



JOURNAL OF SCIENTIFIC EXPLORATION

A Publication of the Society for Scientific Exploration

(ISSN 0892-3310)

Editorial Office: *Journal of Scientific Exploration*, Society for Scientific Exploration, Kathleen E. Erickson, *JSE* Managing Editor, 151 Petaluma Blvd. So., #301, Petaluma, CA 94952 USA
EricksonEditorial@gmail.com, 1-415-435-1604, (fax 1-707-559-5030)

Manuscript Submission: Submit manuscripts online at
<http://journalofscientificexploration.org/index.php/jse/login>

Editor-in-Chief: Stephen E. Braude, University of Maryland Baltimore County

Managing Editor: Kathleen E. Erickson, Petaluma, CA

Assistant Managing Editor: Eve E. Blasband, Larkspur, CA

Assistant Managing Editor: Elissa Hoeger, Princeton, NJ

Associate Editors

Carlos S. Alvarado, The Rhine Research Center, Chapel Hill, NC

Daryl Bem, Ph.D., Cornell University, Ithaca, NY

Robert Bobrow, Stony Brook University, Stony Brook, NY

Courtney Brown, Emory University, Atlanta, GA

Etzel Cardeña, Lund University, Sweden

Jeremy Drake, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

Bernard Haisch, Digital Universe Foundation, USA

Michael Ibison, Institute for Advanced Studies, Austin, TX

Roger D. Nelson, Princeton University, Princeton, NJ

Mark Rodeghier, Center for UFO Studies, Chicago, IL

Daniel Sheehan, University of San Diego, San Diego, CA

Michael Sudduth, San Francisco State University, CA

Society for Scientific Exploration Website — <http://www.scientificexploration.org>

Editorial Board

Chair, Prof. Richard C. Henry, Johns Hopkins University, Baltimore, MD

Dr. Mikel Aickin, University of Arizona, Tucson, AZ

Dr. Steven J. Dick, U.S. Naval Observatory, Washington, DC

Dr. Peter Fenwick, Institute of Psychiatry, London, UK

Dr. Alan Gauld, University of Nottingham, UK

Prof. Robert G. Jahn, Princeton University, NJ

Prof. W. H. Jefferys, University of Texas, Austin, TX

Dr. Wayne B. Jonas, Samueli Institute, Alexandria, VA

Dr. Michael Levin, Tufts University, Boston, MA

Dr. David C. Pieri, Jet Propulsion Laboratory, Pasadena, CA

Prof. Juan Roederer, University of Alaska-Fairbanks, AK

Prof. Peter A. Sturrock, Stanford University, CA

Prof. Yervant Terzian, Cornell University, Ithaca, NY

Prof. N. C. Wickramasinghe, Churchill College, UK

SUBSCRIPTIONS & PREVIOUS JOURNAL ISSUES: Order forms on back pages or at scientificexploration.org.

COPYRIGHT: Authors retain copyright to their writings. However, when an article has been submitted to the *Journal of Scientific Exploration*, the *Journal* holds first serial rights. Additionally, the Society has the right to post the published article on the Internet and make it available via electronic and print subscription. The material must not appear anywhere else (including on an Internet website) until it has been published by the *Journal* (or rejected). After publication, authors may use the material as they wish but should make appropriate reference to *JSE*: "Reprinted from [title of article]", *Journal of Scientific Exploration*, vol. [x], no. [xx], pp. [xx], published by the Society for Scientific Exploration, <http://www.scientificexploration.org>."

Journal of Scientific Exploration (ISSN 0892-3310) is published quarterly in March, June, September, and December by the Society for Scientific Exploration, 151 Petaluma Blvd. So., #301, Petaluma, CA 94952 USA. Society Members receive online *Journal* subscriptions with their membership. Online Library subscriptions are \$135.



JOURNAL OF SCIENTIFIC EXPLORATION

A Publication of the Society for Scientific Exploration

AIMS AND SCOPE: The *Journal of Scientific Exploration* publishes material consistent with the Society's mission: to provide a professional forum for critical discussion of topics that are for various reasons ignored or studied inadequately within mainstream science, and to promote improved understanding of social and intellectual factors that limit the scope of scientific inquiry. Topics of interest cover a wide spectrum, ranging from apparent anomalies in well-established disciplines to paradoxical phenomena that seem to belong to no established discipline, as well as philosophical issues about the connections among disciplines. The *Journal* publishes research articles, review articles, essays, commentaries, guest editorials, historical perspectives, obituaries, book reviews, and letters or commentaries pertaining to previously published material.



Editorial

- 5 Editorial STEPHEN E. BRAUDE

Research Articles

- 10 Prospective Statistical Power: Sample Size
Recommendations for the Investigation of the
Main Parapsychological Phenomena PATRIZIO TRESSOLDI
- 16 Consistency in Eyewitness Reports of
Aquatic “Monsters” CHARLES G. M. PAXTON
A. J. SHINE
- 27 Follow-Up Investigation of the Felix Circle STEPHEN E. BRAUDE

Commentary

- 56 Further Comments about Kai Mügge’s Alleged
Mediumship and Recent Developments MICHAEL NAHM

Historical Perspective

- 63 On Psychic Forces and Doubles: The Case of
of Albert de Rochas CARLOS S. ALVARADO

Letters to the Editor

- 85 Physical Mediumship: Trying to Move on ZOFIA WEAVER
- 92 A Recent Instance of Psi Censorship in
Psychological Science? GARY E. SCHWARTZ

Obituaries

- 94 Edgar D. Mitchell, 1930–2016 JOHN ALEXANDER
- 97 Richard (Dick) G. Shoup, 1943–2015 JAMES SPOTTISWOODE

Book Reviews

- 101 *Testing Prayer: Science and Healing*
by Candy Gunther Brown LARRY DOSSEY
- 112 *Sleep Paralysis: Historical, Psychological, and
Medical Perspectives* by Brian A. Sharpless
and Karl Doghramji GERHARD MAYER

- 116 *Our Mathematical Universe: My Quest for the Ultimate Nature of Reality* by Max Tegmark FRED ALAN WOLF
- 120 *Return to Magonia: Investigating UFOs in History* by Chris Aubeck and Martin Shough THOMAS E. BULLARD
- 126 *Molecular Memories* by Robert G. Jahn and Brenda J. Dunne ROGER NELSON

Further Books of Note

- 129 *The Science Delusion: Asking the Big Questions in a Culture of Easy Answers* by Curtis White HENRY H. BAUER
- 131 *Late Night Thoughts about Science* by Peter A. Sturrock HENRY H. BAUER
- 133 *A Manifestation of Monsters: Examining the (Un)usual Suspects* by Karl P. N. Shuker HENRY H. BAUER

SSE News

- 135 SSE and PA Joint Annual Meeting Announcement
- 137 Aspiring Explorers Program
- 138 SSE Joint Euro-Meeting Announcement with Swedish Society for Parapsychological Research and Agora Centre for Biosystems
- 141 SSE Masthead
- 142 Index of Previous Articles in *JSE*
- 161 Order forms for *JSE* Issues, *JSE* Subscriptions, and Society Membership
- 164 Instructions for *JSE* Authors

EDITORIAL

For SSE members fascinated by well-documented accounts of strong macro-PK phenomena, these are very exciting times. Three outstanding volumes have appeared in fairly short order, each of which is a major addition to the literature. The first to appear was Zofia Weaver's book on the Polish medium Franek Kluski (Weaver 2015), reviewed in *JSE* 29:3. Shortly thereafter, Erlendur Haraldsson and Loftur Gissurarson published their detailed opus on the Icelandic medium Indridi Indridason (Haraldsson & Gissurarson 2015), reviewed in *JSE* 29:4. And then most recently, we've seen Michael Grosso's long-awaited examination of the seventeenth-century flying friar, St. Joseph of Copertino, carrying the additional imprimatur of a respected academic press (Grosso 2016). It will be reviewed in the next issue (*JSE* 30:2).

These three books present many readers—including those already sympathetic to the existence of dramatic macro-PK phenomena—with a dilemma, well-expressed in an email I received recently from Alan Gauld. Gauld noted that

the phenomena described, or not a few of them, are so bizarre that it is next to impossible to believe in them, whilst the witnesses are often of such standing, and the precautions they take so sensible, that it is next to impossible not to believe them!

This is clearly reminiscent of Darwin's comment about William Crookes's experiments with the medium D. D. Home:

I cannot disbelieve Mr. Crookes's statements, nor can I believe his results.

Many of the most respected researchers in the study of physical mediumship have expressed a similar conflict, and occasional (if not frequent) attacks of what we can call residual incredulity. I believe I understand this; I know it intimately from my own case. For example, no matter how carefully I studied the evidence in connection with the "Gold Leaf Lady" in Florida, and no matter how carefully I studied her myself, it took me several visits to Florida and almost continual reassessment of the full body of evidence before I was ready to state confidently that there was no satisfactory normal explanation of how a golden-colored foil could appear spontaneously and instantaneously on Katie's body (Braude 2007). And even before that, when I wrote my defense of macro-PK phenomena in

The Limits of Influence (Braude 1997), I often had to read through both the firsthand accounts and my arguments over and over to reassure myself that I hadn't committed some error, either egregious or subtle.

In any case, this epistemological dilemma is one of the reasons it's so lame to charge, as many skeptics have done, that researchers into these large-scale phenomena are merely caught up in their own biases or predispositions to observe the phenomena, or to report the miraculous (see Braude 1997 for an extended discussion of this topic, and Braude 2007 for a more compact presentation). On the contrary, the most evidential reports are precisely from well-qualified researchers who had to struggle with their own biases *against* the phenomena generally, or their subjects in particular. The case of Eusapia Palladino is a particularly good resource in this regard. For example, Charles Richet said of his own belief in the physical phenomena of Palladino,

It took me twenty years of patient researches to arrive at my present conviction. Nay,—to make one last confession,—I am not yet even absolutely and irremediably convinced! In spite of the astounding phenomena I have witnessed during my sixty experiments with Eusapia, I have still a trace of doubt; doubt which is weak, indeed to-day, but which may perchance be stronger to-morrow. Yet such doubts, if they come, will not be due so much to any defect in the actual experiment, as to the inexorable strength of prepossession which holds me back from adopting a conclusion which contravenes the habitual and almost unanimous opinion of mankind. (Richet 1899:157)

Even more dramatically, the ideally qualified “Fraud Squad” of Feilding, Baggally, and Carrington that investigated Eusapia in Naples in 1908, went to Italy *expecting* to establish that Eusapia was a fraud. Their revealing and honest comments, recorded after each of the eleven séances, reveals quite clearly how they struggled with their own biases against both Eusapia in particular and macro-PK generally, and grudgingly concluded that out of approximately 500 documented phenomena, they could not detect any fraud and were compelled to conclude that Eusapia's phenomena were genuine. (See Feilding 1963, Feilding, Baggally, & Carrington 1909, or at least the summary in Braude 1997.)

