'Assier speculated on the posthumous personality as manifesting with phenomena such as apparitions, and argued that during life there was a principle that could leave the body and that could continue after physical death. Some cases of doubling during life, the author argued, were remembered by the experiencer, but others were forgotten.

D'Assier speculated about this principle, which he believed had physical properties. He wrote:

> The child who comes out of the body of its mother is attached to her by a vascular system which brought it strength and life. It is the same in this doubling; the human phantom is constantly in immediate relation with the body whence it has wandered for some moments. Invisible bonds, and of a vascular nature, so intimately connect the two extremities of the chain, that any accident happening to one of the two poles reacts (*se répercute*) instantaneously upon the other (p. 51) . . . . The phantom possesses a circulatory apparatus as well as the body of which it is the double. Invisible capillaries unite the one to the other, and the whole forms a system so homogeneous, so closely connected, that the slightest prick received by the phantom at once reacts . . . on all the vascular apparatus up to the extremity of the chain, and blood flows immediately. . . . (p. 57)

Like Moses, D'Assier presented many cases of apparitions in his book. In his view, the phenomenon of duplication "is observed only in some organizations exceptionally gifted in the matter of sensitiveness; and this explains its extreme rarity" (p. 250). The posthumous apparition, he believed, was the same entity manifested in doublings and apparitions of the living:

> The living spectre and the spectre from beyond the tomb, having the same origin, can present in their manifestation the same common characteristics. Such are the noises that occur in certain habitations, where the chairs, furniture, crockery, &c., are seen to change place or to shake under the impulse of an invisible hand. (p. 256)

Hector Durville

Hector Durville (1849–1923) was a well-known French student of magnetism and psychic phenomena. He founded the Société de Magnétisme de France and defended the existence of a magnetic force that could cause healing and other phenomena, a topic he discussed in his two-volume work *Traité Expérimentale de Magnétisme* (1895–1896). In the book reviewed here, *Le Fantôme des Vivants* (1909), Durville focused on the projection of phantoms of the living, or what he termed doubling.

The first part of the book was about the history and conceptual aspects

of the topic. This included the idea of subtle bodies and their manifestations. The latter part consisted of OBEs as well as apparitions of the living with and without the consciousness of the person represented by the apparition. Durville concluded the section stating:

> The physical body is seen at the place that it really occupies; and at the same moment its phantom is seen at a distance. . . . The sensations felt by the phantom are reflected on the physical [body]. . . . The physical [body] is never in its normal state during doubling. The mystics are always in ecstasy; the sorcerers and nearly all the common people are more or less profoundly asleep, the mediums are in trance, the somnambules in a state of magnetic somnambulism and the dying delirious or in syncope . . . . Some of the doubled recollect perfectly everything that was seen, said, or that took place . . . ; others remember vaguely . . . , most others do not keep any recollection. . . .
>
> (pp. 136–138; this and other translations are mine)

Durville believed that doubling showed that the thinking principle could leave the physical body while the person was alive and that this double could perceive and sometimes act on the environment, an idea consistent with the beliefs of other individuals mentioned in this Essay Review.

In the second part of the book, Durville reported tests he conducted to study intentionally projected phantoms of the living. In this work Durville followed on the previous investigations of Albert de Rochas (1837–1914), a pioneer in the laboratory study of phantoms of the living (de Rochas, 1895) and of the exteriorization of sensibility, a topic I have discussed before in the *JSE* (Alvarado, 2011a). Durville worked with several ladies whom he magnetized repeatedly, asking them to project their phantom in order to explore its perceptual and motor capabilities. He said very little about his participants but they were obviously sensitive to magnetization (or suggestion). One of the ladies in question, Mme. Lambert, was also studied by de Rochas. She was later described as a medium who had physical phenomena at home as well as in the séance room (Lefranc, 1911a).

Durville wrote that he considered the exteriorization of sensibility and doubling to be similar. The first was a state in which the sensibility was believed to radiate around the person, while the second was a state in which the sensibility was contained in the phantom. Durville wrote:

> We have seen that the subjects submitted to the action of magnetism . . . exteriorize . . . , all of them keep their usual state of consciousness, their sensibility which had disappeared at the beginning of somnambulism . . . radiates now around them, up to a distance that may reach a distance 2 m. 50 and even 3 meters. At some moment . . . such ***sensibility***, which all the subjects see in the form of vapour, a whitish fluid, gray or grayish, sometimes with light iri-

> descent shades, is condensed and localized on each side of them, at a distance that may vary from 20 centimeters . . . to 80 centimeters. . . . (p. 178)

Several chapters contain descriptions of such aspects as the appearance of the phantom, its perceptual capabilities, influences on other persons, and physical effects presumably produced by it. The point of the studies was to obtain evidence that perceptions and physical effects could take place from a location distant from the physical body of the projected persons, at the place where the phantom was supposed to be. Because some aspects of Durville's reports have been published in English in the *Annals of Psychical Science* (Durville, 1908a, 1908b), I will cite some descriptions from one of them to take advantage of the translations.

Some tests were performed to test for vision. In Durville's words:

> The projected double can see, but rather confusedly, from one room into another. While I was at the end of my study with Edmée, whose double was projected, I asked three of the witnesses of the experiment . . . to go into the lecture room of the society and perform some simple and easily described movements, so that we could ascertain whether the double, which I would send there, could see anything. Dr. Pau de Saint-Martin stood near the window, between my study and the hall where the witnesses were, in order to see almost at the same time both the subject and what these experimenters were doing.
>
> *First Experiment.* — Mme. Fournier seated herself on the table. 'I see,' said the subject, 'Mme. Fournier seated on the table.'
>
> *Second Experiment.* — The three persons walked into the room and gesticulated. 'They walk and make gestures with their hands; I do not know what it means.'
>
> *Third Experiment.* — Mme. Stahl took a pamphlet from the table and handed it to Mme. Fournier. 'The two ladies are reading,' said the subject.
>
> *Fourth Experiment.* — The three persons joined hands, formed a chain and walked round the table. 'How funny!' said the subject; 'they are dancing round the table like three lunatics.' (Durville, 1908a:338)

Durville believed that the phantom emanated N-rays, a controversial form of radiation prominent during the first decade of the twentieth century that was eventually dismissed by the scientific community as being due to artifactual observations (Ashmore, 1993, Nye, 1980). To detect the projected phantom, he used screens covered with calcium sulphide, a substance believed to produce brightness in contact with the rays. Durville wrote as follows:

> The double of the subject having been projected, I took the three screens and showed them to the witnesses, who observed that they were completely dark. Laying the small screen aside for a moment, I placed one of the large

ones on the abdomen of the subject and held the other in the phantom, which was seated on an armchair to the left of the subject.

The screen placed in the phantom became rapidly illuminated, and the one on the subject remained completely dark. After several minutes I took both screens and showed them to the witnesses, who were much astonished by the phenomenon. I then took the screen which had been on the subject, and remained dark, and placed it in the phantom. It immediately became illuminated like the first. I again showed them to the witnesses, who saw that they were sufficiently illuminated to allow them easily to count the spots of sulphide of calcium at a distance of a yard.

Phantom

I then took the small screen which had not been used, and placed it on the abdomen of the subject for two or three minutes without obtaining the slightest trace of luminosity. I then placed it in the phantom, and it became very strongly illuminated. The witnesses found that it gave enough light to enable one of them to tell the time by a watch.

These experiments, repeated about ten times with seven or eight different subjects, always gave similar results, which were very intense when the screens had been well exposed to the sun, less so when the exposure had been insufficient. (Durville, 1908a:341)

The double was said to be able to produce raps and movement of objects, which was taken by Durville to indicate its objective nature. This body, Durville wrote in his book, carried the "very principle of life, as well as will, intelligence, memory, consciousness, the physical senses, while the physical body does not have any faculty" (p. 354). This suggests that the subject's awareness was out of the body, something that is not always clear throughout the experiments reported in the book.

The tests reported by Durville represent a historically important attempt to empirically study the topic through the induction of experiences. This is a break with the rest of the work discussed in this Essay Review, which depended on the collection and interpretation of cases. The book was repeatedly cited by later writers on the topic such as the following ones mentioned below. Some aspects of his work were replicated and extended, but the reports have fewer methodological details than Durville's (e.g., Lefranc, 1911b).

Ernesto Bozzano

Italian psychical researcher Ernesto Bozzano (1862–1943) was well-known for his publications presenting many cases of psychic phenomena from the international literature on the subject, for his classifications of phenomena,

Ernesto Bozzano

and for his ardent defenses of survival of bodily death. Such work was evident in his discussions of phenomena related to death, such as deathbed visions, the hearing of music, and the perception of physical phenomena related to a distant death (Bozzano, 1923). Bozzano discussed the topic under the name of "bilocation," a term he used to group a variety of phenomena he explained using the concept of a subtle body (Alvarado, 2005). He first wrote in detail about the topic in a paper (Bozzano, 1911), and expanded this article into a short book published in Italian (Bozzano, 1934). I am commenting here on the French translation of this book, *Les Phénomènes de Bilocation*, published in 1937.

This study consisted of the compilation and interpretation of published cases. Bozzano discussed: (1) the phantom limb sensation of amputees and the "doubling" sensations of the body of hemiplegics; (2) apparitions of the self, or autoscopy; (3) cases of apparitions perceived by another person (such as those manifestations seen apparently coming out of the body of dying persons); and (4) a variety of cases difficult to classify as those of doubling or of telepathy, including many apparitions of the living.

In some cases, Bozzano noticed, "the personal consciousness is transferred to the phantom" (p. 41). He believed consciousness was in the etheric body, which he referred to as "the supreme, immaterial envelope of the discarnate spirit" (p. 8). But many cases discussed by him did not involve the *experience* of being out of the body.

In the book Bozzano mentioned twenty published cases of individuals who found themselves out of their physical body in a variety of circumstances. These were taken from published discussions of psychic phenomena. Bozzano noticed that these cases rarely happened when the person was in their waking state. Many of the cases he presented happened "during absolute rest of the body" (p. 41). Five of them took place when the person was under the effects of anesthesia, while the rest were experiences that took place during illness (2 cases), hypnosis (2 cases), and one each in the following circumstances: exhaustion and stress, being shot, giving birth, under depression, during asphyxia, smoke inhalation, coma, a fall, sleep, during automatic writing, and falling asleep.

Bozzano considered veridical perceptions during the experience to be very important. These cases suggested to him that the phenomenon was not

hallucinatory. Similarly, Bozzano placed great importance on those perceptions of deathbed observers in which mists or lights were seen emanating from the dying person, phenomena that are not frequently discussed today (for an exception see Alvarado, 2006b). In his view, these cases indicated an initial stage of doubling representing the beginnings of death. This was conceptualized as the separation of a fluidic matter from the body that showed fluctuations due to changes in the vitality of the dying person, ending with the formation of an etheric body.

For Bozzano, when all the phenomena he mentioned in his book were considered together they showed the existence of an etheric body capable of leaving the body. Furthermore, he believed that such etheric body implicated the existence of an etheric brain through which a spirit manifested. In his view bilocation demonstrated survival of bodily death.

Sylvan J. Muldoon and Hereward Carrington

Sylvan Muldoon (1903–1969) became known for his classic book written with psychical researcher Hereward Carrington (1880–1958), *The Projection of the Astral Body* (Muldoon & Carrington, 1929). In this book Muldoon analyzed his multiple OBEs, some of which he could induce. His interest on the topic led him to publish books about psychic phenomena (e.g., Muldoon, 1942), as well as the two books reviewed here. By the time Carrington published his 1929 book with Muldoon, he had been involved in psychical research for more than 20 years and was well-known through publications such as *The Physical Phenomena of Spiritualism*, where he discussed mediumistic fraud (Carrington, 1920).

Sylvan Muldoon

In his first case collection, *The Case for Astral Projection* (1936), Muldoon presented previously published cases, as well as new cases from people who wrote to him. The first part of the book was devoted to the concept of astral projection, while the second included many actual cases.

Some accounts included projections presented with headings such as "Floats Horizontally in Air," "A Mother Projects, Finds Her Baby Well," "Finds Her Dog in Astral World," "Finds Her

Astral Body Beautiful," and "Spends Several Days in Spirit World." There were also accounts such as Wiltse's (1889) NDE, and other experiences taking place under anesthesia, during sleep, relaxing, and in other circumstances. Muldoon was convinced that people could leave their bodies, but he was also open to other explanations in some particular cases.