Interestingly, the familiar skeptical dismissals of these exotic phenomena are often made with much more confidence (typically supplemented with a healthy dose of disdain) than the evidence—and certainly the skeptic's knowledge of that evidence—would support. But as philosopher C. J. Ducasse correctly observed,

. . . allegations of detection of fraud, or of malobservation, or of misinterpretation of what was observed, or of hypnotically induced hallucinations, have to be scrutinized *as closely and as critically* as must the testimony for the reality of the phenomena. For there is likely to be just as much wishful thinking, prejudice, emotion, snap judgment, naiveté, and intellectual dishonesty on the side of orthodoxy, of skepticism, and of conservatism, as on the side of hunger for and of belief in the marvelous. The emotional motivation for irresponsible disbelief is, in fact, probably even stronger—especially in scientifically educated persons whose pride of knowledge is at stake—than is in other persons the motivation for irresponsible belief. (Ducasse 1958:22)

This is not simply a point that's persuasive only in the abstract. On the contrary, the history of parapsychology chronicles an astounding degree of blindness, intellectual cowardice, and mendacity on the part of skeptics and ardent nonbelievers, some of them prominent scientists. For some juicy examples, see Braude (1997:27–31).

But the important point for now is that the skeptic and former skeptic typically share the same initial incredulity and conflict mentioned by Gauld and Darwin. The more dramatic physical phenomena from mediumship and poltergeist cases, even if they don't simply scare the hell out of us, at least initially rub us the wrong way epistemologically. No doubt some will claim that we have enough well-grounded scientific knowledge to conclude that the phenomena are impossible. But matters are not that simple. For one thing, that position often betrays a confusion between (a) claiming that a phenomenon is incompatible with current theory and (b) claiming that the phenomenon falls outside the domain of current theory (for more on that topic see Braude 1997: Chapter 1). That confusion is most prevalent among reductionists who think that the only genuine facts are those that can be accommodated within physical theory. But setting that issue aside, it's more prudent to try to retain a healthy respect for evidence, which can often frustrate our expectations and even wreak havoc with scientific reputations. In fact, I recommend that we heed the following words of William Crookes, written in connection with his study of D. D. Home.

Faraday says, "Before we proceed to consider any question involving physical principles, we should set out with clear ideas of the naturally possible and impossible." But this appears like reasoning in a circle: We are to investigate nothing till we know it to be possible, whilst we cannot say what is impossible, outside pure mathematics, till we know everything.

In the present case I prefer to enter upon the enquiry with no preconceived notions whatever as to what can or cannot be . . . believing, as I do, that we have by no means exhausted all human knowledge or fathomed

the depths of all the physical forces. (Crookes 1874:4, Medhurst, Goldney, & Barrington 1972:16)

So I suggest that, when confronted by our initial or instinctive incredulity (if not revulsion) in the face of dramatic instances of macro-PK, we try to keep in mind that science is fundamentally descriptive and not prescriptive, that no empirical claim is immune from revision, and that even well-entrenched scientific theories have an annoying tendency to be overthrown eventually.

One more matter, also concerning physical mediumship. This Issue includes, for the second time, two papers by Michael Nahm and myself about the physical medium Kai Mügge. Both papers describe recent developments in the investigation of Kai's mediumship. But this time, our reports will likely close the book on that subject, at least as far as the *JSE* is concerned. When Nahm and I published our earlier reports (Braude 2014, Nahm 2014), we noted that there was compelling evidence that Kai had used a magic trick on some occasions (not supervised by me), and that there was additional suggestive evidence of fraud on other occasions. Readers following this saga will see that Nahm and I have not changed our overall (and somewhat conflicting) assessments of Kai's mediumship. Whereas Nahm believes that most of Kai's phenomena (including his trance and his ectoplasm) are probably fraudulent, I continue to maintain that although Kai has certainly earned the suspicion now lavished on him, some of his phenomena (especially table levitations) are probably genuine, and that others (including object movements at a distance while the medium is under four-limb control) also are difficult to dismiss. But all this may never be settled satisfactorily. For reasons I discuss, it seems unlikely that Kai will again submit himself to examination by me or any other careful researcher. It appears, instead, that he would prefer to continue shooting himself in the foot.

—STEPHEN E. BRAUDE

References Cited

- Braude, S. E. (1997). *The Limits of Influence: Psychokinesis and the Philosophy of Science, Revised Edition*. Lanham, MD: University Press of America.
- Braude, S. E. (2007). *The Gold Leaf Lady and Other Parapsychological Investigations*. Chicago: University of Chicago Press.
- Braude, S. E. (2014). Investigations of the Felix Experimental Group: 2010–2013. *Journal of Scientific Exploration*, 28(2):285–343.
- Crookes, W. (1874). *Researches in the Phenomena of Spiritualism*. London: J. Burns.
- Ducasse, C. J. (1958). Physical phenomena in psychical research. *Journal of the American Society for Psychical Research*, 52:3–23.
- Feilding, E. (1963). *Sittings with Eusapia Palladino and Other Studies*. New Hyde Park, NY: University Books.

- Feilding, E., Baggally, W. W., & Carrington, H. (1909). Report on a series of sittings with Eusapia Palladino. *Proceedings of the Society for Psychical Research*, 23:309–569. [Reprinted in Feilding 1963]
- Grosso, M. (2016). *The Man Who Could Fly: St. Joseph of Copertino and the Mystery of Levitation*. Lanham, MD: Rowman & Littlefield.
- Haraldsson, E., & Gissurason, L. R. (2015). *Indridi Indridason: The Icelandic Physical Medium*. Hove, UK: White Crow Books.
- Medhurst, R. G., Goldney, K. M., & Barrington, M. R. (Editors) (1972). *Crookes and the Spirit World*. New York: Taplinger.
- Nahm, M. (2014). The development and phenomena of a circle for physical mediumship. *Journal of Scientific Exploration*, 28(1):229–283.
- Richet, C. (1899). On the conditions of certainty. *Proceedings of the Society for Psychical Research*, 6:66–83.
- Weaver, Z. (2015). *Other Realities? The Enigma of Franek Kluski's Mediumship*. Hove, UK: White Crow Books.

RESEARCH ARTICLE

Prospective Statistical Power: Sample Size Recommendations for the Investigation of the Main Parapsychological Phenomena

PATRIZIO TRESSOLDI

Dipartimento di Psicologia Generale, Università di Padova, Italy
patrizio.tressoldi@unipd.it

Submitted February 25, 2015; Accepted December 19, 2015; Published March 15, 2016

Abstract—The aim of this paper is to offer a practical guideline for researchers investigating parapsychological phenomena to choose appropriate sample sizes to achieve a statistical power equal to or above 0.80. The availability of different meta-analyses related to different parapsychological phenomena allow a sufficient estimation of the expected effect sizes, which usually range from small to very small. With these measures, it is possible to estimate the numerosity of sample sizes necessary to achieve a level of statistical power that can facilitate the replication of different parapsychological phenomena. I discuss ways to deal with the investigation of phenomena with very small effect sizes requiring very large sample sizes.

Keywords: statistical power—sample size—replication—effect size—extra-sensory perception—interaction at distance

Introduction

In science, replication of experimental findings is a *sine qua non* for supporting the evidence of all phenomena. At present, the problem of replication is a hot topic in psychology, neuroscience, and medical fields (see Ioannidis 2005, Yong 2012, Pashler & Wagenmakers 2012, Begley & Ioannidis 2015), and there are multiple initiatives and proposals on how to overcome this increasing distrust toward the scientific methodology used in these disciplines (for example, Simons, Holcombe, & Spellman 2014; <http://validation.scienceexchange.com>).

When studying anomalous phenomena that do not seem to fit with the dominant scientific paradigms, multiple independent replications is an ever-greater requirement. All evidence currently available supporting the reality of so-called parapsychological phenomena, both related to the acquisition of information beyond the range of sensory organs and to mind interaction at a

distance to physical and biological targets, is still deemed to be “exceptional claims” that must be supported by “exceptional evidence.”

The aim of this methodological paper is to help researchers interested in the investigation of parapsychological phenomena in planning their experiments by suggesting an estimate for the minimum number of participants necessary to achieve a statistical power of at least .80 to detect the phenomena they are examining.

From a statistical point of view, a problem remains of how to devise a sufficient statistical power for “identifying” or “capturing” a given phenomenon. Statistical power (for a more complete description, see Faul et al. 2007 and Tressoldi & Utts 2015) is the power to detect a given phenomenon after defining the probability of risk of accepting the hypothesis that it is true with a given effect size (*ES*) when it is not. Statistical power depends on three numerical values: (1) the probability of type I error, that is the probability of accepting the existence of a phenomenon when it is not, typically set to .05; (2) the size(s) of the sample(s) used for the test; and (3) an *ES* parameter indexing the actual degree of deviation from the probability of “non-existence” in the underlying population.

In most experimental designs, the accepted probability of making a Type I error is $\alpha = .05$ and the desired power is not less than .80. However, in order to define how to obtain such a level of power, it is necessary to specify the *ES* of the phenomena being identified. It is intuitive that the smaller the phenomenon, the greater the sensitivity needed to detect it. This analogy is similar to the signal/noise relationship. The smaller the signal, the stronger the means must be to detect it in the noise.

Power analysis should be used prospectively, that is before starting an experiment to calculate the minimum sample size required so that one can increase the probability to detect an effect of a given size. The definition of a satisfactory level of statistical power is not restricted to the so-called frequentist statistical approach which derives from the pioneering theories of Fisher and Neyman-Pearson (see Neyman 1937), but is also relevant for the Bayesian statistical approach. With this approach, the prior beliefs, expressed in probabilistic terms about the existence of a given phenomenon, are updated using the data obtained in a given study. In principle, a study that was underpowered could still be used in such an updating process, but it is unlikely to lead to a major change in beliefs (Kennedy 2015, Kruschke 2014).

The recent updates of the accumulated evidence related to many parapsychological phenomena obtained by meta-analyses clearly show that all these phenomena have small *ES*s (Storm, Tressoldi, & DiRisio, 2010, 2012, Mossbridge, Tressoldi, & Utts 2012, Schmidt 2012, Bem et al.

2015, Roe, Sonnex, & Roxburgh 2014, Baptista, Derakhshani, & Tressoldi 2015). The consequence of these results are straightforward: To achieve a statistical power of at least .80, it is necessary to plan the recruitment of a high number of participants.

Methods

ES Estimates

ES estimates of different parapsychological phenomena were chosen from the more recently available meta-analyses which summarized the updated accumulated evidence related to both extra-sensory perception (ESP) and mental interaction at a distance to different targets, both human and biological. These meta-analyses are presented in Table 1.

Sample Size Estimation

Sample size estimates for power = 0.80 and 0.90 were computed using the freeware G*Power software v.3.1.9.2 (Faul et al. 2007). In the “Test family” menu, we chose the more common statistics used with the different research protocols which are presented in Table 1. In the “Statistical test” menu, we chose the more common comparisons, e.g., paired or unpaired difference; in the “Type of power analysis” menu, we chose “A priori: Compute required sample size, were given α , power, and effect size”; in the “Input Parameters” windows, we always inputted “Tail(s)” = One; α = 0.05 (for the application of focused or confirmatory hypotheses) *ES* point estimate, and their lower and upper confidence intervals drawn from the different meta-analyses.

Discussion

As shown in Table 1, when investigating ESP with different procedures based on free response protocols, it seems not difficult to achieve a satisfactory statistical power with samples ranging from 20 to approximately 100 participants. On the contrary, for the investigation of ESP using classical forced-choice protocols, it seems quite impossible to achieve a satisfactory statistical power given the necessity to recruit approximately more than 10,000 participants.

For the rest of the phenomena, from the implicit psychophysiological and behavioral anticipations to the remote mental interaction with biological and human targets, the number of participants necessary to recruit to achieve a satisfactory statistical power is quite high, but not impossible to achieve.

If we examine all studies included in the meta-analyses, many of them have a statistical power (well) below the level of .80, with all the

TABLE 1

Sample Size Estimates to Achieve a Statistical Power of 0.80 and 0.90 for the Investigation of the Main Parapsychological Phenomena Given the Expected Effect Sizes and Using the More Common Statistical Tests

Phenomena	Statistical test	ES [95%CI]	Power = 0.80 sample size	Power = 0.90 sample size
ESP with Ganzfeld ¹	Exact. Proportion: difference from constant ^o	0.14 [0.09,0.18]	72 [45-161]	97 [59-219]
ESP with Remote Vision ²	Exact. Proportion: difference from constant ^o	0.24 [0.20,0.28]	26 [20-36]	36 [26-49]
ESP with Dream ²	Exact. Proportion: difference from constant ^o	0.14 [0.06,0.22]	72 [32-348]	97 [42-479]
Forced-Choice ESP ³	Exact. Proportion: difference from constant ^o	0.01 [0.006,0.011]	11756 [9728-32448]	16266 [32448-44969]
Psychophysiological Anticipation ⁴	Paired sample t-test —Mann Whitney	0.21 [0.15,0.27]	142 [87-277]	196 [120-382]
Behavioral Anticipation ⁵	Paired sample t-test —Mann Whitney	0.11* [0.08,0.14]	513 [317-968]	710 [439-1340]
Distant Mental Interaction —Human Targets ⁶	Independent samples t-test	0.19 [0.15,0.24]	688# [432-1102]	952# [598-1524]
Distant Mental Interaction —Biological Targets ⁶	Independent samples t-test	0.20 [0.17,0.23]	620# [470-858]	858# [650-1188]
Distant Intention Effects ⁷	Paired sample t-test —Mann Whitney	0.11 [0.01,0.22]	513 [130-61827]	710 [179-85640]
Remote Staring ⁷	Paired sample t-test —Mann Whitney	0.12 [0.02,0.22]	431 [130-15458]	597 [179-21411]

^o 0.25, * only fast-thinking protocols, # group1 + group2

¹ Storm et al. 2010, Tressoldi 2011; ² Baptista et al. 2015, Storm et al. (submitted); ³ Storm et al. 2012, Tressoldi 2011; ⁴ Mossbridge et al. 2012; ⁵ Bem et al. 2015; ⁶ Roe et al. 2015; ⁷ Schmidt 2012

consequences outlined in the Introduction. How does one proceed when it is difficult or quite impossible to achieve a satisfactory statistical power?

Among the possible solutions to this problem, one is to try to increase the expected *ES* by recruiting selected participants. As demonstrated by Baptista et al. (2015) in all free-response protocols, e.g., ESP in a ganzfeld environment or ESP using RV techniques, selected participants, that is participants who have experience with these kind of tasks and are very committed to succeed, obtain almost a double *ES* with respect to non-expert participants.

Among the other solutions, we suggest disclosing the problem of statistical power and ignoring *p* values altogether, focusing more on *ES*s and their estimation by using confidence intervals in line with the so-called “statistical reform” movement endorsed recently by the editor of *Psychological Science* (Eich 2014), underlying their importance for meta-analyses as suggested by Braver, Thoemmes, and Rosenthal (2014). For further suggestions, see Tressoldi and Utts (2015) and Tressoldi and Giofré (2015).

To summarize, the take-home message of this methodological paper is: Before speculating about the theoretical reasons underlying the unreliability of evidence of most if not all parapsychological phenomena, we must exclude the possibility that it may be due to the neglect of statistical power.

References Cited

- Baptista, J., Derakhshani, M., & Tressoldi, P. E. (2015). Explicit Anomalous Cognition: A Review of the Best Evidence in Ganzfeld, Forced-choice, Remote Viewing, and Dream Studies. In *Parapsychology: A Handbook for the 21st Century* edited by E. Cardeña, J. Palmer, and D. Marcussen-Clavertz, Jefferson, NC: McFarland.
- Begley, C. G., & Ioannidis, J. P. (2015). Reproducibility in science improving the standard for basic and preclinical research. *Circulation Research*, 116(1):116–126.
- Bem, D., Tressoldi, P., Rabeyron, T., & Duggan, M. (2015). A Meta-Analysis of 90 Experiments on the Anomalous Anticipation of Random Future Events. *F1000Research*, 4:1188. (doi: 10.12688/f1000research.7177.1) Available at the Social Science Research Network: <http://ssrn.com/abstract=2423692>
- Braver, S. L., Thoemmes, F. J., & Rosenthal, R. (2014). Continuously cumulating meta-analysis and replicability. *Perspectives on Psychological Science*, 9(3):333–342.
- Eich, E. (2014). Business not as usual. *Psychological Science*, 25(1):3–6.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2):175–191.
- Ioannidis, J. P. (2005). Why most published research findings are false. *PLoS Medicine*, 2(8):e124.
- Kennedy, J. E. (2015). Beware of inferential errors and low power with Bayesian analyses: Power analysis is needed for confirmatory research. *Journal of Parapsychology*, 79(1):53–64. https://jeksite.org/psi/confirm_bayes.pdf
- Kruschke, J. (2014). *Doing Bayesian Data Analysis: A Tutorial with R, JAGS, and Stan*. Academic Press.

- Mossbridge, J., Tressoldi, P. E., & Utts, J. (2012). Predictive physiological anticipation preceding seemingly unpredictable stimuli: A meta-analysis. *Frontiers in Psychology, 3*:390. doi:10.3389/fpsyg.2012.00390
- Neyman, J. (1937). Outline of a theory of statistical estimation based on the classical theory of probability, *Philosophical Transactions of the Royal Society of London A, 236*:333–380.
- Pashler, H., & Wagenmakers, E. J. (2012). Editors' Introduction to the Special Section on Replicability in Psychological Science: A Crisis of Confidence? *Perspectives on Psychological Science, 7*(6):528–530.
- Roe, C. A., Sonnex, C., & Roxburgh, E. C. (2015). Two meta-analyses of noncontact healing studies. *EXPLORE: The Journal of Science and Healing, 11*:11–23.
- Schmidt, S. (2012). Can we help just by good intentions? A meta-analysis of experiments on distant intention effects. *The Journal of Alternative and Complementary Medicine, 18*(6): 529–533. doi:10.1089/acm.2011.0321
- Simons, D. J., Holcombe, A. O., & Spellman, B. A. (2014). An introduction to registered replication reports at *Perspectives on Psychological Science. Perspectives on Psychological Science, 9*(5):552–555.
- Storm, L., Tressoldi, P. E., & Di Risio, L. (2010). Meta-analyses of free-response studies 1992–2008, assessing the noise reduction model in parapsychology. *Psychological Bulletin, 136*:491–494. doi:10.1037/a0019840
- Storm, L., Tressoldi, P. E., & Di Risio, L. (2012). Meta-analysis of ESP studies, 1987–2010: Assessing the success of the forced-choice design in parapsychology. *Journal of Parapsychology, 76*(2):243–274.
- Storm, L., Sherwood, S. J., Roe, C. A., Tressoldi, P. E., Rock, A. J., & Di Risio, L. (in press). On the Correspondence between Dream Content and Target Material under Laboratory Conditions: A Meta-Analysis of Dream-ESP Studies, 1966–2014.
- Tressoldi, P. E. (2011). Extraordinary claims require extraordinary evidence: The case of non-local perception, a classical and Bayesian review of evidences. *Frontiers in Psychology, 2*:117. doi:10.3389/fpsyg.2011.00117
- Tressoldi, P. E., & Giofré, D. (2015). The pervasive avoidance of prospective statistical power: Major consequences and practical solutions. *Frontiers in Psychology, 6*:726. Available at Social Science Research Network: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2579268
- Tressoldi, P., & Utts, J. (2015). Statistical Guidelines for Empirical Studies. In *Parapsychology: A Handbook for the 21st Century* edited by E. Cardeña, J. Palmer, & D. Marcusson-Clavertz, Jefferson, NC: McFarland.
- Yong, E. (2012). Nobel laureate challenges psychologists to clean up their act. *Nature*, October 3. doi:10.1038/nature.2012.11535

RESEARCH ARTICLE

Consistency in Eyewitness Reports of Aquatic “Monsters”

CHARLES G. M. PAXTON

Centre for Research into Ecological and Environmental Modelling, University of St Andrews,
The Observatory, Buchanan Gardens, St Andrews, Fife, United Kingdom

ADRIAN J. SHINE

Loch Ness Project, Drumnadrochit, Inverness-shire, United Kingdom

Submitted September 27, 2015; Accepted January 26, 2016; Published March 15, 2016

Abstract—Little work has been undertaken on the consistency/repeatability of reports of natural historical anomalies. Such information is useful in understanding the reporting process associated with such accounts and distinguishing any underlying biological signal. Here we used intraclass correlation as a measure of consistency in descriptions of a variety of quantitative features from a large collection of firsthand accounts of apparently unknown aquatic animals (hereafter “monsters”) in each of two different cases. In the first case, same observer, same encounter (*sose*), the correlation was estimated from two different accounts of the same event from the same witness. In the second case, the correlation was between two different observers of the same event (*dose*). Overall, levels of consistency were surprisingly high, with length of monster, distance of monster to the witness, and duration of encounter varying between 0.63 and 1. Interestingly, there was no evidence that *sose* accounts generally had higher consistency than *dose* accounts.