Muldoon's work was continued in a study published fifteen years later with Carrington as coauthor. This was *The Phenomena of Astral Projection* (1951), one of the most influential of the modern case collections of OBEs and NDEs. The authors presented more than 100 cases, most of which were organized in chapters including deliberately induced projections (such as those under hypnosis), and those taking place under the influence of drugs, suppressed desire and other emotional factors, during accidents or illness, and during the waking state. The latter included cases where the person was lying down (eight cases), sitting down playing an organ (six cases consisting of the same individual's repeated experiences), sitting down (three cases), and one each for the following: walking, standing and assisting a surgical operation, standing inactive, kneeling in prayer, and no information.

Like Bozzano, Muldoon and Carrington included in their book several cases in which observers at deathbeds saw emanations such as mists and lights from the body of dying persons. Those accounts present no evidence that the persons were conscious of leaving the body while they were dying.

The authors commented in their conclusion about the commonality of features in the narratives presented in the book:

> In a large percentage of the cases we find mention of floating and soaring, of being above the body and looking down upon it, of floating above the physical body, of being suspended in the air, of the astral cord uniting the two bodies, of cracking and snapping sensations and sounds in the head, of catalepsy, physical numbness and the inability to move, of the momentary blanking of consciousness when entering and leaving the body, of the feeling of depression just before projection, of the feeling of "repercussion" when again entering the body, of the belief that one is dead, etc. These characteristics are repeatedly found throughout the cases reported, and it is interesting to note that they are seemingly so universal and so identical. (p. 216)

Muldoon and Carrington also presented descriptions of rare features of astral projection. Among them were returning to the body through the head of the physical body (p. 77), seeing both the physical body and a replica of it from a different position (p. 133), being perceived by others while out of the body (p. 187), and shifts of visual perception location in terms of alternately seeing from the physical body and from another location (p. 190).

Like so many before them, Muldoon and Carrington argued that astral

projection involved a spiritual body and that it supported the concept of survival of bodily death. They wrote about the latter idea: "Death is nothing more than the *permanent* separation of the two bodies. . . ." (p. 31)

Hornell Hart

As the inheritor of the previous literature, sociologist Hornell Hart (1888–1967) focused on the study of spontaneous cases and the idea of survival of bodily death. One of his initial studies, "Visions and Apparitions Collectively and Reciprocally Perceived," appeared in the *Proceedings of the Society for Psychical Research* (Hart & Hart, 1933). In later years he expressed his ideas about survival in his book *The Enigma of Survival* (1959). He is to be credited for bringing the topic of OBEs to parapsychology journals at a time in which there was little discussion of the topic.

In his paper "ESP Projection: Spontaneous Cases and the Experimental Method," published in the *Journal of the American Society for Psychical Research* in 1954, Hart compiled published OBE cases to study what he referred to as "ESP projection." These were experiences that included the sensation one was located out of the body, veridical perceptions during that state, and that had a "consistent orientation to the out-of-body location" (p. 121). His efforts led him to find 288 published cases, out of which he used 99 reports in which the experience had been reported before it was verified.

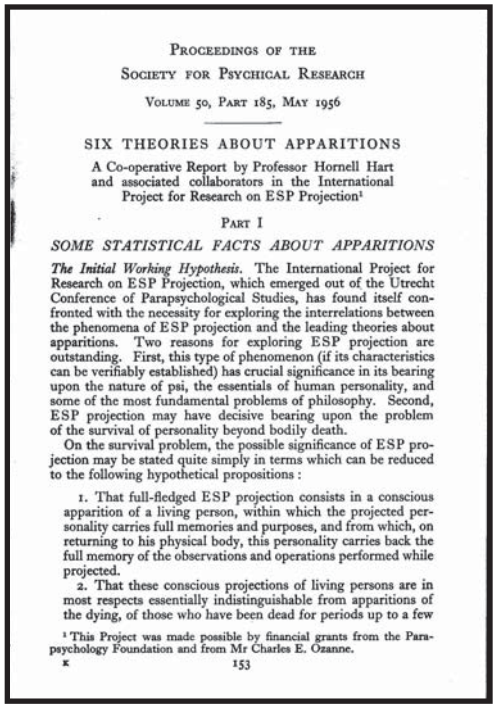
Hart analyzed cases in terms of various concerns. One was the way in which the experience took place. Some were induced via the use of hypnosis (20 cases), concentration (15), and methods other than concentration (12), while others took place spontaneously (22). He found that "neither the concentration method nor the hypnotic method usually produce full-fledged ESP projection" (p. 128).

The "full-fledged projections" had several features. In addition to veridical features, the cases also included reports of seeing the physical body, sensations of floating, being aware of having a different body, and being able to pass through matter.

Some of the features seemed related to the circumstances in which the OBE took place. For example, features such as going to other dimensions and seeing spirits took place more often in spontaneous OBEs than in induced ones. Those induced by hypnosis had veridical perceptions, but few other features. Perhaps the hypnotically induced experiences tended to be veridical because the induction procedure included suggestions to visit and observe distant places. With some exceptions, such focusing of attention is not necessarily present in spontaneous OBEs.

Hart said he used a scale to rate cases for evidentiality, details of which appear in his 1956 paper "Six Theories about Apparitions." The article presented

an early example of the use of quantification to analyze OBE features.



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SIX THEORIES ABOUT APPARITIONS

A Co-operative Report by Professor Hornell Hart and associated collaborators in the International Project for Research on ESP Projection[1]

PART I

SOME STATISTICAL FACTS ABOUT APPARITIONS

The Initial Working Hypothesis. The International Project for Research on ESP Projection, which emerged out of the Utrecht Conference of Parapsychological Studies, has found itself confronted with the necessity for exploring the interrelations between the phenomena of ESP projection and the leading theories about apparitions. Two reasons for exploring ESP projection are outstanding. First, this type of phenomenon (if its characteristics can be verifiably established) has crucial significance in its bearing upon the nature of psi, the essentials of human personality, and some of the most fundamental problems of philosophy. Second, ESP projection may have decisive bearing upon the problem of the survival of personality beyond bodily death.

On the survival problem, the possible significance of ESP projection may be stated quite simply in terms which can be reduced to the following hypothetical propositions:

1. That full-fledged ESP projection consists in a conscious apparition of a living person, within which the projected personality carries full memories and purposes, and from which, on returning to his physical body, this personality carries back the full memory of the observations and operations performed while projected.
2. That these conscious projections of living persons are in most respects essentially indistinguishable from apparitions of the dying, of those who have been dead for periods up to a few

[1] This Project was made possible by financial grants from the Parapsychology Foundation and from Mr Charles E. Ozanne.

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The overall purpose of the paper was to discuss explanations of apparitions and to assess empirically if the features of apparitions of the living and apparitions of the dead were similar. Hart collected 165 published apparition cases out of which 25 were OBE apparitions. Some of the features of the latter cases were full figures (100%), adjustment to physical surroundings (80%) and to persons (72%), normal body movements (28%), descriptions of features as vivid (24%), and of the apparitions as solid and life-like (12%).

Hart believed that OBEs were "internal views of the phenomena observed externally in connection with apparition of the living" (p. 177). For this reason he argued that similarities between different types of apparitions—apparitions of the dead, of the dying (but not conscious), and OBE apparitions—suggested "something of the nature of the experiences undergone at and (to a limited extent) after death" (p. 177). Statistical analyses were reported by Hart showing that all apparitions had similar features.

He summarized the hypotheses and findings of the study as follows:

> 1. That full-fledged ESP projection consists in a conscious apparition of a living person, within which the projected personality carries full memories and purposes, and from which, on returning to his physical body, this personality carries back the full memory of the observations and operations performed while projected.
> 2. That these conscious projections of living persons are in most respects essentially indistinguishable from apparitions of the dying, of those who have been dead for periods up to a few hours, and those who have been dead for days, months, or years.

> 3. That since this is the case, some of the most frequent types of apparitions of the dead presumably carry with them the memories and purposes of the personalities which they represent, and thus constitute evidence of survival of personality beyond bodily death. (pp. 234–235)

As mentioned in my discussion of D'Assier, and as I have pointed out before in this *Journal* (Alvarado, 2011b), the idea that apparitions of the living are similar to apparitions of the dead, and that this similarity supports a survivalist explanation, was discussed by others before Hart.

Critical Remarks

An interesting issue regarding work with cases is how much the authors in question imposed a theoretical framework onto the accounts they compiled. This seems to be the case when D'Assier assured us that the phantoms he studied had "invisible capillaries" and when Bozzano wrote about an "etheric brain." These were speculations derived from the author's interpretation of cases.

Related to this is the continuity the above-mentioned authors and others (e.g., Myers, 1903) assumed existed between apparitions of the living and OBEs. But this continuity, as assumed by authors such as Moses, D'Assier, and Bozzano, is not clear in many cases. The same may be said about the various phenomena Bozzano connected to each other: OBEs, autoscopy, emanations from the dying, and apparitions of the living. While the connections assumed to exist may be real and may reveal we are dealing with the same class of phenomena, they are not clearly observable and instead of being "uncovered" from the data they may be the result of conceptual impositions guided by projection assumptions. After all, many of the same phenomena these authors have interpreted on a projection OBE model have been interpreted in different ways by others (Braude, 2003, Bret, 1939, Gurney, Myers, & Podmore, 1886).

Most of the authors relied on their impression of the cases to argue for similarities and continuities, and this may have produced erroneous conclusions. To check for Muldoon and Carrington's statements about the commonality of OBE features, I analyzed their cases for a few of the features Muldoon and Carrington said were frequently reported: reports of cords, catalepsy, sounds (such as snapping, clicking, and roaring sounds), and "repercussion" (shocks or jolts felt on the physical body on return). Except for the chapter of cases in brief (Chapter 9), and those cases of emanations from the body at death which did not include cases in which individuals felt they were located outside of their physical bodies, I used the 87 cases reported in chapters 1–2 and 4–8 of their book. This showed the following: cords (6 cases, or 7%), catalepsy (5 cases, or 6%), sounds (7 cases, or 8%), and shocks (3 cases, or 3%). Such results do not support the claim that such features were found in a "large percentage of the

cases" (p. 216), casting doubt on Muldoon and Carrington's generalizations, as well as on impressionistic analyses which fail to include the most elementary counts of features. This reminds us of the importance of reaching conclusions on the basis of estimates of the actual proportion of OBE features as opposed to general impressions based on what we remember from reading cases.

Hart brought more precision to OBE studies when he conducted quantitative analyses of the features of OBE apparitions, and apparitions of the dying and of the dead. With his work we have specific proportions of features while before him the issue was only addressed with general descriptions. But was such precision unambiguous? His conclusion regarding the survival implications of the above-mentioned apparitions did not depend solely on his statistical comparisons. The interpretations of his results depend on the validity of his assumption that OBEs represent consciousness located out of the physical body.

Furthermore, it may be argued that some of the cases used by Hart are problematic. Six of the 25 OBE apparition cases analyzed by Hart were taken from secondary sources that did not present the actual testimony of the experiencer. This, and the fact that most of the other cases with first-hand testimony included few details about the OBEs suggest that the profile of features coded by Hart may not be reliable. In any case, his effort was a valuable one deserving followup with a higher number of cases.

There are also questions about Durville's work. It is not always clear how isolated the magnetized subjects were from the information they were asked to perceive. The physical results reported by Durville are puzzling, but one wonders if they can be explained by ideas other than the exteriorization of a phantom. Similar effects have been interpreted in the past in the physical mediumship and psychokinesis literatures using concepts that do not necessarily involve the idea of a double. In addition, because perceptions of the phantom depended on the testimony of the subjects, one wonders about the role of suggestion, particularly with repeatedly used individuals who knew what Durville and his collaborators wanted to obtain. One wonders if different effects would have been obtained with special subjects who had different beliefs than the ones used by Durville or with subjects with less "training."

I do not mean to say that the work of the authors discussed here is not valid or that it has no value for us today. But the above-mentioned critiques are methodological issues that need to be considered both in the evaluation as well as in the replication of such research.

Concluding Remarks

Works such as the ones commented on here have kept alive the idea of subtle bodies and projection over time. However, some of them, such as Moses and D'Assier, have been almost forgotten in the modern scholarly and scientific

OBE literature. Durville and Bozzano are cited mainly by European authors, partly because their work has not been translated into English. There was a period when most authors writing about OBEs cited Muldoon and Carrington's 1951 book as well as Hart's 1954 paper. This work has not been completely forgotten, but, as happens in most fields, citations from these years decline because more recent publications tend to be cited instead.