Keywords: cryptozoology—eyewitness testimony—memory conformity—
anecdotes

Introduction

Anecdotal written accounts of undiscovered species of animal are often considered inadmissible as evidence (e.g., Loxton & Prothero 2013, Shermer 2003, Shermer 1997). Yet anecdotal information has been and continues to be used in organismic biology. There have been efforts to combine conventional survey data with more anecdotal information (e.g., Service et al. 2014, Huntington, Suydam, & Rosenberg 2004, but see McKelvey, Aubry, & Schwartz 2008), and the collation and analysis of anecdotal accounts of phenological events is now commonplace (Birchenough et al. 2015, Fitchett, Grab, & Thompson 2015). In a similar way, insights may

be obtained from the collection and analysis of cryptozoological reports (Paxton 2010, Paxton 2009).

It is reasonable to assume that eyewitness reports of unusual natural events might bear comparison with eyewitness reports of traumatic events such as crimes or accidents in terms of the processes operating on eyewitnesses. Just as in forensic analysis of eyewitness testimony, a major interest of the analyser of accounts of natural historical anomalies is determining the underlying reality of what was seen, with the major caveat that such reports like those of other witnesses are the outcome of a process of perception, memory, recollection, transmission, and recording (Loftus 1996), with the subsequent danger of reinterpretation by the analyst. Indeed, the report may not actually be true. Thus any statistical investigation of reported anomalies will explore both the actual phenomena seen *and* the reporting process associated with it.

Understanding the natural historical anomaly reporting process could allow determination of whether future reports of anomalies represent real phenomena as yet not understood or recognized by the scientific community. For example, some genuine, important natural phenomena were originally reported only as anecdotes and dismissed by contemporary commentators, e.g., meteorites (Burke 1986), sprites (Boeck et al. 1998), and rogue waves (Draper 1964). Analysis of reports could also allow an understanding of misperception, why people report false events as true, and the distortions that occur in the report transmission process. Statistical analysis also allows estimation of the consistency that might occur in the anomalies reporting process, which might also be relevant for assessing reliability and understanding noise more generally in the natural historical bibliographic record.

In the case of unknown aquatic animals, the cumulative description curve of giant (>2 m) marine animals through time suggests there are still animals to discover (Paxton 1998), therefore it is just possible, albeit unlikely, that such animals might be seen by non-specialist observers prior to discovery. A large database of reports of unknown aquatic animals, hereafter “monsters,” is now available (Paxton 2009), allowing a statistical exploration of the reported phenomena. Understanding the consistency of such reports is a vital precursor to any further analysis because inconsistent reports may be less likely to be reliable. Note that here we use repeatability/consistency as synonyms.

Unlike more general investigations of the consistency/repeatability of memory (Baugerud, Magnussen, & Melinder 2014, Odinet, Wolters, & van Giezen 2013, Krähenbühl, Blades, & Eiser 2009, Bramsen et al. 2001, Smeets, Candel, & Merckelbach 2004), the consistency/repeatability of

eyewitness accounts of anomalous events in general, let alone of cryptozoological reports, has, to our knowledge, never been estimated. Here we explore consistency of eyewitness testimony of cryptozoological anomalies by looking at the special cases in the database of aquatic monster accounts where there were quantitative estimates of reported length of the monster, reported distance of the witnesses to the monster, and reported duration of encounter. Consistency was estimated in two different situations. Firstly, where there were repeated accounts of the same event from the same observer (same observer same encounter, *sose* cases), and, secondly, where there were multiple witnesses of the same event (different observer same encounter, *dose* cases). Both cases are of interest, *dose* because it allows insights into (mis)perception between individuals, *sose* because it allows an estimation of how consistent individuals are and provides a standard for comparison with the *dose* cases. All other things equal, *dose* cases might be expected to be less consistent than *sose* cases, and any differences between them in repeatability should be due to differences in estimation between witnesses. Also, *sose* accounts provide a measure of the drift in testimony that may occur over time.

It should be stressed that here we were considering only consistency, which is related to precision (i.e. the amount of “noise” in the reports), as consistent estimates will have high precision. Consistency is not the same as accuracy (i.e. a lack of bias). We could not determine the accuracy of the reports from the analyses undertaken here as we did not know the underlying truth. Estimates may be consistent and precise but still inaccurate relative to the unknown reality.

Materials and Methods

The Available Data

In each analysis, the data (see Supplementary Material file “dose data”, and Supplementary Material file “sose data”) were based on subsets of a compilation of sea and freshwater monster accounts from various primary and secondary sources, including books, newspaper accounts, and firsthand testimony personally collected by the authors (Paxton 2009) and by the Loch Ness Phenomena Investigation Bureau from 1962 to 1972 (Witchell 1979). Reports had to be of animals seen at the surface of the water. For example, the famous Grant and Spicer reports (Gould 1934) of the Loch Ness Monster on land were not included, nor were the famous underwater images taken in 1972 and 1975 (Scott & Rines 1975). To be included as a report, the body of the putative animal must actually have been seen. For example, monster reports where only a splash and/or wash were seen were

not included (e.g., Burton 1961:118, Whyte 1957:30). It is not known if all the reports are truthful or indeed necessarily of living things or animals. Nor can it be known if the witnesses have interpreted anatomy correctly (e.g., Paxton, Knatterud, & Hedley 2005). Exposed and admitted hoaxes or absolutely known misidentifications were omitted from the dataset. Suspected hoaxes or misidentifications were not. Therefore, we make no overall claims as to the truthfulness of the reports under consideration. The data are non-randomly distributed in space and time and are clearly biased in favor of English-language sources: predominantly the British Isles, the United States of America, and Canada. One particular locality dominates: Loch Ness. Only firsthand accounts were considered (i.e. where there are direct quotes of the witnesses) as there is evidence of bias in secondhand accounts (Paxton 2009). Of course, even these direct quotes may not actually be direct quotes of the witnesses but embellishments by reporters.

Response Variables

The data of interest were the easily quantifiable aspects of the reports: length of the monster seen, reported distance of witness from the monster, and the duration of the encounter. Reported length in aquatic monster accounts can represent at least three actual lengths: the estimated total length of the whole animal, or the estimated seen length of the animal above the surface of the water, or sometimes the nature of the length being estimated is unspecified. Therefore, total, seen, and unspecified lengths were considered separately. Reported distances came in several forms. Sometimes the reported distance was the estimated distance on initial sighting, sometimes it was the nearest reported distance, and sometimes it was unspecified (often when the object did not move relative to the observer). In this case, initial and unspecified distances were amalgamated, but the nearest reported distances were considered separately. If a description of a distance was given as “less than r ,” the distance was taken as r . Likewise, “at least r ” was taken as r .

Multiple accounts of the same encounter by the same witness. In the case of same observer same encounter (*sose*) cases, from each available encounter, random pairs of reported distance, length, and duration were drawn from the available distances, lengths, and durations from the witness accounts. Because these are quantitative measures, an index of consistency for each sighting characteristic can be made. Repeatability within witnesses was then calculated using a Type 1 intraclass correlation coefficient (ρ , Shrout & Fleiss 1979, see also Zar 1996:398–401) in the statistical programming environment *R* (*R* Developmental Core Team 2014) using the *R* library *psych* (Revelle 2014) to create an index between zero and one, with one representing perfect consistency, and zero no consistency at all.

These *sose* cases are interesting as they provide an insight into individual witness reliability.

Multiple witness accounts of the same encounter. Repeated reports from different observers of the same encounter (*dose* cases) were treated in a similar manner to the multiple accounts from the same witness above, except in this case the pairs of lengths, distances, and durations were drawn from different randomly chosen witnesses of the same event. Multiple witnesses in accounts of aquatic monsters are apparently common (i.e. witnesses often state that others were present), although written accounts from witnesses are quite rare. Often there is one primary witness who refers to others and/or others append their name to a single written account or the encounter is reported by one witness only. Such reports would not be considered as *dose* reports. Wholly independent accounts of the same incident (i.e. accounts where it can be reasonably concluded that the witnesses are completely unaware of other accounts) are extremely rare, only one putative case of wholly independent reports is known to us (from two witnesses who witnessed a sea monster from the passenger boat *Taiyuan* in 1907, (Heuvelmans 1968:382–383). More often there are multiple quotes from different witnesses who were together at the same time and who would have had ample time to talk to each other prior to giving a statement. Both the latter types of report were considered as *dose* here.

There are accounts where people saw the same monster from different localities, but only distances from observers from the same location were compared. Similarly, there are encounters where one or more witnesses arrived after the event had commenced. These were disregarded from the duration analysis.

Results

Multiple Accounts from the Same Witness of the Same Encounter (sose Cases)

In the database there are 171 encounters with distinct repeat firsthand accounts. Not all accounts from the same encounter have estimates of distance, length, or duration. So the sample size for each analysis is much lower than 171. Multiple accounts by the same witness of the same encounter are not always identical, witnesses strangely do not seem to consult their earlier accounts. For example, the naturalist E. G. B. Meade-Waldo stated the initial distance at which he saw a sea serpent from the yacht *Valhalla* in 1905 was 100 yards (Meade-Waldo & Nicoll 1906). A few years later when writing a letter to the author Rupert Gould (1930:129), he stated the initial distance to be 200 yards. Table 1 gives an indication of the spatial and temporal range of the *sose* data.