In addition to the usual forgetfulness that writers in modern fields show about the old literature over time, there have been other influences in the neglect of this past. Perhaps the main one is that the academic contemporary OBE literature has been heavily influenced by psychological ideas (Murray, 2009), and more recently by neurophysiological approaches (Blanke, 2004). In such climate—affecting both parapsychology and psychology—ideas of projection such as the ones discussed here are not seriously considered in academic circles. This has led to the neglect of empirical studies about veridical aspects of OBEs in recent times, a topic that has received more attention in NDE studies (Holden, 2009).

Another reason for the neglect of this old literature is that some of the concepts of subtle bodies discussed here (mainly those of D'Assier and Durville) may seem to be too physical for some current students of psychic phenomena. As I have argued elsewhere, many modern parapsychologists have argued that experimental evidence for psi is inconsistent with a belief in physical forces (Alvarado, 2006a). Furthermore, some have presented higher-space theoretical speculations that do not assume a projection into physical space (Poynton, 2001).

We also need to remember that during the 1980s and later, most OBE researchers focused on studies of the features, the psychology, and other correlates of OBEs, and ideas of projection and subtle bodies became less popular in parapsychology (for overviews see Alvarado, 1989, 2000). Examples of this were the works of Gabbard and Twemlow (1984) and Irwin (1985).

Regardless of changes in approach, the tradition represented by the publications reviewed here has been important in modern times. These ideas have been influential in discussions of the topic of survival of death (e.g., Fontana, 2005), and have inspired the few modern laboratory studies of veridical perception and detection (Alvarado, 1982a, 1982b) that deserve followup. In fact, successful laboratory work along these lines and the compilation and study of new well-documented cases would be valuable to balance the view held by many today that the OBE is purely hallucinatory.

Some of this past work, such as Muldoon and Carrington's, has reminded us about the variety and complexity of OBE features. Much remains to be done with cases to examine the basic features of the OBE, including the less frequent ones, as well as studying if specific features, or features profiles, are related to

other features, to circumstances of occurrence, or to other variables (Alvarado, 1997). Hart provides us with ideas for research, such as the difference between spontaneous and induced OBEs.

Although the writings of Moses, D'Assier, Durville, Bozzano, Muldoon and Carrington, and Hart represent different time periods, they can still inspire new research on the subject. Furthermore, these old writings help us to understand the development of OBE studies. But we need to realize that such development did not depend solely on projection ideas. In addition to these, the field was influenced by other concepts, such as those coming from psychology. Like the OBE, the history of the topic is more complex than what it seems on the surface.

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BOOK REVIEWS

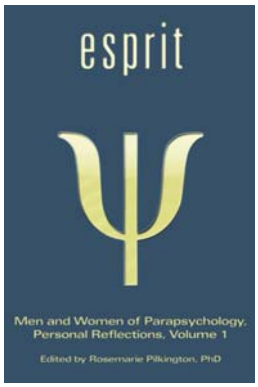
Esprit: Men and Women of Parapsychology, Personal Reflections, Volume 1, edited by Rosemarie Pilkington. San Antonio: Anomalist Press, 2010. 184 pp. $12.95 (paperback). ISBN 9781933665504.

Esprit is a very readable collection of short autobiographical essays from a dozen leading psi researchers who were over 65 at the time of the original publication in 1987. Long out of print, this book is now republished with a modified title and the notice that it is the first of a three-volume series to come, all edited by Rosemarie Pilkington. The twelve essays are from Jule Eisenbud, Montague Ullman, Jan Ehrenwald, Eileen Coly, Joseph H. Rush, Gertrude R. Schmeidler, Emilio Servadio, Renée Haynes, Hans Bender, Karlis Osis, George Zorab, and Bernard Grad. At the time of this review, only Eileen Coly is still living.

As the first collection of its kind for the parapsychological world, *Esprit* is a rich biographical resource for historians of the field, but it really is much more. It is the human story behind the scientific reports. It provides an insightful glimpse into what motivated a diverse group of gifted men and women to devote a large part of their lives to the exploration of an elusive and controversial dimension of human consciousness, and with little concern for monetary or societal reward. I would expect that *JSE* readers might find many similarities in their own absorption with interests that may lie outside the boundaries of conventional science.

With a great degree of openness, the *Esprit* authors have tackled five basic questions presented by the Editor: namely, what led them to become involved in the field, what were their most important contributions, what might they have done differently, what experiences exceeded their "boggle threshold," and what advice would they give to young people entering the field today. In his helpful Foreword to this new edition, Stanley Krippner notes that despite their differences, nearly all their lives contain three factors that can be seen to be essential. There are the predisposing factors that led them to an initial interest in psi, the precipitating factors that led to a conscious decision to become involved, and the maintaining factors that enabled the continuation of a deep motivation and involvement in this field.

Predisposing factors tended to be personality factors or early exposure, such as Haynes and Osis hearing folktales around the kitchen table or Coly growing up as the daughter of the celebrated medium Eileen Garrett. Precipitating factors were often personal experiences, such as the "living light" that



startled Osis at the time of his aunt's death in rural Latvia, the group sessions with a purported entity that engaged the adolescent Ullman, or the unusual energetic phenomena experienced so intensely by the youthful Grad. An early fear of death assuaged by attending a séance was a precipitating event for the young Zorab, while Ehrenwald was first mystified as a young psychiatrist by the case of a dyslexic nine-year-old girl who could "read" only when her mother was reading the same lines from a book in an adjacent room.

Intellectual challenges from reading psi-related material or encountering exceptional cases were precipitating factors for many of this group and often led to research efforts of their own. An available research opportunity for dream telepathy work at Maimonides Hospital helped continue Ullman's interest, while an invitation from my father, J. B. Rhine, to join the Duke Lab provided Osis a position to continue his work on animal psi (where I was his assistant for a time).

Employment opportunities were a major maintaining factor for continuing in the field, although they were scarce then as they are now. For Ehrenwald, Eisenbud, Servadio, and Ullman, their parapsychological interest and identity was maintained by their psychotherapeutic practice, while the success of research projects helped encourage Grad, Rush, Schmeidler, and others to continue as they did. And for many of this group it was the camaraderie and collegial reinforcement aided by international meetings and conferences that has continued to be a major maintaining factor in a field where considerable hostility from the outside professional world is still the norm.

There were a few minor disappointments in the book, such as George Zorab's short essay that revealed little of the measure of the man or Hans Bender's account that was sadly cut short due to health issues. There is a notable omission of other prominent individuals who were still alive in 1987, such as John Beloff and Ian Stevenson, although this is explained by Pilkington in a paragraph cleverly entitled the "few that got away." We can be glad that she began when she did, and that she is continuing this effort with two subsequent volumes.

In summary, *Esprit* offers valuable guidance to the novice, some new "discoveries" of unfinished work and speculations for the more experienced parapsychologist, and possible fodder for the skeptic who just wonders about the makeup of a parapsychologist. But regardless of one's belief about psi, this collection of essays provides priceless vignettes of a band of dedicated and selfless pioneers. As I ended the book, this long-forgotten verse of Longfellow's

spontaneously came to mind, "Lives of great men (and women) all remind us, we must make our lives sublime, and departing, leave behind us, footsteps on the sands of time."

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Notre Sixième Sens by Charles Richet. Paris: Editions Montaigne, 1928. 253 pp. 19 illustrations.

In 1928, the year of publication of *Notre Sixième Sens*, Charles Richet was a world-famous professor of physiology, qualified as a professor by the Medical Faculty of Paris, and a Nobel Prize winner in medicine. He was also Honorary President (1919) of the Institut Métapsychique International (IMI), of which he was to become president from 1930 until his death in 1935.

Charles Richet lived many parallel lives: physiologist, psychologist, métapsychiste, poet, novelist, historian, aviation pioneer. He was a pacifist but a eugenicist, too. He was an extraordinary personality who "strangely mixed scientific rigor with a poet's understanding." His works in physiology were of decisive importance: nervous system, thermoregulation, breathing, anesthesia, and immunology. His discovery of serotherapy and his work on anaphylactic shock qualified him for the Nobel Prize in medicine in 1913.

He became one of the great names in métapsychique for which, moreover, he had coined the term (in 1905), on the model of Aristotle's metaphysics.

His interest in psychic sciences went back to his adolescence, but he denied in his first writings the existence of paranormal phenomena, which he had witnessed however. Thus, in 1872, during his internship in surgery, he hypnotized many female patients and published his observations, describing in minute detail the characteristics of hypnotic sleep and the peculiar capacity of sleepwalkers to incarnate different personalities (prosopopesia) under the effect of suggestion (Richet, 1875). For Richet, and in that period, the supposed manifestations of clairvoyance could only be due to "a special state of the imagination, a neurosis" (Richet, 1875:358).

At the beginning of the 1880s, he began nevertheless to commit himself openly to métapsychique research, following publication of his first articles. In 1885, he created, on the model of the English SPR, the Société de Psychologie Physiologique [Society for Physiological Psychology] with Ribot and Marillier, of which Charcot was president. This society "soon disappeared, because

we had the bothersome idea of presuming to interest the psychologists, the physiologists, and the physicians in métapsychique research" (Richet, 1922/1994:63).

In 1891, he wrote the Preface for the French translation of *Phantasms of the Living* (Gurney, Myers, & Podmore, 1886) and founded the *Annales des Sciences Psychiques, Recueil d'Observations, et d'Expériences,* where famous researchers, such as Flammarion, Bozzano, de Vesme, C. Lombroso, Lodge, Maxwell, Marillier, Lodge, Schrenk-Notzing, Geley, and Osty published their work. These *Annales* (which became the *Revue Métapsychique* in 1919 when the IMI was founded):

> establish a proper balance between the credulity of the spiritualist/spiritist journals and the blind ignorance of the compilations of official psychology. (Richet, 1922/1994:63)

In 1919 he participated, with Gustave Geley, R. Santo Liquido, and Jean Meyer in the creation of the IMI and *Les Annales* became the *Revue Métapsychique*.

Richet's interest in métapsychique was considered by many of his contemporaries, "a simple *tocade*" of a scholar. This opinion seems to still be shared by some of his descendants. So attracted by "marginal" subjects, but heir to the Age of Enlightenment, Richet was to have science as his religion and was to always hold that physiology could establish a bridge between spirit and matter, the visible world and the invisible world, thanks to the study of sleepwalking, of cryptesthesia, and of métapsychique.

Thus it was that in 1928, more than 20 years after the episode of the Villa Carmen in Algiers, where Richet witnessed a so-called "ghost manifestation" that has proven to be a hoax that had discredited him (Le Maléfan, 2002), nine years after foundation of the Institut Métapsychique International, and six years after publication of his *Treatise on Métapsychique,* Charles Richet, having withstood winds and tides, having upheld his interest in psychic sciences, published *Notre Sixième Sens*.

This book is dedicated to Henri Bergson in honor of his work, particularly on the mind/body relationship (1896). It is Richet's attempt to explain métapsychique through physiology, based on the idea that the métapsychique, at least in its subjective dimension, could be a coextensive area of the physiology of perception. Richet suggests then to apply the same methodology, the same procedures, which are so efficient in the field of physiology. Thus he coined the term *Sixth Sense*, in line with the other five senses that are more common: hearing, sight, taste, smell, and touch. Hence, this supplementary sense must be—like the other senses—integrated into human physiology.

In his *Traité de Métapsychique* (1922), Richet established a kind of

catalogue of all the phenomena covering the field of métapsychique, while contenting himself by merely evoking the existence of this sixth sense.

In *Notre Sixième Sens*, he labored to establish the existence of this sense "demonstrating it will be exclusively based on observation and experience, that is to say on the classic methods of physiology" (p. 11). On the basis of testimony and experiments, he reviews here everything that can extend perception by the usual senses in a more subtle way, concluding with the affirmation that this extra and unknown sense is real.

Between the lines of this work, a kind of leitmotiv appears. It is an endeavor to convince the world of skeptics that this sixth sense is real, what Eugène Osty called *metagnomia* (Osty, 1922) and that others call *clairvoyance*, *telepathy*. Richet also calls it *cryptesthesia* (or hidden sensitivity). This implies a major presupposition that we have just mentioned. It consists in looking as a physiologist at that potentiality of perception and sensitivity. For this reason, he preferred the term *sensitive person* to that of *metagnomist* or to (terms even more abhorred) *clairvoyants, mediums,* or *extralucids*. This sixth sense, a potentiality present in all of us, at a latent level, includes: telepathic perceptions or flashes, clairvoyance, psychometry, thought transference, premonition, pragmatic cryptesthesia (psychometry) or a capacity to obtain "information starting with simple objects as material indicators of everything that can be connected with their history" (p. 88), or even veridical hallucinations: a perception in visionary form of an object or a situation, or of a scene out of range of the spatial–temporal field of the normal senses.

It's not always very easy to follow Richet's thoughts when he tries to give a clear definition of this "special sensitivity" called the sixth sense, which can explain telepathy and also the capacity of certain mediums in spiritualistic sittings.

The book is divided into five large parts (that Richet calls Books), which are in turn subdivided into chapters. In the first part, made up of the Introduction and five small chapters, he first defines this sixth sense. Relying on the adage "*nihil est in intellectu quod non prius fuerit in sensu*," he describes our ordinary senses from a psychological and physiological point of view and puts forth the idea of a perception of the exterior world "showing itself by other ways than those of the normal sensory ways."

Alongside the forces and vibrations of all kinds that surround us and of which only part are accessible to our ordinary senses or to our technology, for Richet there exist around us:

> vibratory forces, sometimes huge, sometimes tiny, that would be capable of manifesting themselves if there were detectors to perceive them. That does not at all prove that there is a sixth sense, that only proves—and with irresistible force—that this sixth sense is possible. (p. 14)

Richet then draws up a short historical reminder of testimonies of that capacity: Cicero, Mesmer, and Myers and his contemporaries of the SPR, and the immense material that they have gathered. This first part ends with a question that is still of current interest: How to bring into the orbit of science facts that are so fleeting, so accidental, so difficult to reproduce as those of métapsychique.

The second part, "Observations That Establish That a Sixth Sense Is Real," is composed of two chapters. In the first, Richet draws up a bibliography of the principal works on telepathy (Gurney, Myers, & Podmore, 1886), on telekinesis (Schrenk-Notzing, 1920), on the survival of the soul (Lodge, 1909), and on the unconscious dimensions at play in these métapsychique facts (Geley, 1921).

Subsequently, on the grounds of trustworthy testimonies drawn from *Phantasms of the Living*, or from the *Treatise on Métapsychique* (1922), and without seeking to penetrate their mechanism, Richet endeavors to posit the existence of this sixth sense. From possible it becomes "morally certain," after he has eliminated the hypotheses of fraud, of error, of illusion, and of coincidence. For example, Wingfield's case of a hallucinatory vision of his brother at the very moment of the latter's death; Mr. Wingfield had never had hallucinations in the past, so we are therefore confronted with a veridical hallucination (monition of death) (pp. 31–33). According to the statistically estimated probabilities, that hallucination, that perception, would have only one chance in "8×10^{-11}" to be produced. In this manner, seven testimonies of veridical hallucinations were reviewed with the same conclusions (p. 29). Likewise for three cases of veridical collective hallucinations and nine other cases of psi perception or monitions of less dramatic events (that is other than death). Thus, again, he concluded:

> It is always a special esthesia which is in play. It is always the sixth sense that reveals a (unknown) fragment of reality to us. (p. 64)

By fragment of reality, Richet means another dimension, a hidden part of the reality dimension inaccessible to usual perception.

In the third part, he takes up the "Experiments That Establish That the Sixth Sense Is Real." This part comprises nine chapters in which we can follow Richet in his attempt to classify personal experiments, experiments with sleepwalkers (provoked or experimental), veridical hallucinations, pragmatic cryptesthesia, *spiritic* cryptesthesia, reproduction of drawings, and experiments with several highly sensitive persons.

Richet, confident in his scientific approach, proposes first of all a classification of the phenomenon under study, according to:

— the state of consciousness (hypnosis or trance), whether the subject is highly sensitive or not,

— the object with which the sixth sense has to deal,
— the degree of probability of the results (easy to estimate if one word is involved, much more problematic in all other cases),
— the capacities of the subject to mobilize this sixth sense, an elitist point of view that seems to take away its favor and that demands to be adopted.

The chapter devoted to his personal experiments begins with a story that one might see as the origin of Richet's métapsychique trajectory: a spectacular experiment carried out in 1872 on one of his women patients, Mariette, of the Hôtel Dieu. Richet asks her to read while she is under hypnosis from a blank piece of paper the name of one of his friends who was accompanying him and was unknown to the patient. After a moment, she succeeds in giving him in order four letters out of the five making up the name of this friend (pp. 69–70). Weirdly, three years later and when he published his dissertation on sleepwalking, Richet rejects the existence of any phenomenon of clairvoyance or "extra-lucidity" related to the hypnotic state. He will not get into the substance of the subject until 10 years later.

Then Richet recounts his experiments with transmitting drawings, in 1886–1887, with Alice, a sensitive. In order to distinguish cryptesthesia and telepathy, he had worked in such a way that the drawing sent and put in a sealed, opaque envelope would be handed to the percipient by a third party who had not attended the séance (pp. 71–77). His results and his observations had many points in common with what René Warcollier would perform several years later in his studies of telepathic transmission of drawings (Warcollier, 1921, Si Ahmed, 2010). Richet then takes up the experiments in hypnosis at a distance performed with Léonie (Janet's patient), who had a cryptesthetic perception in Le Havre of the fire in Richet's laboratory in Paris (pp. 81–82). We note in the examples given in this chapter, the difficulties encountered by Richet in cleansing cryptesthesia of telepathic contamination. This observation also applies to the account of cryptesthesia on the wristwatch of Georges (Richet's son) handed to Mme Thompson (a clairvoyant studied by Myers). This wristwatch had belonged to Georges' grandfather (killed in 1870 at the battle of Vendôme), handed to his son, handed down to his grandson, Georges. After having taken the watch, Mme Thompson said: "There is blood on this watch," and she added "three generations mixed" (pp. 86–88).

At this point, Richet reported various experiments with sensitive and non-sensitive persons and took an elitist position by writing: "In order to succeed in demonstrating the reality of the sixth sense, one must work with the highly sensitive persons" (p. 98). He then supported his thesis with an array of observations performed with important sleepwalkers such as Alexis Didier, by always making an effort to differentiate between telepathic perception and

cryptesthetic perception. He next compares the various manifestations related to the sixth sense: true experimental hallucinations, premonitions of approach (a perception in daily life of an encounter with or the imminent appearance of a close relative, friend, or associate), pragmatic cryptesthesia, and "spiritual" cryptesthesia, and the transmission of drawings, related to the first experiments of René Warcollier (1921).

This part concludes with studies of highly sensitive subjects and of several edifying experiments. It is quite obvious that Richet is fascinated by these psi subjects, which allow him to support his original hypothesis: the existence of a sixth sense that he defines as the possibility of certain psyches being able to perceive a subtle vibration of reality with, in the background, a more or less explicit reference to the hypothesis of mental radio. In most cases, he applies himself to posing a statistical estimate of the probable reality of these perceptions. Whenever he can, he tries (and we don't know why) to refute the telepathic hypothesis while favoring that of cryptesthesia, as if it were easier for him to admit the hypothesis of an interaction between matter and psyche rather than that of an interaction between two psyches.

In the fourth part, made up of eight chapters, Richet enumerates "Various Considerations about the Sixth Sense." In the first chapter, a short review of phenomena that can be connected to the sixth sense: premonitions, divining rod, auditory hyperesthesia, xenoglossia, and human prodigy calculators. He anticipates what will be rediscovered later by Rhine: the extinction effect (the effect of decline), but also the necessity to include in the statistics the unsuccessful experiments, etc. He also watches out for the experiment to take place properly: a friendly, kind climate, respect for the *habitus* of the sensitive person, etc. He dwells on the difficulty (still current, still just as fruitless) of convincing the skeptics, as obvious as the phenomena may be. We may note that among the skeptics named is Pierre Janet of whom we know—if we step back—the history of him distancing himself from métapsychique, although he had been the initiator of such studies with his experiments in Le Havre on Léonie. Richet stresses the "Frequency and Rarity of the Sixth Sense" (p. 162), and especially its difficult reproducibility, which makes its study so problematic. He means that some facts of cryptesthesia are frequently observed with many different persons, but only once or twice in one life, or, in other words very rarely. It is of course different with exceptionally gifted persons who may show this ability more frequently (pp. 215–219).

Then Richet poses the differential diagnosis between the cases having to do with telepathy (p. 167) and those that cannot be interpreted by telepathy, between telepathy and the hypothesis of an unknown vibration of reality, that is to say a hidden aspect of reality that our usual senses cannot perceive. He criticizes and rejects the spiritualist interpretation, in the majority of cases, even if, he says:

> there are cases (few in number) in which the spiritualist hypothesis is more convenient, but which can also be explained by the sixth sense. (p. 230)

This part concludes with an attempt at classification of this sixth sense according to the nature of the vibrations of reality, which it may involve: sender's thoughts, present or past material reality, etc. This last part ends with a sort of evocative vision: that of a future world where the sixth sense would be fully recognized and cultivated, a guarantee for the improvement and progress of humanity.

Throughout this work, Richet considers the sixth sense, on the model of other physiological senses, like a new sense and a concept which allows us to take together psi phenomena. For instance, in his conclusion, Richet goes back over all the proofs, observations, and experiments that uphold the reality of this sixth sense. But he observes, not without bitterness and with a certain astonishment, that the great minds of his time continue to deny the evidence. However, he writes, summarizing and concluding his work:

> The real world emits vibrations around us. Some are perceived by our senses; others, not perceptible by our senses, are discerned by our physical devices; but there are yet others, not perceived by our senses or by our physical devices, which act on certain human intelligences and reveal to them a fragment of reality. (p. 247)

And he concludes this book by saying:

> It seems to me that the sixth sense is a small (a very small) window opened onto the mysterious forces. (p. 248)

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The Western Esoteric Traditions: A Historical Introduction by Nicholas Goodrick-Clarke. Oxford University Press, 2008. 286 pp. $29.95 (hardcover). ISBN 9780195320992.

Nicholas Goodrick-Clarke is Professor of Western Esotericism at the University of Exeter and Director of EXESESO, the Exeter Centre for the Study of Esotericism. Those who are skeptical of such a university chair might be inclined to ask whether, like ABRACADABRA, the acronym EXESESO may be a magic word. Images of Harry Potter thrusting forward his wand with the invocation "EXESESO!" come to mind. However, before Professor Goodrick-Clarke aims his wand at this reviewer, let me clarify. What he tellingly argues in this densely packed 286-page volume is that his subject matter, which has been thought of as constituting "survivals of superstition and irrationalism" and has been "kept in epistemological quarantine" (p. 4), actually represents an important body of work having an ongoing impact on the development of both culture and science. In Goodrick-Clarke's view, the historical systems under the rubric "esoteric" are uniquely important today as a spiritual counterpoise to the mechanistic view of nature.

If Goodrick-Clarke is right, the Western esoteric tradition should command scientific interest in the light of starkly contrary views such as those of Hawking and Mlodinow that we are nothing more than biological machines having no free will, and that there is no need for a deity to explain the creation of the universe (Hawking & Mlodinow, 2010), or the fad in cognitive science identifying the mind with the brain, the brain with a computer, and the consequent denial of selfhood and with it of course the soul (cf. McDaniel, 2010). Yet traditional (non-esoteric) religions already stand opposed to a scientific world view that eliminates soul, deity, and self. What does the esoteric perspective provide that non-esoteric spirituality cannot? How might science be transformed by

a dose of esotericism? In his final chapter, Goodrick-Clarke proposes that a "scientized" esotericism may bridge the gulf between spirituality and science.

The Historical Account

The main body of this book consists of a detailed history of systems loosely classified as esoteric, excluding related systems of Far Eastern origin such as Vedic philosophy, Buddhism, Jainism, Yoga, and so on, except as, in some cases, proselytizers have preempted such materials especially in the later works of individuals such as Blavatsky, Besant, and Leadbeater. (Leadbeater, 1968). Readers who have an interest in the subject from a purely historical viewpoint should find his account rewarding; but if one is drawn to the book out of a desire to deepen one's understanding of esoteric materials from the point of view of personal transformation through specific practices, or of relevance to scientific methodology, the first chapters may seem pedantic as the author takes us through outlines of ancient sources of esotericism originating in the area of the eastern Mediterranean during the first centuries A.D. (p. 15), and subsequently through brief summaries of views promulgated by literally dozens of spiritual teachers and their derived systems over the course of the following centuries.