TABLE 1
Summary of Events with Either Multiple Observers (dose)
or Single Observers with Repeated Accounts (sose)

Class of Cases	Time Range	Location
sose (overall)	1817–2011	Worldwide, freshwater, marine
sose (distance)	1852–2000	Worldwide, freshwater, marine
sose (nearest distance)	1890–2007	Worldwide, freshwater marine
sose (length total)	1852–1975	Atlantic, Mediterranean, freshwater, marine
sose (length seen)	1852–2007	Atlantic, Mediterranean, freshwater, marine
sose (length unspecified)	1933–1998	Loch Ness, freshwater
sose (duration)	1875–2007	Atlantic, freshwater, marine
dose (overall)	1817–2009	Worldwide, freshwater, marine
dose (distance)	1817–2009	Atlantic, Indian, freshwater, marine
dose (nearest distance)	1819–1996	Worldwide, freshwater, marine
dose (length total)	1817–1975	Worldwide, marine
dose (length seen)	1819–1996	Worldwide, freshwater, marine
dose (length unspecified)	1907–2009	Worldwide, freshwater
dose (duration)	1817–2009	Atlantic, Mediterranean, freshwater, marine

In the case of initial or unspecified distance, $\rho = 0.93$ (95% confidence interval: 0.85 – 0.96), $n = 32$, $P < 0.001$; for nearest reported distance, $\rho = 0.95$ (0.85 – 0.99), $n = 12$, $P < 0.001$; for estimated total length, $\rho = 1$ (1 – 1), $n = 5$, $P < 0.001$; for seen length, $\rho = 0.97$ (0.89 – 0.99), $n = 11$, $P < 0.001$; for unspecified length, $\rho = 0.96$ (0.86 – 0.99), $n = 10$, $P < 0.001$; and for the case of duration of encounter, $\rho = 0.63$ (0.32 – 0.82), $n = 25$, $P < 0.001$.

Multiple Witnesses of the Same Encounter (dose Cases)

In the database, there are 190 encounters with distinct multiple firsthand accounts. As in the previous case, not all different witnesses have estimates of distance, length, or duration, so the sample size for each analysis is much lower than 190. Because of the lack of independence between witnesses of the same event, the correlation calculated below should be considered upper bounds, as presumably awareness of other accounts would lead to greater similarities. Table 1 gives an indication of the spatial and temporal range of the data.

In the case of initial and unspecified distance estimates combined, $\rho = 0.94$ (95% confidence interval: 0.89 – 0.97), $n = 54$, $P < 0.001$; in the case of nearest approach distance, $\rho = 0.68$ (0.25 – 0.89), $n = 17$, $P = 0.001$; in the case of estimated total length, $\rho = 0.95$ (0.71 – 0.99), $n = 6$, $P < 0.001$;

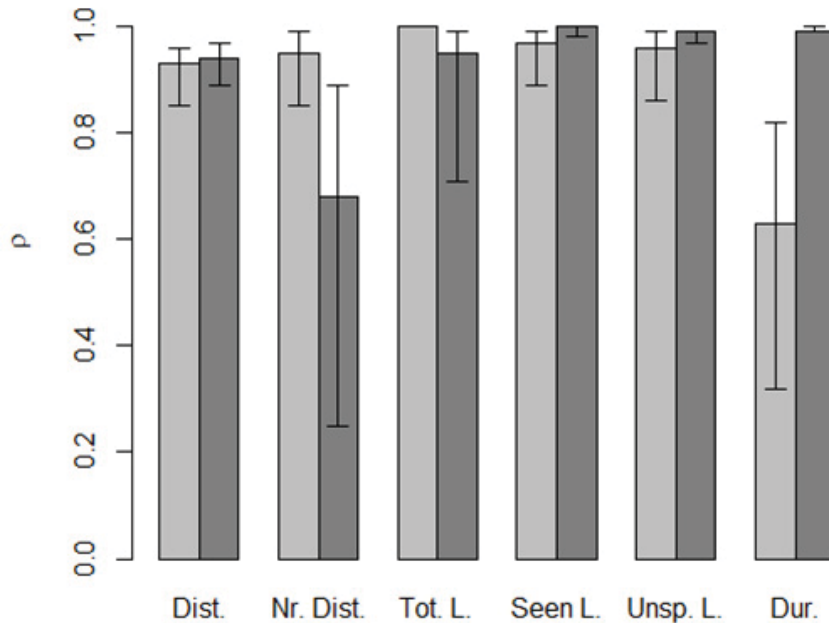


Figure 1. Single witness (*sose*) consistency (light grey) and multiple witness (*dose*) consistency (dark grey) from aquatic monster accounts.

in the case of seen length, $\rho = 1$ ($0.98 - 1$), $n = 8$, $P < 0.001$; in the case of unspecified length, $\rho = 0.99$ ($0.97 - 0.99$), $n = 28$, $P < 0.001$; and in the case of duration of encounter, $\rho = 0.99$, ($0.99 - 1$), $n = 61$, $P < 0.001$.

Multiple Witness Accounts Versus Same Witness Accounts

Figure 1 compares the estimated r for the different variables in the *sose* and *dose* cases. There is no evidence from this study that *dose* cases are less consistent than *sose* cases.

Error bars indicate 95% confidence intervals. Where error bars cannot be seen, the 95% confidence interval is (1,1).

Discussion

Where feasible, the estimation of repeatability should be a fundamental feature in any assessment of the reliability of anecdotally reported phenomena, assuming reasonably that consistency within and between witnesses is one possible indicator of reliability. To our knowledge, this is the first time consistency has been estimated in reports of anomalies. Witnesses describe

seeing aquatic “monsters” as an extraordinary moment in their lives, even “unforgettable” (Dinsdale 1973:69, Dinsdale 1972:93), and so presumably such events are emotionally arousing and should lead to relatively good memory of the encounter compared with more prosaic events. The events are not normally noted as being unpleasant, but instead as rather exciting (e.g., Holiday 1968:111), although there are accounts where the witnesses appear to be perturbed by the event (e.g., the account of Badger in *Daily Star* March 8, 1999). Other investigations of consistency tend to consider consistency in terms of the qualitative features remembered (i.e. are the same features remembered) rather than the consistency of the quantitative estimates. For example, Dutch serviceperson peacekeepers remembered 0.72 of events recorded in an initial survey on resurveying (Bramsen et al. 2001). Thus the consistency scores in themselves do not suggest that the witnesses are generally lying, although it would be useful to formally test the relationship between consistency and truth in reports of anomalies. Where tested in other contexts there is no relationship (e.g., Smeets, Candel, & Merckelbach 2004, Fisher & Cutler 1996). As might be expected, witnesses are not wholly internally consistent in cryptozoological reports, yet the *sose* correlations are quite high, suggesting that individual reports can be looked upon as quite precise. *dose* results are similar. However, given the possibility of reference back to original witness statements in the *sose* cases and discussion between witnesses in the *dose* cases, these results should be looked on as best-case scenarios for eyewitness consistency.

It should be stressed that any inconsistencies seen are not necessarily solely a result of imperfections of memory but also possibly imprecision in the way the report is interpreted and printed by others. Gould (1934) provides examples of witnesses who claimed they were misquoted by the press, although as only firsthand accounts (i.e. witnesses are directly quoted) are considered here this effect should hopefully be mitigated. The results suggest that just as in other forms of memory recollection (Loftus 1996), imprecision does exist in witness accounts of anomalous phenomena. There is no current significant evidence that *sose* reports are more consistent than *dose* reports, although it might be assumed they should be, given different perceptions of different witnesses. The reason for the difference between the *sose* and *dose* duration results is unclear, but, if real, perhaps the duration of the encounter for single witnesses is a somewhat unimportant feature of their experience so it is recalled with little consistency.

The consistency in reports by the same individual is presumably primarily driven by memory and post-witness publication and collection effects (e.g., reporter misquotes, typographical errors, etc). Whereas consistency in reports by different individuals will be driven by all the above and dif-

ferences between witnesses in the reported dimensions. That *dose* and *sose* accounts have similar repeatability (except in the case of duration) implies that variation due to differences in the reported dimensions is negligible relative to the other factors. This could be because of broad agreement in the dimensions under consideration but also because of memory conformity, that is, that witnesses who are in contact with each other may converge on a common memory of what took place. Alternatively it could be for both the *sose* and *dose* situations the post-witness noise in the reporting process overwhelms the variation due to other effects. We cannot distinguish between these mechanisms here. Formal estimates of memory conformity as distinct from repeatability suggest that about 70% of witnesses can be induced into reporting information they did not themselves witness (Gabbert, Memon, & Allan 2003, Wilson & French 2004), so presumably witnesses could influence each other's estimates of dimension.

Precision is not the same as accuracy, but if there was very low precision (hence low repeatability) associated with the quantifiable aspects of reports this would indicate that these features of any single report would be likely to be unsystematically inaccurate. Based on the current albeit best-case evidence here, such low precision is surprisingly not the case.

Acknowledgments

June O'Neill and Roland Watson for supplying much source material on the New England Sea Serpent and the Loch Ness Monster, respectively. Richard Wiseman for comments on the manuscript.

Ethical Statement. There were no ethical issues.

Funding Statement. No sources of funding.

Data Accessibility. The datasets supporting this article have been uploaded as the Supplementary Material files “dose data” and “sose data”.

Competing Interests. We have no competing interests.

Authors' Contributions. CGMP suggested the analysis, undertook the statistical analysis, and wrote the paper. AJS supplied some of the source material, and suggested improvements in the manuscript.