My experience in reading this volume is that during Goodrick-Clarke's account of this historical sequence, his position regarding the veracity of oftentimes outlandish claims is ambiguous. At times he seems the unbiased reporter, but at other times there appears to be an implication in his phraseology suggesting the role of an advocate. This ambiguity remains until we reach the final chapter, where it seems clear that he takes the perspective of an enthusiast.

In this review I do not intend to address in any detail the accounts he provides of the long trail of these seemingly self-multiplying systems, their historical interrelations, and their frequently colorful proselytizers (such as the flamboyant Count Cagliostro or the mysterious Madam Helena Blavatsky). Instead I wish to focus on the central character of what is called *esotericism*: what makes these systems "esoteric?" And why should they have any special impact upon either spirituality or science in the modern world?

The Question of Origins

Uppermost in any account of Western Esotericism (WE) is the question of origins. This is especially the case because the claim to truth is regularly referred to the assumed veracity of "ancient wisdom" and divine communications. Goodrick-Clarke cites early sources as including Alexandrian Hermetism, the cult of Thoth in Egypt, the *Hermetica* or Hermetic texts from scattered sources (the chief of which is the Greek *Corpus Hermeticum* dating from the second and third centuries A.D.), Neoplatonism, Plotinus, Porphyry, Iamblichus, Proclus,

Chaldean Oracles, and Gnosticism. However, he points out that these systems reflect Eastern influences dating from the time of Alexander and carried to the Mediterranean world through Egypt (p. 16).

WE is therefore a hybrid set of ideas. Because of the author's focus on Western systems, certain factors having to do with this East–West juxtaposition appear to this reader to be insufficiently recognized. Aside from the Orient (Near East), major religions of the Far East such as Buddhism and Hinduism do not depend on a deity in the sense of a Christian God. WE systems, as they developed in the Middle Ages and later, very much adopted Christian or Judaic concepts. One can readily detect an overlay of Judeo–Christian thought on an underpinning of quite different ideas.

One notable omission in Goodrick-Clarke's account is the absence of significant reference to the goddesses of Egypt and the goddess-religions of the ancient Mediterranean such as the Greek or Pelasgian creation-goddess Eurynome and the Minoan Mother-goddess of Crete (Graves, 1966, Cottrell, 1962), whose origins are pre-Hellenic. There is no reference to "goddess" in the exceedingly elaborate index. Yet it is beyond imagination to think that this amalgam of ideas could have escaped the influence of the very ancient deified feminine creative principle.

Without blinking, Goodrick-Clarke notes that Thoth (who in his later identification with Hermes becomes the chief figure and Psychopomp of Alchemy, Hermes Trismegistus) was "associated with the Moon" and was in fact a "Moon-God." Rather ironically he continues,

> This identification of Thoth with the Moon was of immense practical importance to Egyptian culture for the Moon's phases governed the great rhythms of flood and drought across the Nile delta. It was from these rhythms that the Egyptians measured time and seasons and Thoth became associated with the governance of Time itself. (p. 17)

It cannot escape our attention that the monthly cycles, as well as all rhythmic cyclical order, have from time immemorial been associated with the feminine. The Egyptian goddess Maat is not only the overall creatrix of order in the universe, standing above even the sun-god Horus, but Thoth, the wellspring from whom the Hermetic tradition is said to come, is in fact her masculine counterpart who shares all of her attributes including those of Logos, Order, and Truth (Budge, 1904: 400–416, Hooker, 1997). Thoth, by his connection with the Moon, is by inference a hermaphroditic god combining masculine and feminine creative power (Figure 1).[1]

There is good reason to believe that it is the presence of the feminine in the esoteric tradition, largely veiled or as in Goodrick-Clarke's case ignored, that is the heart of what makes the tradition esoteric (occult or hidden). It is

so because in the patriarchal fixation on a masculine God, the consequence of allowing the feminine archetype an equal place with the masculine is the foremost of heresies. The psychologist C. G. Jung felt that alchemy expressed an esoteric undercurrent within "official Christianity" due, among other factors, to the stress resulting from the absence of a feminine figure in the trinity (Wehr, 1987:252). A supporter of the Christianized version of the esoteric tradition may find the equal presence of the feminine discomforting. However, as I will suggest, key defining characteristics of WE actually flow from the presence of the feminine principle in parallel with the masculine.[2]

Figure 1. Energy flows from the breast of the goddess to the Earth below. (From an alchemical engraving).

Hermes Trismegistus and the Question of Origins

The major source of Western Esotericism, we are told, is a corpus of writings termed the *Hermetica,* covering such topics as magic, alchemy, astrology, and cosmology (p. 17). In pointing out that the *Hermetica* is attributed to Hermes Trismegistus ("Thrice Great"), Goodrick-Clarke identifies this individual simply as an "Egyptian sage." A confusion is immediately introduced as Goodrick-Clark proceeds in the following paragraphs to discourse on Thoth the Egyptian god, his attributes, and the Greek identification of Thoth with Hermes; but aside from one paragraph where he speaks of Hermes, Thoth, and the "Egyptian sage" together, he never indicates whether the latter is a real individual or the *god* Hermes–Thoth (pp. 17–18).

Indeed there is no place in the entire volume where I have been able to find him taking up the question of the historicity of Hermes Trismegistus.[3] Instead, he frequently lumps Hermes Trismegistus with the names of various known historical figures such as Moses, Pythagoras, and Plato (pp. 37, 45, 199). A clearer view is that provided by E. Wallis Budge: "Hermes Trismegistus . . . is the representation of the syncretic combination of the Greek god Hermes and the Egyptian god Thoth" (Budge, 1904:415).

In other words, "Hermes Trismegistus" is not a historical figure chatting with Plato and the "High Priest of Hermetic Secrets" Marsilio Ficino, as shown in a fanciful floor intarsia at the west entrance to the Siena Cathedral (p. 38), but a mythical being, a god. The key writings of the *Hermetica* come to the mundane world from a divine source, Hermes–Thoth. This is the essential argument for

the validity of the doctrine. There is an evident parallel here with the concept of the Bible having been written by God through human intermediaries, or the stone tablets conveyed by God to Moses. The Egyptian Book of the Dead describes the discovery of a mysterious stone slab beneath the feet of a statue of a god, inlaid with letters of lapis lazuli and containing esoteric wisdom. It was "a thing of great mystery, [the like of] which had never [before] been seen or looked upon" (Budge, 1904).

I have belabored this point because of the question of origins and authenticity of doctrinal claims. As the book proceeds, there are numerous places where one or another practitioner's personal representation of esoteric doctrine claims authority by means of a fanciful narrative tracing his or her knowledge back to mysterious sources in antiquity. To be fair, Goodrick-Clarke does seem to classify *some* of these claims as mythical, but even there he prefers the term "legendary." He is not often willing to say openly that there may be deliberate fabrications. As one reads along, the distinction among myth, fancy, and historical reality seems to become disturbingly ambiguous.

Idiosyncratic Esoteric Systems

The history of Western esotericism is constituted by the contributions of a series of doctrines, rituals, and secret societies, all of which offer variations on the same general themes and are typically associated with one or another key individual. To establish authenticity, a story is told, usually in the form of a quest by the practitioner to ancient sites, or receipt of wisdom from one or more sages or "Masters," or by means of a vision or visitation. The individuals telling these authenticating stories frequently change their own names to lend themselves more prestige. Guiseppe Balsamo, a novice monk who was expelled from his seminary, became the flamboyant magician and seer "Count Cagliostro" (1743–1795). Samuel Liddell Mathers (1854–1918), associated with the Order of the Golden Dawn, "added MacGregor to his surname" to give himself a Celtic aura and used the title Comte de Glenstrae (pp. 149, 198).

This charlatanesque and megalomaniacal syndrome is repeated over centuries. Yet Goodrick-Clarke does not, as far as I can tell, raise the issue of whether such individuals were charlatans or megalomaniacs seized by what Carl Jung referred to as psychological inflation brought on by the influence of archetypal imagery. From a Jungian point of view, the Hermetic/Alchemical symbolism is a potent cluster of archetypal materials which because of their numinosity can, in a susceptible individual, produce "An expansion of the personality beyond its proper limits by identification with . . . an archetype." It produces "an exaggerated sense of one's self-importance" (Jung, 1963).

Tellingly in this context, Jung says "it not infrequently happens that the archetype appears in the form of a *spirit* in dreams or fantasy products, or even

comports itself like a ghost" (Jung, 1960:205, Jung's italics). One has only to think of the esotericist Madam Helena Blavatsky's spirit friend, "John King," who painted a portrait of himself almost certainly using the hands and eyes of Madam Blavatsky (p. 215). Oddly, in the caption to a photo of the painting, Goodrick-Clarke simply states that John King himself painted the portrait (p. 215).[4]

The Principle of Correspondence and Scientific Esotericism

The Jungian interpretation of alchemical symbolism argues that the imagery and concepts of the esoteric tradition constitute a psychoactive *Symbol* whose potency is capable of activating personal self-transformation toward enlightenment, or in Jung's terminology individuation.[5] This perspective is in contrast to the *metaphysical* interpretation of esoteric symbolism which argues for the cosmological reality of the hierarchy of levels, the interpretation of the soul as a kind of non-physical entity, the predominance of the godhead as the creator, "backworlds," etheric bodies, and so forth. The Jungian view is thoroughly spiritual as it places the divinity within the psyche, while the latter view is "spiritual" in a more obvious way in that it posits a progression of the soul toward divinity within a real, if metaphysical, cosmic milieu.

But the latter also includes an additional factor of promoting psychological inflation by leading the devotee to believe he or she will come to perceive, and to gain control over, higher levels of "reality" and potentially be capable of "magical operations." The difference between the two is readily exemplified by the manner in which alchemical transformation of metals is understood. In the Jungian view, this is entirely a metaphor for the spiritual transformation of the psyche (Wehr, 1987:246); from the metaphysical point of view operations on the physical world, including transmutation of metals, are potential psychic powers that can be conferred on the devotee as he or she advances through the various ranks of the hierarchies.

Masonic, Rosicrucian, and similar "orders" trade upon this metaphysicalization of the esoteric symbolism by establishing analogous hierarchical levels of achievement for their members. In the milieu of this interpretation, powers of clairvoyance, talking with spirits, contacts with secret Masters, and other such claims by one or another proponent of the various idiosyncratic systems are seen as proofs of the transcendent reality.

It appears evident as one reaches Goodrick-Clarke's final chapter, that his interpretation of esotericism falls into the metaphysical category. This explains the ongoing ambiguity about authentication that is present throughout the text, as for example his uncritical report of how Christian Rosenkreutz, the originator of the Rosicrucian order, was "an adept in the transmutation of metals" who could have made a name for himself but instead chose to spend

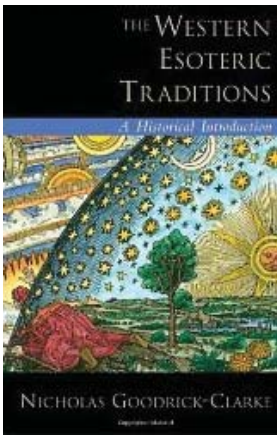
five years in quietude before founding his system (p. 109). He also uncritically reports "Count Cagliostro" as "achieving alchemical transmutations" (p. 147). Predictably, then, Goodrick-Clarke summarily dismisses the significance of the Jungian psychological interpretation except as Jung's emphasis on archetypes has influenced "New Age Religions" (p. 247). In his final chapter he seeks to show that esoteric concepts and procedures have entered the realm of scientific verification and stand poised to re-enchant science by infusing science with spirituality.

What, then, is the epistemological foundation for such a claim? The central concept behind the entire body of Western esoteric materials is the dictum referred to as the Maxim of Hermes Trismegistus, from *The Emerald Tablet*, said to be "one of the oldest surviving of all alchemical documents" and to be a "founding document" of renaissance esotericism following the fourteenth century (p. 72). The Maxim reads (in my rough translation),

> WHAT IS BELOW IS AS WHAT IS ABOVE,
> AND WHAT IS ABOVE IS AS WHAT IS BELOW,
> TO RENDER THE MIRACLE OF UNITY.

This rule or principle is intended to have cosmological significance.[6] Esoteric systems argue for a hierarchy of Worlds, or planes, from the lowest material realms to the highest spiritual existence, including the Godhead itself. By this maxim, there is a continuity of relationship running across all levels. But here a distinct question of interpretation arises. Generally speaking esotericists interpret this maxim as asserting a principle of correspondence, according to which things in the world that are similar in just about any way imaginable may influence one another. By implication, the esoteric adept may learn to use this correspondence to control or predict physical events. In other words, the maxim is seized upon (incorrectly as I shall argue) as a basis for various forms of sympathetic magic.