References Cited

- Baugerud, G. A., Magnussen, S., & Melinder, A. (2014). High accuracy but low consistency in children's long-term recall of a real-life stressful event. *Journal of Experimental Child Psychology*, 126:357–368. doi:10.1016/j.jecp.2014.05.009
- Birchenough, S. N. R., Reiss, H., Degraer, S., Mieszkowska, N., Borja, Á., Buhl-Mortensen, L., et al. (2015). Climate change and marine benthos: A review of existing research and future directions in the North Atlantic. *Wiley Interdisciplinary Reviews—Climate Change*, 6(2):203–223. doi:10.1002/wcc.330

- Boeck, W. L., Vaughan, O. H., Blakesleeb, R. J., Vonnegut, B., & Brook, M. (1998). The role of the space shuttle videotapes in the discovery of sprites, jets and elves. *Journal of Atmospheric and Terrestrial Physics*, 60:669–677. doi:10.1016/S1364-6826(98)00025-X
- Bramsen, I., Dirkzwager, A. J. E., van Esch, S. C. M., & van der Ploeg, H. M. (2001). Consistency of self-reports of traumatic events in a population of Dutch peacekeepers: Reason for optimism? *Journal of Traumatic Stress*, 14(4):733–740.
- Burke, J. G. (1986). *Cosmic Debris: Meteorites in History*. Berkeley, CA: University of California Press.
- Burton, M. (1961). *The Elusive Monster*. London: Hart-Davis.
- Dinsdale, T. (1972). *The Loch Ness Monster*. London: Routledge & Kegan Paul.
- Dinsdale, T. (1973). *The Story of the Loch Ness Monster*. London: Target.
- Draper, L. (1964). ‘Freak’ ocean waves. *Oceanus*, 10:13–15.
- Fisher, R. P., & Cutler, B. L. (1996). The relation between consistency and accuracy of eyewitness testimony. In *Psychology and Law: Advances in Research* edited by G. M. Davies, S. Lloyd-Bostock, M. McMurrin, & C. Wilson, pp. 21–28, Berlin: De Gruyter.
- Fitchett, J. M., Grab, S. W., & Thompson, D. I. (2015). Plant phenology and climate change: Progress in methodological approaches and application. *Progress in Physical Geography*, 39(4):460–482. doi:10.1177/0309133315578940
- Gabbert, F., Memon, A., & Allan, K. (2003). Memory conformity: Can eyewitnesses influence each other’s memories for an event? *Applied Cognitive Psychology*, 17(5):533–543.
- Gould, R. T. (1930). *The Case for the Sea Serpent* (first edition). London: Philip Allan.
- Gould, R. T. (1934). *The Loch Ness Monster*. London: Geoffrey Bles.
- Heuvelmans, B. (1968). *In the Wake of the Sea-Serpents*. New York: Hart-Davis.
- Holiday, F. W. (1968). *The Great Orm of Loch Ness*. London: Faber and Faber.
- Huntington, H. P., Suydam, R. S., & Rosenberg, D. H. (2004). Traditional knowledge and satellite tracking as complementary approaches to ecological understanding. *Environmental Conservation*, 31:177–180. doi:10.1017/s0376892904001559
- Krähenbühl, S., Blades, M., & Eiser, C. (2009). The effect of repeated questioning on children’s accuracy and consistency in eyewitness testimony. *Legal and Criminological Psychology*, 14(2):263–278. doi:10.1348/135532508X398549
- Loftus, E. (1996). *Eyewitness Testimony*. Cambridge: Harvard.
- Loxton, D., & Prothero, D. R. (2013). *Abominable Science*. New York: Columbia University Press.
- McKelvey, K. S., Aubry, K. B., & Schwartz, M. K. (2008). Using anecdotal occurrence data for rare or elusive species: The illusion of reality and a call for evidentiary standards. *Bioscience*, 58(6):549–555. doi:10.1641/b580611
- Meade-Waldo, E. G. B., & Nicoll, M. J. (1906). Description of an unknown animal seen at sea off the coast of Brazil. *Proceedings of the Zoological Society of London* 2:719–721.
- Odinot, G., Wolters, G., & van Giezen, A. (2013). Accuracy, confidence and consistency in repeated recall of events. *Psychology Crime & Law*, 19(7):629–642. doi:1080/1068316x.2012.660152
- Paxton, C. G. M. (1998). A cumulative species distribution curve for large open water marine animals. *Journal of the Marine Biological Association of the United Kingdom*, 78:1389–1391. doi:10.1111/j.1469-7998.2009.00630
- Paxton, C. G. M., Knatterud, K., & Hedley, S. L. (2005). Cetaceans, sex and sea serpents: An analysis of the Egede accounts of a “most dreadful monster” seen off the coast of Greenland in 1734. *Archives of Natural History*, 32(1):1–9. doi:10.3366/anh.2005.32.1.1
- Paxton, C. G. M. (2009). The plural of ‘anecdote’ can be ‘data’: Statistical analysis of viewing distances in reports of unidentified large marine animals 1758–2000. *Journal of Zoology*, 279:381–387. doi:10.1111/j.1469-7998.2009.00630.x
- Paxton, C. G. M. (2010). The Monster Manual. *Fortean Times*, 265:54.
- R Developmental Core Team (2014). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing.

- Revelle, W. (2014). Library 'psych'.
- Scott, P., & Rines, R. (1975). Naming the Loch Ness monster. *Nature*, *258*:466–468. doi: [10.1038/258466a0](https://doi.org/10.1038/258466a0)
- Service, C. N., Adams, M. S., Artelle, K. A., Paquet, P., Grant, L. V., & Darimont, C. T. (2014). Indigenous knowledge and science unite to reveal spatial and temporal dimensions of distributional shift in wildlife of conservation concern. *PLOS ONE*, *9*(7):e101595. doi:[10.1371/journal.pone.0101595](https://doi.org/10.1371/journal.pone.0101595)
- Shermer, M. (1997). *Why People Believe Weird Things*. New York: Freeman.
- Shermer, M. (2003). Show Me the Body. *Scientific American*, *288*:27.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlation: Uses in assessing rater reliability. *Psychological Bulletin*, *86*:420–428.
- Smeets, T., Candel, I., & Merckelbach, H. (2004). Accuracy, completeness, and consistency of emotional memories. *American Journal of Psychology*, *117*(4):595–609. doi:[10.2307/4148994](https://doi.org/10.2307/4148994)
- Whyte, C. (1957). *More Than a Legend*. London: Hamish Hamilton.
- Wilson, K., & French, C. C. (2004). Memory conformity and paranormal belief. *The Parapsychological Association Convention*, 469–471.
- Witchell, N. (1979). *The Loch Ness Story*. London: Book Club.
- Zar, J. H. (1996). *Biostatistical Analysis*. London: Prentice-Hall.

RESEARCH ARTICLE

Follow-Up Investigation of the Felix Circle

STEPHEN E. BRAUDE

Submitted January 6, 2016; Accepted February 8, 2016; Published March 15, 2016

Abstract—In October 2015, I supervised a series of séances in Hanau, Germany, with the Felix Experimental Group (FEG) physical medium Kai Mügge. The purpose was to try to obtain better documentation of Kai's table levitations than my team was able to achieve in Austria in 2013 (Braude 2014). Although that goal was not met over the course of four séances, we nevertheless witnessed some interesting phenomena that are difficult to explain away normally given the control conditions imposed at the time. These include object movements beyond the reach of the sitters, a very strange "exploding" sound from the séance table, and some extended levitations in which the table seemed to sway or swim in midair. But what may be most interesting about this series of séances is the way the phenomena reflect the complex, and tortured, underlying psychodynamics of the occasion. Indeed, what readers need to know about the FEG phenomena has as much to do with the personalities involved as with the phenomena themselves. As a result, this report focuses as much on the background to the investigation as on the investigation itself.

The Initial Obstacles and the Messy Background

In an earlier paper (Braude 2014), I described my previous investigations of the Felix Experimental Group (FEG) and its medium Kai Mügge. I noted there why at least some of Kai's phenomena were quite compelling and why I was reasonably confident that certain of them were genuine. I found Kai's table levitations to be especially noteworthy, and on two occasions I'd been able to make video recordings of the event—one in infrared light, and the other in light from an incandescent red lamp. Unfortunately, both videos were problematical. In the former, Kai inadvertently (in the darkness) blocked much of the view of the table, so that one of his hands was not visible; the other hand was waving up and down, imitating Eusapia Palladino's practice of encouraging a table to rise. In the latter, although hands and feet are visible, it's not clear in the dim light where Kai's thumbs were. I noted in my paper why I doubted the skeptical suggestion that Kai could have produced an apparent levitation with his thumbs, in a table he had

no opportunity to rig, and in which the table's movements had the sensory characteristics of being weightless and buoyant (rather than forced upward). Nevertheless, it seemed worthwhile to try to obtain better quality video of Kai's table levitations, and I contacted Kai to coordinate an additional series of séances.

But from the beginning, this series proved to be a struggle to arrange, and the difficulties came as no surprise. For one thing, when Michael Nahm and I published our 2014 reports on the FEG (Braude 2014, Nahm 2014), we already knew that Kai had cheated on at least one occasion (not supervised by me), by using a light-emitting device similar to a magician's trick called the D'Lite Flight. That device employs a diode at the end of a very thin wire attached usually to the user's thumb, which can make it appear as if points of light are moving around in the vicinity of the magician. In 2011, regular Felix Circle investigator Jochen S. (pseudonym) took two series of photographs, (remarkably, in retrospect) at Kai's request, from séances in Koblenz, Germany. From the start, the reddish lights shown on those photos looked suspicious to Jochen, and quite unlike the more convincing lights he'd seen at a distance from the medium. After Jochen shared the photos with Nahm in 2014, Nahm noticed that they revealed how the movement of Kai's thumb corresponded to the movement of these lights, just as they would if Kai had been using a device like the D'Lite Flight. Thereafter, Jochen also revealed to us that he had discovered a light-emitting device in Kai's travel bag after one of the Koblenz séances. Furthermore, he told us that after he confronted Kai with the combined evidence of his finding in 2011 and Nahm's discovery about the photos in 2014, Kai apologetically admitted to using the device and to having concealed it on the shelves behind his curtained "cabinet" during the séances in Koblenz. (For more details, including Jochen's firsthand account of this sequence of events, see the Appendix of this paper.)

The publicity generated by Nahm's and my papers, and subsequent Internet discussion by Nahm and others of additional possible instances of fraud, initially led Kai to flatly refuse my proposal to document even more clearly the table levitation we had been able to videorecord in Austria. I told Kai that neither Nahm nor I had been able to explain away, credibly, certain of the manifestations observed in the Austrian series of séances,¹ and that if Kai wanted to demonstrate that he was more than a mere fraud, the best course would be to document even more clearly those phenomena that are most easily captured on video and most resistant to glib skeptical dismissals. I argued that his table levitations should be the focus of a follow-up series of séances.

Kai was apparently unmoved by my arguments, and his resistance was

supported by his wife Julia and members of his family, all of whom argued that he only had more to lose from further work with those interested in studying him under conditions acceptable to scientists. During those few occasions when Kai seemed amenable to trying some further tests, he nevertheless maintained that he could not return to my videographer Robert Narholz's farmhouse in Austria. I had considered that location nearly ideal, because (as described in my 2014 report) it could be controlled easily and was not otherwise accessible to Kai. But Kai claimed he had been terribly uncomfortable there under conditions of constant scrutiny and the pressure to produce good phenomena. Moreover, because Kai claimed that the location was now further tainted by Michael Nahm's transformation from a friendly investigator to one of his most vocal and fierce critics, returning to the farmhouse was, Kai said, out of the question. (For more on Nahm's change of attitude, see Nahm's Commentary (2016) in this issue.)