At this point we find Goodrick-Clarke's concept of "scientized esotericism" (p. 234). This refers to "empirical engagement of traditional esotericism with the natural world," i.e. to experiments carried out by esotericists which aim at proving empirically that such correspondences exist. He cites with enthusiasm, for example, alleged proofs of "nonlocal acausal" relations between planets and their "corresponding" metals (p. 238). According to Goodrick-Clarke, the German chemist Karl von Reichenbach (1788–1869) *showed that* "a new Odic force" was connected with water divination and other psychic phenomena. "Clairvoyant auras" discussed by esotericist C. W. Leadbeater were *empirically confirmed* as "magnetic radiations" (p. 241); and Homeopathic Medicine has offered *empirical proof* of its effectiveness (p. 242). With regard to the latter, Goodrick-Clarke makes the startling claim that "it posited a principle for which



there is no tangible evidence, yet its effects could be demonstrated." (Apparently demonstration of a theory does not provide tangible evidence, or else there is no clear relation between the theory and the experimental results.)

It is not my place here to offer critiques of these sorts of claims. I leave it to the reader, if he or she so wishes, to follow out the various reports of proofs cited by Goodrick-Clarke. I would point out, however, that since concepts of "correspondence" as a means of understanding and controlling nature have been around for millennia, such as studying the entrails of animals for clues as to the weather or the result of a battle, or noting the flight of birds to tell the future, or wearing a certain crystal amulet to ward off disease, if these means were truly effective we would have known about it by now.

However, in my opinion such "scientized" empirical "proofs" are based on a muddled, naïve understanding of the notion of "correspondence" (bolstered by the desire for acquiring magical powers) and really have little or no relation to the substantive underlying significance of esoteric concepts. They are, rather, superficial metaphysicalizations of ideas that represent, in symbolic and often veiled form, one fundamental notion that can be exemplified by recalling our earlier discussion of the presence of the feminine in esoteric thought.

The principle of analogy, or the Hermetic maxim, is not in my view a license for concocting correspondence theories of all sorts and attempting to prove them empirically. This is because there is one single analogical relationship to which the maxim refers. Its esoteric expression lies in the "Law of the Tetragrammaton." This law, in a more contemporary expression, is the idea that the entirety of creation is based on a particular dynamic process: the *synthesis of opposites* by means of energy, resulting in a change of level. Insofar as the world may be constituted by an evolutionary hierarchy, levels of that hierarchy develop out of one another both ascending and descending, producing a thoroughgoing nondualistic universe by means of the analogy of synthesis.

In a quite detailed account of this principle, esotericist Mouni Sadhu (actually Mieczyslaw Demetriusz Sudowski) makes clear that symbolically the opposites to be brought into relation by synthesis are represented by male and female elements (Sadhu, 1962:15–18). It follows that it is the *exclusion of the feminine creative principle*, the goddess if you will, by the patriarchal worldview, that stands in the way of a truly enlightened cosmology. I wish to devote the remainder of this review to a necessarily brief discussion of this concept.

Figure 2. Creation through synthesis. (From an alchemical engraving.)

The "Law of the Tetragrammaton" or the Law of Four is exemplified by the geometrical symbol of a triangle with a dot or an eye in its center (Sadhu, 1962:19). Two apices of the triangle represent the opposites, and the third represents the reconciling factor, seen as a form of universal energy. The center dot, or the eye, indicates a change of level, something truly new, arising out of the process of synthesis. It is an image of creation. Figure 2 from an alchemical engraving illustrates this in human terms, where the union of opposites is the sexual embrace. As such, it bears, of course, a deep relationship to the fundamental imagery of Tantric Buddhism, as I have pointed out elsewhere (McDaniel, 2010a).

In Figure 2 we have the copulating male–female principles (points 1 and 2 of the triangle of synthesis), in the "alchemical vessel" which itself has cosmological significance as representing a requirement for containment.[7] The third factor, energy of synthesis, is the fire of the alchemist's oven (not shown in this particular image but inferred) which brings about the transformation. Above the couple, moving upward, is the child, the fruit of their union, i.e. the fourth factor representing a change of level. This entire process is one of creation and movement "upward." The final and most important message behind this symbol is that because of the possibility of creativity, freedom results. Freedom in the image is represented by the open mouth of the vessel showing seed-pods, living things, emerging upward. In other alchemical images these are replaced by birds whose winged flight can take them upward. Such birds, usually doves, represent the spirit or the soul. Significantly it is through the synthesis of opposites that soul emerges.

How does this concept, based on the Maxim of Hermes Trismegistus as the analogy giving continuity to all levels of existence (i.e. matter, life, and mind), affect the science of cosmology? The fundamental dualistic schism is undoubtedly that of the brutal severance of consciousness from matter. What this principle indicates is that the universe cannot come into being, and cannot evolve, without the presence of both consciousness and matter at the turning-point of its origin. In other words, cognitive science can go nowhere as long as consciousness is thought either not to exist, or to exist only as a "supervening property" of matter when it reaches a certain stage of complexity. Instead, complex forms cannot evolve from less complex forms without the operation

of both consciousness and matter. Our "scientific" understanding of the world is incomplete. If, as philosopher Colin McGinn argues, physical limitations of our human brains will never allow us to integrate consciousness with matter, then indeed we are in a sad state with nowhere to go. But the message of esoteric philosophy is that the mouth of the vessel is open.

Notes

[1] A detailed discussion of the relation between the ancient tradition of the Mother–Goddess and the alchemical vessel with respect to the limitations of patriarchal consciousness stemming from denial of the creative feminine principle is to be found in Neumann (Neumann, 1963:57–63, 326).

[2] Figure 1 is from an engraving attributed to M. Merian and is found in Johannes Fabricius' *Alchemy, The Medieval Alchemists and Their Royal Art*, p. 161 (Texas Bookman paperback, 1996). Note that the ray of lifegiving energy emerges from the solar breast. The creatrix here combines male and female elements indicated by the sun–moon emblems at her breasts, even as does the pairing Thoth–Maat.

[3] There has been considerable speculation as to the meaning of the name *Trismegistus*. What is seldom, if ever, mentioned is that the goddess of the ancient Mediterranean, like the goddesses such as Maya–Shakti in India, are forever depicted as *triple*. For example, the triple godhead Brahma, Vishnu, and Shiva is complemented by the three consorts, Saraswati, Parvati, and Lakshmi, called together the Trimurti. The "Triple Hermes" thus exhibits the threefold character of the goddess.

[4] It is my speculation that the early impressions of the 10-year-old later to become Madam Helena Blavatsky, who at that young age encountered a significant library of esoteric volumes in her home, overwhelmed her with a severe case of inflation which lasted her entire lifetime.

[5] For Jung, "Symbol" with a capital "S" is differentiated from arbitrary symbol due to the former's psychoactive property, which in turn is based on its capacity for activating the archetypal process of personal development.

[6] I cannot resist the impulse here to cite one of the riddles in J. R. R. Tolkien's *The Hobbit*. The riddle is "An eye in a blue face/saw an eye in a green face. That eye is like to this eye/But in a low place/Not in a high place," the answer to which is "Sun on the daisies." The image has a clear alchemical reference.

[7] In McDaniel 2010a, I suggest that gravitational force is the initial facilitator of the requirement for containment. Without the gravitational "container," forms are incapable of development.

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Electronic Voices: Contact with Another Dimension? by Anabela Cardoso. O Books, 2010. 236 pp. $24.95 (paperback). ISBN 9781846943638.

This book is essentially a narrative of Anabela Cardoso's discovery of electronic voice phenomenon (EVP) and instrumental transcommunication (ITC), which are phenomena in which electronic devices are used for the purpose of communicating with the deceased. The author starts out with a few definitions and brief historical survey; then describes how she tried to help a bereaved mother by setting up ITC and EVP experiments in a room in her house; the developments that occurred as she continued her experimentation; her founding of the *ITC Journal*; and ends the book with several chapters in which she discusses the methods used, the substance of the information received, and the various issues that come up with this type of research. Cardoso should be lauded for the integrity, patience, and tenacity that she appears to have exhibited toward this subject matter over the course of many years. Although, as I explain below, I would like to have seen a more critical approach taken toward the subject matter, I do recommend this book for anyone interested in anomalous phenomena generally and the survival hypothesis specifically.

My main criticism is the lack of a sufficiently critical stance by Cardoso to these types of phenomena and the results of her experimentation. This begins with her uncritical acceptance of the canonical history of ITC research. For example, she fails to adequately review the criticisms against the EVP research

of the Latvian writer Konstantīns Raudīve. From the available evidence, it is reasonable to suppose that much of the meaning of the sounds that he captured on tape were projections of his own imagination (Barušs, 2001). Well, consideration of such pareidolia raises the obvious problem facing EVP, namely the constructive nature of acoustic perceptions. For instance, in psychology experiments in which a single syllable is played repeatedly to participants, they report a sequence of various phrases and words. This is known as the "verbal transformation effect" (Warren, 1968). Given that EVP researchers usually need to listen repeatedly to the same acoustic signals in order to understand their meaning, they would naturally be subject to the verbal transformation effect. For example, Cardoso says "Carlos and I listened to the recording but we could not understand with certainty the content of all the utterances besides 'dificil' and 'outro mundo'. Nevertheless, we realized, without doubt, that something amazing had happened." (p. 63). It took her several days and help from several other listeners to come up with a meaningful interpretation in Portuguese and Spanish including "a very odd syntactic construction in Portuguese" (p. 64). Elsewhere, Cardoso addresses this problem by saying that "it is the role of the serious, committed ITC researcher to differentiate between what carries real, objective meaning and what does not" (p. 192), but I feel that she could have applied that advice more scrupulously both to her own research and that of others. Nor do I find her appeal for the use of sound editing software an assurance, given that the software used to "clean the noise" (p. 186) presupposes that there is a signal amidst the noise in the first place, with the result that the sound editing software could intrinsically erroneously help to create the appearance of meaningful voices.

If, after taking the previous objections into consideration, EVP voices are sufficiently articulate and contain enough specific information, then they could be considered to be anomalous. What is "sufficient" and "enough" are matters of judgment, and, in the case of Cardoso's EVP voices, David Fontana, in his Foreword to the book, says "The voices were clear, at normal volume, and beyond the possibility of any doubt. There was no sign of the faint, almost unintelligible voices obtained by some ITC experimenters" (p. 3). But even if these were anomalous voices, they cannot necessarily be attributed to deceased relatives, dogs, and so on, as Cardoso does. They could be the result of remote influencing on the part of those connected to the experiment. The author addresses the psychokinetic hypothesis, but considers it "to be the peak of absurdity" (p. 112).

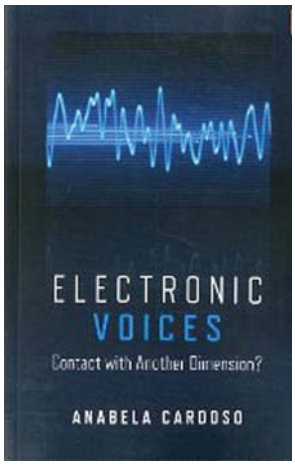
> We have to accept that the communicator takes the active role and the experimenter the passive role in producing communications, and this holds true even if we take the view that the experimenter in some way makes an active contri-

> bution through the action of his/her mind on the radio or the recorder through the operation of some form of unconscious psychokinesis. (p. 154)

Cardoso insists on attributing the source of the voices to the deceased. If the voices were anomalous, then they are clearly the result of psychokinesis. But the question of agency remains—the living, the deceased, some other entity or natural process, or combination thereof.

To see why there could be a problem with the attribution of agency, let us consider an example given by Cardoso. Upon visiting Cardoso and in the presence of her equipment, Fontana said "Rio do Tempo, can you say 'How are you?'" (p. 87), with the apparent result that "a loud, clear, perfectly formed masculine voice replied back, 'How are you?'" (p. 88). If I had the same equipment running in my lab but this were labeled as an experiment in remote influencing, I would attribute the response to remote influencing and not to the activity of the deceased. Similarly, if a FieldREG goes high for me, then I interpret that as the presence of resonance, not as a message from the dead. Within a broader conceptual framework, ITC is just poltergeist activity with particularly nuanced manipulation of physical manifestation. And there are examples of poltergeist activity in which the living clearly appear to be initiating it. For instance, Cardoso appears to be unaware of the Philip experiment demonstrating the extent to which we, the living, can be the authors of poltergeist activity. In the early 1970s members of the Toronto Society for Psychical Research created a fictional character they named "Philip." Subsequent rapping and table movements occurred during séances in which Philip correctly answered questions about himself. Essentially what happened was that the poltergeist phenomena mirrored the expectations of the participants in the experiment (Owen, 1976). Similarly, Cardoso's electronic voices could be a reflection of information from those who are involved in her experiments. Cardoso's counterargument would likely rest on the specificity of correct information about the deceased provided during the ITC sessions. But that just brings us back to the standard mediumship conundrum, namely, that correct information produced by a medium, or, in this case, by ITC, could be accounted for by the super-ESP hypothesis, and is not, of itself, proof of survival. In other words, the information contained in EVP need not be confined to the state of knowledge of those who are involved in Cardoso's experiments. And the super-ESP hypothesis is not nearly as easy to discharge as it might at first appear to be (Braude, 2003). There is lots of evidence that we shape the substance of the experiences that we have, including anomalous experiences, and that evidence has to be adequately taken into account in any serious discussion of the meaning of EVP and ITC phenomena.

Placing agency back on the experimenter does not delimit the extent to



which our expectations can manifest in apparently objective form. The Toronto group considered the possibility that Philip was a *tulpa*, a thought form that they had created that had acquired objective existence. But then, if there is any truth to that contention, we must also consider the possibility that the apparent deceased relatives, dogs, and so on, that we encounter through ITC are thought forms that exist as somebody's or something's creation and not the living entities themselves that we think we are encountering (cf. Barušs, 1996).

Not only is it prudent to not jump to conclusions about who or what we have apparently contacted through ITC but it is also wise to critically evaluate whatever pronouncements we think we have received. Cardoso assumes that whatever she thinks she has heard must be true.

> They convey to me the vision of a superior world much fairer than our own. . . . A world that, therefore, is 'closer to the truth', as communicators from Rio do Tempo have told me. (p. 84)

For instance, "My communicators tell us that the time of death is predetermined" (p. 100). Last fall, a medium whom I had invited to give a guest lecture in one of my classes, had a message for one of the students from the student's great-grandmother who had lived into her 90s before dying of old age: "You choose the time of your death." So who is right? Cardoso's "communicators" or my student's "great-grandmother"? During an ITC experiment that I conducted in my laboratory, the same medium had the impression that the level from which electronic apparatuses could be affected was analogous to a rough neighborhood in which one could get mugged (Barušs, 2007). Decent people do not go there. That leaves the pretenders, liars, stray thought forms, *astral goons*, et al., and the occasional brave relative who has no idea how to affect the radios, tape recorder, or whatever. There is no reason to suppose, even if we have made contact with someone or something at some other level of reality, that they know what they are talking about, even if they pretend that they do. It is reasonable to suppose that the deceased retain knowledge that they possessed during their lifetimes, but why should we expect them to suddenly be experts on matters, such as the timing of one's death, about which they likely knew little while they were alive (Barušs, 1996)? At this point Cardoso might argue that she has contact with Rio do Tempo, known as "Timestream in English"

(p. 78), which is supposed to be a transmitting station in the "next world" (p. 77), with nice, knowledgeable, dead people and entities sending the messages. But by now I think that I have made my point. There are numerous steps that need to be taken at each stage of the interpretation process, none of which is automatic. How much of the canonical history of EVP and ITC is fictional and how much of it can be trusted? Are we just listening to noise or are there really anomalous voices present? If there are anomalous voices present, are we creating them ourselves through super-psi and remote influencing, or is there some other source for them? If there is some other source for them, is that source just astral goons or is it deceased relatives, friends, dogs, and non-human intelligent beings? And if we are talking to whom we think we are, then how do we know that they know what they are talking about? I would like to have seen Cardoso put more serious effort into negotiating each of these steps.

I agree fully with Cardoso, whose own background is in the humanities (p. 173), that ITC requires robust scientific exploration. Something is happening, and we need to direct resources toward understanding it. The book itself is reasonably well-written and fairly clean in terms of editing. An index is necessary, though, for a book that is a serious presentation of its subject matter. Apparently there is a compact disc that is supposed to accompany this book which I did not receive and, hence, could not evaluate. In conclusion, I commend Anabela Cardoso for her investigations and for telling us about them! I just ask that she and other researchers please address adequately the points that I have raised.

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Manufacturing Depression: The Secret History of a Modern Disease by Gary Greenberg. Simon & Schuster, 2010. 448 pp. $17.82 (hardcover), $10.93 (paperback), $9.99 (Kindle). ISBN 9781416569794.

Instructions on how to write a book review say that the reviewer must do three things:

1. Read the book—an obvious but not always followed first step.
2. Figure out what the writer is saying—an important and occasionally difficult step.
3. Formulate reactions to the book.

Reading *Manufacturing Depression* by Gary Greenberg was not, as is all too often the case, a difficult task. I found the book to be, for want of a better word, entertaining. Given that Greenberg is a seasoned journalist, contributing to such popular magazines as *Rolling Stone* and *Mother Jones*, that's hardly surprising.

But figuring out what he is saying was another matter entirely.

Granted, Greenberg does state up front that he is raising complex questions and goes so far as to warn the reader that his book will not end the confusion. As he explains it, "in part, that's because my subject is not the drugs so much as the condition they purport to treat, the disease of depression" (p. 7).

I'm OK with his starting off this way and usually I'm favorably impressed by writers who acknowledge complexity and refuse to fall back on easy answers.

We do, as he points out, live in a society in which "depression" is a hot topic with people arguing about what it means, wondering whether they are or are not depressed, and weighing the various treatment options. Conflicting messages abound.

His warning, however, did not prepare me for the magnitude of the confusion and the massive onslaught of mounting contradictions.

This level of befuddlement can't be attributed to the complexity of the topic, but seems, rather, to reflect the muddled mind of an author who chooses to speak at different times in different voices. Sometimes he's writing as a social critic investigating depression while at other times he's speaking as a patient battling his own depression or as a psychotherapist drawing on his experience in treating depressed patients.

When he's maintaining a reasonably detached critical tone, it's relatively easy to figure out what he's saying. In this voice, he's describing how we've come to redefine "unhappiness" and "discontent" as an illness called depression. He's telling stories about Kraeplin, Meyer, Freud, and "the shock doctors" and pulling together documented descriptions of young professions trying to achieve maturity, respect, and power. He's focusing on the co-reliance of psychiatry

with its ever-changing diagnostic (DSM) manual and the pharmaceutical industry with its ever-expanding pharmacopeia and explaining how this co-operation serves not to benefit patients but rather to expand the playing field for psychiatry and the financial gain for Pharma. And he's discounting the various attempts to make all of this appear scientific, including the various efforts to use brain scan technologies to prove that depression is tangible, measurable, and thus "real."

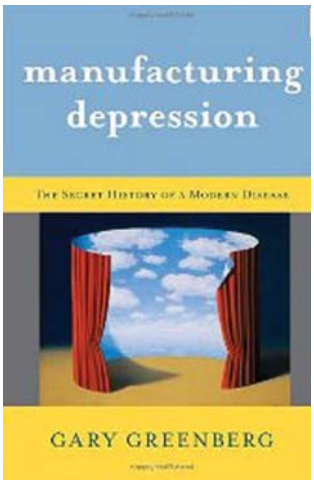
These arguments are familiar to anyone who has read other books challenging the "depression as a disease" model that permeates our society. Here they serve to raise, and give substance to, the questions Greenberg says are the complex topic of his book.

At the beginning of the book, this critical tone predominates. But soon, Greenberg assumes his role as a "real-life patient," who, while saying that he suffers from "depression," does and doesn't accept the diagnosis of depression. Here confusion seeps, and eventually floods, in. Informative, well-argued material becomes interspersed with, and eventually drowned out by, personal stories, doubts, inner conflicts, and fuzzy thinking.

This starts early on when, midway through the first chapter, he recounts an experience with depression that occurred some decades earlier, telling us later in the book how it was relieved through the use of the psychedelic drug Ecstasy (MDMA).

Starting in Chapter 3 and then repeatedly throughout the book, he talks about a recent (2006) episode of depression during which he volunteered to participate in a double-blind study on the effectiveness of an antidepressant drug. He announces that, having been diagnosed by a highly respected Harvard psychiatrist, he became at that time "an officially depressed person" (p. 38). Demonstrating disgruntled revelry, he recounts how he was upgraded from the "minor" to the "major" depression group and then bemoans the lack of attention paid by the researchers to his feelings and "interior life." This is a common complaint of patients and one that, in this context, demonstrates Greenberg's failure to appreciate how such conversation would serve to contaminate the research. After the study has ended he seems to be feeling better and wants to know whether that's because the drug worked. When the researchers refuse to tell him which group he was in, he becomes annoyed and eventually, when he discovers that he was receiving a placebo, he seems to think that cured him.

As he recounts his experiences as a patient/subject in this research, he portrays himself as something of an undercover sleuth who volunteered so that he could expose drug research for the sham he seems to believe it to be. And he takes on this sleuthing role for a second time when he tries out cognitive behavior therapy (CBT) and concludes that its benefits (whatever they may be) are sort of like the drugs and serve to support the notion that depressed patients are sick.



Near the end of the book Greenberg refers to another of his bouts of depression—this time claiming that a house renovation cured it—whether he thinks it was cured by the physical activity or the satisfaction he felt with the project or just by taking his mind off what was making him feel depressed is anybody's guess.

In his third voice, that of a psychotherapist who speaks from his professional experience with severely disturbed (i.e. depressed) patients, the message is nothing short of mind-boggling. While taking on his therapeutic persona he condemns but apparently acquiesces to the demand for a diagnosis in order to be paid by insurance companies, wrestles with what he understands depression to be while suggesting that in many, or even in most, cases, depression may be an aspect of life to be examined and accepted rather than an illness to be treated.

At times he refers to his "major depression" as a "disease, ready to be coded on the insurance form" (p. 250), and writes that depression can "rightly be considered a disease that can be cured by drugs" (p. 23). Curiously this pronouncement comes only a few lines after he expresses his intention "to show you (the reader) how depression has been manufactured right before your eyes" (p. 23). Greenberg seems to see his depressed patients as ill and in need of treatment while at the same time casting them as individuals who have been led to believe that they are sick in order to benefit psychiatry and the drug company. He doesn't deny that drugs work, and, in fact, he claims "I know, through my own experiences as both a therapist and . . . as an officially depressed person that drugs . . . do work" (p. 24). But then he qualifies (or confuses) the point by saying "although not necessarily the drugs that Pharma is selling," a reference later clarified to refer to Ecstasy and LSD.

And he seems to believe that what he does as a psychotherapist (whatever that may be) is good though he has his doubts. At one point, contrasting what he does to what cognitive behavior therapists do, he says:

> I'm always catching a case of self doubt. . . . I'm wondering if I've failed my patients and myself, if I've frittered away twenty-five years of my life and millions of their dollars by focusing on the tractors and the strawberries and all their possible meanings, by the inescapable and sometimes intentional inefficiencies of this method, by my nearly wilful avoidance of anything resembling accomplishing work, by my possibly blind and certainly unscientific

> belief that the best we can do is to integrate all that we can of ourselves into a good story. . . (p. 297)

Greenberg talks on and on about depression, admitting that he doesn't know what to make of it (his or anyone else's); then, finally he tell us what to do. And what's his solution? Well, he claims that the closest to advice he's going to give is: "Whatever else you do, don't let the depression doctors make you sick" (p. 339). On the final pages he reiterates this advice; then, he ends the book saying:

> Call your sorrow a disease or don't. Take drugs or don't. See a therapist or don't. But whatever you do when life drives you to your knees, which it is bound to do, maybe it is meant to do, don't settle for being sick in the brain. Remember that's just a story. You can tell your own story about your discontents, and my guess is that it will be better than the one that the depression doctors have manufactured. (p. 367)

Feeling confused? This is only a taste of the confusion and contradiction to be found between the covers of this book.

By the time I reached this point in writing the review I was utterly confused and sorely tempted to end on a one-word reaction—CONFUSED.

However the task of writing a book review requires a bit more. So, after clearing my head as best I could, I came back to the task of formulating reactions.