I then figured that if any further work with Kai was to occur, it would have to be in more congenial surroundings—presumably, his home base in Hanau, Germany. I also recognized that we'd probably have to work in the usual Hanau venue for Kai's séances: the bomb-shelter basement in Kai's parents' house. Although I realized this would inevitably raise red flags for critics, I figured that we could minimize concerns fairly easily. After all, we intended only to study the most easily documented of Kai's phenomena—table levitations. Our limited goal was to obtain even clearer video recording of the levitations than we got in Austria, figuring that if these could be even more firmly established as genuine, then Kai's most ardent and shallow critics would have to abandon the claim that Kai is nothing but a cheat, and that this might open the door to more reasoned and calm appraisals of Kai's mediumship as a whole. Moreover, since Kai had recently cleared out his curtained-off computer/media nook from the bomb-shelter location, the séance room itself was quite bare and would be very easy to search and declare free of suspicious devices. And besides, if we had good video from multiple angles of the levitations, it should be obvious that no tricks were employed. I did try, unsuccessfully, to secure an alternate location for these table séances. But (not surprisingly) Hanau hotels were opposed to the idea of having late night singing and séance-frivolity occurring in one of their conference rooms.

Fortunately, Kai seemed open to the idea of holding further table séances in Hanau, although Julia and family members still tried to discourage him. Even though we had to wait two and a half years before holding our follow-up tests in Hanau, in October 2015, it should be noted that those delays were not due to Kai. On at least two occasions Kai and I settled on a period when he had an opening in his very busy schedule, but it was difficult to get other

key members of my team to break free at those times. The main holdout on those occasions was former circle leader Jochen. Although Julia had assumed regular duty now as circle leader, Kai still considered Jochen to be a crucial component in the mix—someone he not only trusted and liked, but also someone whose scientific credentials both Kai and I recognized to be impeccable. Quite understandably, Jochen’s schedule was even busier than Kai’s. He divided his professional time between research at a world-famous scientific institute and his cardiological clinical work at a hospital. Moreover, he was scrupulous in devoting as much time as possible to his wife and children.

As the time for our tests approached, the entire enterprise fell under the cloud of attacks on both Kai and Jochen. The attacks on Kai were the usual critical assaults, including recent criticism from Peter Mulacz and Michael Nahm in the Society for Psychical Research’s magazine, *Paranormal Review* (Mulacz 2015, Nahm 2015). The attacks on Jochen concerned charges that he was an accomplice in Kai’s fraud and (in a direct effort to undermine his professional career) threats to reveal Jochen’s real identity and contact his employer about Jochen’s allegedly “unscientific” FEG activities. And just shortly before the trip was to take place, Jochen’s identity was indeed revealed in an online blog written by a former, embittered FEG member. So just as the travel to Europe was about to begin, both Kai and Jochen were deeply shaken and wary about our plans to hold séances as scheduled.

My main collaborator, as in the Austrian 2013 investigations, was filmmaker Robert Narholz, who is preparing a documentary tentatively called *Finding PK*. Since Michael Nahm had no inclination to associate with Kai again after he found out about the latter’s repeated cheating, and since he was now persona non grata at the Felix Circle anyway, we replaced him with someone Kai liked and trusted, and whom Robert and I also could trust—noted journalist Leslie Kean, perhaps best-known to readers of this *Journal* as the author of an outstanding survey of evidence for UFOs (Kean 2010). Leslie, who is currently researching mediumship and postmortem survival, had attended several of Kai’s séances in the U.S. and other physical mediumship circles in the UK, and was quite familiar at this point with the history of the subject and the current state of physical mediumship. Because she’s now a seasoned and critical observer, Robert and I were certain that her presence would be a great asset.

Boots on the Ground

Leslie and I arrived in Hanau on September 30; Robert’s arrival was scheduled for October 3. Leslie and I had hoped to devote the first few days in Hanau to recovering from jet lag and trying to establish a positive and

friendly working relationship with Kai and Julia. I hadn't seen Kai (except via Skype) since our 2013 Austrian sessions, and although those Skype sessions had mostly been friendly (including the one where I confronted Kai about his cheating), I was eager to have some time, before testing, to reestablish the in-person warmth we had previously enjoyed. Unlike some, I did not regard what I knew for certain about Kai's cheating to be an inevitable impediment to cordiality or even to friendship.

So Leslie and I spent some time, soon after arrival, with Kai, Julia, and Jochen at Kai's new and quite comfortable modern apartment. Kai showed us various rare books from his impressive collection of works on physical mediumship, and then the five of us went to dinner. It was clear that Jochen and Kai were both very anxious—Kai because he was afraid of failure and how that would be interpreted by critics and others, and Jochen because of the recent Internet exposure of his real identity and the blogger's unauthorized (and illegal) use of Jochen's photos of Kai apparently employing a device like the magician's D'Lite Flight. Jochen also informed us that his wife was firmly opposed to Jochen being identified, even under his usual pseudonym. At the time they were both quite afraid of further efforts by the blogger to harm Jochen professionally.

I did my best to diminish Kai's concerns. I reminded him that our goal was simply to improve on documenting the table levitations, and that Robert, Leslie, and I all understood that—especially under the prevailing tensions—there was no disgrace in getting no, or only disappointing, results. So I assured Kai I wouldn't be writing a damning critical report about our meeting if he simply tried, but failed, to get the results we'd aimed for. And Leslie and I assured him further that we were confident that something of value would happen, and that we had no doubt that we'd get some good table levitations. The main thing, I reminded Kai quite clearly, was that he should not do anything foolish. I believe Kai understood precisely what I meant by that.

Kai informed us soon after our arrival that he'd be able to participate in only four séances. That came as a surprise. Robert and I had been under the impression that Kai's cabinet séances took more out of him than table séances, due to the physical toll of Kai's "holotropic" breathing and the apparently physically demanding process of producing ectoplasm. So we were hopeful that we could hold more than four sessions, and at least a few on consecutive days to maximize our opportunities for good documentation. After all, we had held table séances on consecutive days during our Austrian sessions with Kai in 2013. So we figured we'd spend our first few days in Hanau just hanging out cordially and holding casual séances, and then when Robert arrived we'd begin to hold well-controlled

sessions. But Kai now explained that he needed one day's rest between séances. I expected his reason for this requirement to be that the stress of the occasion made each table séance more exhausting than it would be under more usual, and informal, circumstances. Instead, Kai's justification was that table levitations are *more* exhausting than cabinet sittings, because in the former he feels more conscious responsibility and stress than when he's in a trance during cabinet sittings, at which times those sources of stress are allegedly switched off. So a cabinet sitting, he was now claiming, is one of his few opportunities to sleep. Now, if Kai's waking consciousness is really and fully switched off during a cabinet séance (a matter deserving further scrutiny, and which Michael Nahm claims is simply false—see Nahm's Commentary in this issue), that might indeed reduce one kind of stress. But considering Kai's pronounced sweating and physical exhaustion after cabinet sittings, I doubt in any case that table séances overall take more out of Kai than cabinet séances.

In fact, I suspect that Kai's reluctance to hold more séances may have had a more mundane explanation than the one he provided. I consider it more likely that Kai was simply anxious and ambivalent about the entire investigation, and that as a result he was sleeping even less than usual and was worried that stress and fatigue would lead to poor results in the table séances. I think Kai hoped to get as much rest and relaxation as possible between the séances, anticipating that each occasion would be difficult for him. And as it happened, Kai reported throughout our visit that he was indeed sleeping poorly, and even less than usual.

Because Robert would be able to join us only from October 3 to October 9, and although Jochen had family obligations, Leslie and I decided that we should hold a séance without them on October 2, just to get Kai warmed up and at least somewhat adjusted to the presence of experimenters generally and us in particular. Kai agreed this was a good idea.

So an informal Séance #1 was held on the evening of October 2, in darkness, lasting about an hour. Sitters (clockwise) were Kai, Elke (Kai's mother), Leslie, myself (SB), and Julia (operating the CD player and red light). The table was Kai's usual plastic garden table, 33.5 in in diameter and 28 in high (see Figure 1). Before we began, Kai asked Leslie and me, individually, to discern how hard it was to lift the table when other sitters' hands were resting atop it. We both agreed we could not make the table rise either smoothly or with its top horizontal and parallel to the ground (much less both together). And any movements we could produce resulted in table movements that felt obviously different from the way ostensibly genuine levitations feel—namely, slow, buoyant, and weightless, and not as if pushed. I've found that when others try manually to move the table

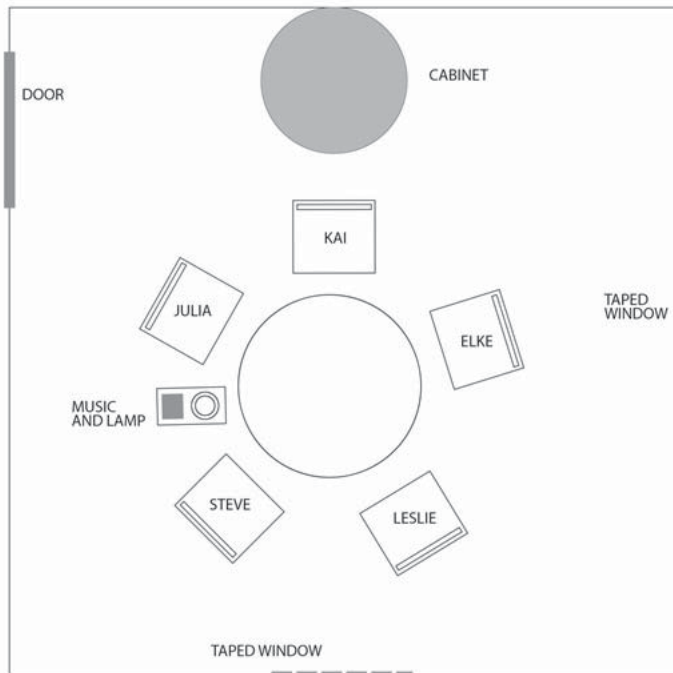


Figure 1. Configuration of the séance room for Séance #1.

upward, the table feels as if it's being forced upward, whereas levitated tables seem to float.