Manufacturing Depression is, I think, just one of a number of books that have appeared in recent years (several of these have been reviewed by me here)—all with a tediously similar storyline. Like this one, with its subtitle *The Secret History of a Modern Disease*, each claims to be uncovering a secret—saying something so entirely new and exciting that it's worthy of being called "news". Most do a reasonably good job, as does this one, of providing a critique of psychiatry, psychiatric diagnoses, and pharmaceutical cures.

But at some point each of these books veers off in the direction of the author's own bias.

In this instance, that bias is evident from near the beginning when Greenberg, having said that his book won't end the reader's confusion and attributes that, in part, to the complexity of the topic, goes on to say that it's also because "ongoing uncertainty is a hazard of reading a book by an old-fashioned psychotherapist like me . . ." (p. 7).

There he's hit his bias on the head. His views about depression (and about life) date back about half a century to the counterculture of 1960s and 1970s. That's when pop psychology was all the rage, psychedelic drugs were raising consciousness, and the idea took hold that life is "all about me." Everyone, it seemed, needed a bit of psychotherapy for, as the Polsters said, "Therapy is too

good to be limited to the sick" (Polster & Polster, 1973:7). Psychotherapists, of a humanistic bent, came to understand their job to be one of encouraging their patients to manufacture their own healing, narcissistic stories.

Greenberg, it seems, is a therapist/patient who believes deeply in the "mantra" of that by-gone era. And *Manufacturing Depression* isn't so much a critique of depression in 21st-century society as it is a telling of his own personal story.

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References

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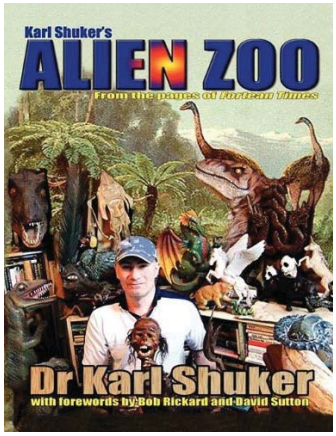
Karl Shuker's Alien Zoo by Karl P. N. Shuker. CFZ (Centre for Fortean Zoology) Press, 2010. 392 pp. $26.99, softcover. ISBN 9781905723621.

This book is an excellent introduction to cryptozoology as well as a feast for people already interested in the subject. There are interleaved chapters dealing on the one hand with specific topics in some depth, on the other hand with snippets of relevant news items from the years 1995 to 2010, arranged chronologically. The items are from columns Shuker wrote for *Fortean Times*, and several have been updated with more recent information.

The wide scope of cryptozoology is illustrated, and the approaches to specific subjects illuminate the inevitably interdisciplinary character of cryptozoological research: an inescapably needed background of zoological knowledge, plus sophisticated understanding of how to weigh different kinds of evidence, which ranges from actual specimens through photographs and paintings of (claimed) specimens through written reports from the most varied sources to, not least, eyewitness accounts.

That complexity calls for expert guidance, and Shuker is fully equipped to provide it, with a Ph.D. in zoology, membership in learned societies, and long fascination with and work in cryptozoology. Those credentials do not necessarily entail good judgment, of course, and in this vital respect Shuker is very trustworthy indeed. He is determinedly skeptical and his assessments are based squarely on empirical evidence. In cryptozoology as in anomalistics more broadly, the rarest and most desirable resources are compendia that can be relied upon to be factually accurate and judicious in making judgments. In those



respects, I rate Shuker's works as highly as I (and others, of course) rate the works of Jerome Clark. As to specifically cryptozoology, Shuker's work inevitably reminds one of that of Bernard Heuvelmans, often described as the founder of cryptozoology and also a zoologist by orthodox training. Heuvelmans broke barriers and displayed the bravado needed by those who bring into existence some new institution or subject; Shuker displays the qualities needed by the successors who bring more order and judiciousness to the field.

Alien Zoo offers the pleasure of browsing in the knowledge that one will be able to enjoy it over a long time: Each of the "topic" chapters is an independent essay, and the collections of news snippets in each year or set of years can be taken in one or in several gulps.

The introductory essay, debunking a story published by a quite well-known writer on oddities of Nature, sets the stage appropriately by illustrating Shuker's diligent perseverance in tracking down evidence and then determinedly hewing to that evidence.

Over the years I've read quite widely in cryptozoology, yet I found new specifics here as well as welcome interpretations of more familiar subjects, for instance on the "mystery cats" reported from all sorts of places around the world. New to me were such things as angel feathers, bacteria reproducing in clouds, or the possible relationship between fruit bats and primates—the latter highly instructive about the complex task of tracing evolutionary lineages even in the era of DNA analysis.

I recommend *Alien Zoo* highly and without reservation. Readers should not neglect what looks at first like many pages of advertisements at the back of the book: On pp. 381–382 there is a list of other works by Shuker that those who appreciate *Alien Zoo* will then want to read, too. One of my own favorites is the 1995 *In Search of Prehistoric Survivors.*

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Articles of Interest

The Origin of Purportedly Pre-Columbian Mexican Crystal Skulls by Margaet Sax, Jane M. Walsh, Ian C. Freestone, Andrew H. Rankin, and Nigel D. Meeks. *Journal of Archaeological Science, 35*(10) (2008), 2751–2760.

Crystal Cranium by Owen Edwards. *Smithsonian, 39*(4) (2008), 20.

Legend of the Crystal Skulls: The Truth Behind Indiana Jones's Latest Quest by Jane MacClaren Walsh. *Archaeology, 61*(3) (May/June 2008), 36–41.

A carved-rock crystal, life-sized human skull of mysterious but allegedly ancient Mesoamerican origin and now housed in the British Museum has, over the years, had various mystical powers attributed to it (see, for example, Chris Morton and Ceri Louise Thomas, 2002 [1997], *The Mystery of the Crystal Skulls: Unlocking the Secrets of the Past, Present, and Future,* Rochester, VT: Bear & Company; David Hatcher Childress and Stephen S. Mehler, 2008, *The Crystal Skulls: Astonishing Portals to Man's Past,* Kempton, IL: Adventures Unlimited Press). The genuineness of the supposed pre-Columbian provenance of this sculpture, as well as of a second one held by the Smithsonian Institution—for which no proof has been ever been forthcoming—has been much debated. Now, a team has subjected the skulls to scientific examination. The researchers found that the carving was accomplished with the use of rotary wheels, which did not exist in pre-Columbian America, and that Carborundum, a modern synthetic abrasive, was used on at least the British skull. The material of the latter appears to have come from either Brazil or Madagascar, not Mexico; the quartz of the former could have originated in Mexico or the U.S. The British skull was made sometime before 1885, presumably in Europe, and the Smithsonian one probably in Mexico during the 1950s. The authors do not address the paranormal effects sometimes assigned to the skulls. Walsh has also studied other, less spectacular crystal skulls, numbers of which surfaced during the nineteenth century. She believes that many were made in Germany during the late nineteenth century. One, dubbed "The Skull of Doom," appeared in 1943, and its owner claimed to have found it during the early 1920s, in a temple in British Honduras (Belize). The crystal of some skulls have inclusions characteristic of quartz occurrences in the Swiss Alps. In fact, for $10,000 one may buy online a skull manufactured to order in Germany.

Follow the Kelp by Heather Pringle. *New Scientist, 195*(2616) (2007), 40–43.

Kelp Highways by Heather Pringle. *Discover* (June, 2008), 38–43.

In contrast to earlier scenarios of Ice Age hunters following big-game animals on foot across the then-dry Bering Strait into North America when sea levels were lower some 12,000 years ago, many archaeologists have recently come to favor an earlier initial human entry into the Western Hemisphere, via the Pacific littoral and employing boats. Science writer Pringle describes this developing theory and one of its researchers, Jon Erlandson of the University of Oregon, speaks of a trail of rare but distinctive dart points with flaring barbs that dot the Pacific Rim from Japan to Chile. This may reflect an 18,000–15,000-years-ago coastwise movement, although most of the potential evidence now lies deep underwater owing to post-Pleistocene sea-level rise. Much of the route would have paralleled a familiar and biotically productive offshore ecosystem, the "forest" of kelp seaweed. Southern Chile's near-coast Monte Verde site dates to more than 14,000 years ago, and (as reported after Pringle's article appeared) has yielded nine species of marine algae.

This vision of a maritime movement to America is but a part of the growing consciousness of very early human use of, and movement by means of, watercraft. Modern humans evolved in Africa some 200,000 years ago. Shellfish-gathering as old as 164,000 years has been identified in South Africa. Genetics indicates that people moved from Northeast Africa to the Arabian Peninsula as many as 70,000 years ago across the then-narrower Bab el Mandeb at the Red Sea's mouth, spreading coastally eastward and across the Strait of Hormuz, ultimately reaching Australia by traversing Indonesia's water gaps prior to 50,000 years ago. Humans settled islands well off Japan's shores by 32,000 years ago (and, as the article fails to note, reached some of the islands of eastern Melanesia equally early). There are even indications that the pre-*sapiens* human *Homo erectus* arrived on the Indonesian island of Flores by water more than 800,000 years ago. In the New World, greater genetic diversity of coastal Native Americans supports the notion of the first entrants having been shoreline-dwellers. Although "Twenty years ago, most archaeologists would simply have laughed at the idea of Ice Age mariners colonizing the globe" (Pringle 2008:43), that is exactly the picture that is emerging.

Radiocarbon and DNA Evidence for a Pre-Columbian Introduction of Polynesian Chickens to Chile by Alice A. Storey, José Miguel Ramírez, Daniel Quiroz, David B. Burley, David J. Addison, Richard Walter, Atholl J. Anderson, Terry L. Hunt, J. Stephen Athens, Leon Huynen, and Elizabeth A. Mattisoo-Smith. *Proceedings of the National Academy of Sciences USA, 104*(25) (2007), 10, 335–339.

Most scholars have assumed that the chicken, a Southeast Asian domesticate, was absent in the pre-Columbian Americas. Now, Alice Storey's team of researchers from several countries has identified and analyzed bones from a minimum of five chickens in the near-coast site of El Arenal-1 on south-central Chile's Arauco Peninsula, in historic Mapuche Indian territory. The site was occupied between A.D. 700 and 1390, and a chicken-bone sample yielded a carbon-14 date of 622 ± 35 B.P., i.e. a calibrated date of A.D. 1321–1407. Mitochondrial DNA obtained from the bones proved to be identical to that of contemporaneous pre-Columbian chicken bones from Western Polynesia's American Samoa and Tonga, some 8,050 kilometers (5,000 mi.) away, and slightly different from mtDNA in bones from Hawaii, from Easter Island, from Yunnan in China, and from Vietnam. Chile's contemporary blue-egg–laying Araucana chicken, taken note of more than a half century ago by geographer Carl O. Sauer, appears to descend from the Polynesian breed. The mtDNA of later chickens from Easter and Hawaii resembled that of chickens from Indonesia's Lombok, from the Philippines, and from Thailand, suggesting two separate introductions of *Gallus gallus* into the Pacific islands—a suggestion first forwarded by George F. Carter in 1971 on linguistic grounds. Earliest archaeological dates for chickens in Oceania so far are from the Reef/Santa Cruz islands circa 3,000 years ago and from Vanuatu shortly afterward. Various cultural phenomena among the Mapuche also suggest Polynesian inputs, and undated chicken bones have been known of for some years.

In Search of the World's Most Ancient Mariners by Michael Balter. *Science, 318*(5849) (2007), 388–389.

Balter reports on a Cambridge conference on Global Origins and Development of Seafaring. There was disagreement among the conferees as to whether early crossings of Southeast Asian straits were accidental or purposeful. Because of the lack of comparable evidence elsewhere, many felt that Michael Morwood's

800,000+ B.P. *Homo erectus* tools on water-surrounded Flores (M. J. Morwood, P. B. O'Sullivan, F. Aziz, & A. Raza, Fission-track ages of stone tools on the East Indonesian Island of Flores, *Nature, 392*(6672) (1998), 173–176) represent a fluke, involving not maritime technology but, rather, accidental drift on floating natural rafts of vegetation; modern humans did not cross the water gaps of Wallacia from Sunda to Sahul until 50,000 or 60,000 Y.A. Accidental drifts on family-operated bamboo rafts might have been adequate to establish minimum viable populations of from five to ten persons. About 30,000 Y.A., people of Sahul developed the watercraft and the navigational ability to colonize the islands of Near Oceania. Island colonization in the Mediterranean has been thought to have occurred much later (ca. 13,000 Y.A.), perhaps because this much-less-productive water body did not encourage the development of sea-going (but recent discoveries put human occupation of Crete at more than 130,000 Y.A.).

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