In addition to the levitations I describe below, several other interesting events occurred. For example, a few lights were visible at various points around the room, some of them observed collectively. In fact, Leslie, Julia, and Elke each reported seeing lights around the cabinet at the other end of the room and presumably out of Kai's reach. For those, Kai's position at the table was easy to judge by his loud singing. Moreover, we all heard a few strong raps on the wall, far away from the sitters, whose locations, again, were easily discerned by their singing. And (perhaps most interesting) the bell hanging from the ceiling behind my head rang loudly. The bell was located behind me; I was seated across from Kai; and I'm certain that no one of the sitters was within reach of that bell. In fact, the bell was closest to me, and I couldn't reach it from a sitting position.

We also had four table levitations, none lower than 1.5 ft from the ground; the shortest lasting about 4 sec. The final two were the most impressive. For Levitation #3, the table rose at least 2 ft, remained there

for about 5 sec, started to descend slowly but remained several inches off the ground, and then slowly rose again to a height of about 2 ft, remained there for several seconds, and then descended rapidly, hitting the laminate flooring with a plastic thud.

In Levitation #4, the table rose at least 2.5 ft, and after being aloft for several seconds it began to sway, dipping first to my left, then to my right, and back and forth a few more times, almost as if it was “swimming” to the rhythm of the music. When that was done, the table descended rapidly. The whole event probably lasted at least 15 sec.

Kai, as usual, was dressed in a short-sleeved T-shirt. Clearly, there were no hidden contraptions up his sleeve that he could extend under the table in cover of darkness to make the table rise or “swim.” In fact, as usual when we greet each other, we did so with an extended and warm hug. So there was at least a hug-body check, and I felt nothing under Kai’s shirt.

More Formal Séances

Séance #2 was held on October 4, the day after Robert arrived. We set up two cameras, but Kai was clearly nervous about their presence. For one thing, he claimed (as he often does) that the phenomena like to hide and that attempts to capture them will likely either reduce them or snuff them out altogether. Robert and I assured Kai, as we had done many times before, that it was better to record modest phenomena under good conditions than florid phenomena under poor conditions. Kai said he understood, and I’m quite sure he did (the point is not difficult to grasp). But Kai was also concerned that the cameras might be turned on accidentally or surreptitiously, as had happened with Peter Mulacz’s infrared camcorder during our initial investigation of the FEG (see Braude 2014). So, to calm Kai down, Robert covered the cameras with a black cloth and kept them turned off. Our plan was that if good phenomena occurred and Kai was prepared to experiment, we’d turn the cameras on later, and in the meantime simply accept the fact that Kai needed to get accustomed to the presence of low- light-sensitive cameras. We didn’t like the fact that this left us only two more opportunities to get the video footage we’d hoped for. And Kai had already conceded that the longer we waited to get such footage, the more pressure he’d feel at the later séances. Still, Kai was not ready to begin with the cameras turned on and uncovered.

So, after dinner with Kai and Julia it took about an hour to clear the room. Kai’s standard black cloth “cabinet” routinely hangs toward the back of the room, and we removed both it and other pieces of unnecessary furniture. The chair that had been in the cabinet (the standard resting place of focus objects like a tambourine) remained, and a large circular drum

(diameter approximately 18 in) was placed against the chair legs, leaning somewhat precariously (see Figure 2).

Robert, Leslie, and I checked the room thoroughly. We unlocked and removed the tape from the various windows, and determined that there was nothing behind them but Styrofoam, and certainly no hidden devices. Robert and I also toured the various nearby rooms of the basement, confirming there was no access from those rooms to the séance area. Robert video recorded these tours as well as my inspection of the séance room. We also inspected the séance table, looking carefully underneath. There was certainly no hidden contraption or anything else suspicious. Finally, I locked the door leading upstairs to the rest of the house, and we also locked the door leading to the laundry room.



Figure 2. Circular drum (and other “focus” objects) arrangement for Séance #2.

Elke was disappointed to learn that I wanted to exclude her from this séance, because I wanted to keep the number of sitters to a minimum. Kai was disappointed as well, though he shouldn’t have been surprised, and he was wary of our desire to remove the cabinet curtain from the room, claiming that its presence helped concentrate the energy. I promised to bring it back if we obtained no results, in the belief that video documentation could show conclusively that no previously hidden contraption that could levitate the table emerged from the cabinet.

Sitters clockwise from Kai were Leslie, Robert, Jochen, SB, and Julia (who, as usual, operated the CD player and red light).

Séance #2 was in two parts. The first was rather unimpressive; Kai had tired during the hour’s wait to set up the room, and his initial enthusiasm and energy seemed to have abated somewhat. Still, we had three full levitations in darkness, preceded by fewer than the usual amount of table movements—

the table just started to rise without the customary strong preamble. The levitations ranged from 3 to 6 sec, and from 6 in to 12 or 15 in. After the levitations, Kai had Julia immediately turned up the red light to show that Julia and Leslie were controlling Kai's hands and resting their feet on his feet. Of course, that doesn't tell us where those limbs were immediately prior to the turning on of the light, but Leslie was controlling Kai the entire time and was able to state that Kai's left hand and foot hadn't moved under her right hand and foot.

After the break there were two strong levitations and more vigorous table movements than we enjoyed in the earlier part of the séance. On two occasions the table rocked quite violently to my left and right, each time lifting two legs high off the ground and then returning to the ground with great force and a loud plastic thud against the laminate floor. The last of these table-leg-banging events seemed to signal the end of the evening's session; at least that's how Kai understood it.

For Levitation #4, the table slowly rose as high as 24 in, the whole event lasting perhaps 10 sec. It occurred in stages, initially rising about half that distance and then—when I thought the event had reached its peak—rising the rest of the way. Levitation #5 was another “swimming” table event, with the table again about 2.5 ft high, dipping back and forth several times over the course of 10 to 15 sec.

At one point I saw a bright red light in the vicinity of Julia's lap. I asked her whether she had turned on a light and she said no.² Other sitters reported seeing a few lights. We also heard a strong knocking sound, which some thought came from behind me but which I thought came from the wall on my left (well beyond Julia's reach, judging by the location of her voice).

By far, the most outstanding non-levitation event was a loud whack from the drum leaning against the chair with the focus objects. The chair was out of Kai's reach, and in any case Leslie confirmed touching Kai's left leg and hand (the side closest to the drum). When the séance was over, Leslie hit the drum moderately with her hand, to see how the sound compared with what we'd heard. The resulting sound was clearly not as loud as it had been earlier, and Leslie's relatively modest pressure on the drum knocked it from its precarious upright position. Undoubtedly, a more forceful, normally produced, sound would easily have moved the drum from its position. I should add that the drum (before Leslie struck it) was positioned as it had been before the séance began. I suppose skeptics could argue that since Kai wasn't searched beforehand, he might have concealed some device on his person that could have banged the drum. But (a) Kai was wearing a short-sleeved T-shirt as usual, (b) his nearest hand and leg were controlled by Leslie (his other hand and leg were ostensibly controlled by Julia), and

(c) if the drum had been forcibly hit—in the dark—by an ordinary object capable of producing such a loud sound, why wasn't the drum knocked over or moved from its original position?

We can't also state with certainty that Kai didn't smuggle in some device, undetected in my hug-body check, that could be used to raise the table. But that supposition seems both implausible and also inadequate for explaining the types of levitations we observed. First, at least one hand and leg were controlled by Leslie (and the other by Julia). And even so, the swaying (or swimming) table would be particularly difficult to produce under the prevailing conditions. Interestingly, Robert impressed us before the séance began by demonstrating that he could raise the table fairly smoothly with his hands, so long as he could grip one table leg between his own legs. But there's no reason to think Kai did this. For one thing, the tactile and kinesthetic experience for me of Robert's lifting of the table was quite different from that of Kai's ostensibly genuine levitations. As I've noted on other occasions, the manually raised table did not feel weightless or buoyant as it moved upward. Furthermore, when the presumably genuine levitations took place, we know that Kai's legs were spread apart (this was confirmed immediately following the levitations, when Julia turned up the red lamp to illuminate hand and foot controls). I suppose Kai might have braced two table legs with his own spread knees and supported the table in that manner, but Leslie (and presumably Julia) nevertheless controlled Kai's hands and feet, and in any case Kai couldn't have made the table sway under those conditions. Leslie also confirmed that Kai didn't have any sticky substance (like resin) on his palms that could have been used to raise the table when she controlled his hand by placing her hand on top of his (with his palm faced down on the table).

Furthermore, Robert tried a little experiment of his own. While the table was aloft, he pressed down on his side of the table to see whether it would dip there, as if it was being raised by Kai from his position across from Robert. He reasoned that if Kai had been lifting the table with his hands from his side of the table, one would think that the table would yield relatively easily to Robert's applied pressure at the opposite side. But the table resisted, as if the "force" raising it was applied uniformly, or from the center of the table.

One of the persistent criticisms of Kai (especially from Peter Mulacz) is that Kai is uncooperative and that he (rather than the experimenters) specifies the séance conditions. That was clearly not the case this evening. Granted, Kai didn't let us do whatever we wanted, but we didn't expect to do everything we wanted. We recognized that Kai was already anxious, and we knew from the start that we'd probably need to tighten séance conditions

gradually. In that light, I think it's fair to say that Kai was quite cooperative. As I noted (and as we expected), he was unhappy about not having Elke or the cabinet present in the room, and he also lamented the removal of many carefully arranged accessories for his normal séances. But he understood what was at stake, and his concern seemed genuinely only to be that the phenomena would be less strong under our imposed conditions—not that no phenomena would occur. The only conditions Kai actually required were darkness and the covering of the cameras. The former is a common séance condition and no big deal, and we compensated for it to some extent with hand and leg controls. The latter request was completely unnecessary, since we weren't attempting then to record the proceedings. Instead, we were interested primarily in getting Kai more comfortable with rather Spartan séance conditions, enhanced scrutiny, and the presence (but not the activation) of cameras. In my view, Kai was needlessly paranoid about the latter condition, insisting that we cover the cameras with a black cloth, so that they wouldn't surreptitiously or accidentally record the proceedings. However, I understood that this had to do with Kai's experiences with Peter Mulacz, who had lied to him³ and violated séance protocols. So I urged Kai to overcome his fear and reminded him that I had always been honest and respectful of him and had never violated any agreements. In any case, Kai's heightened wariness, justified or not, was a notable element throughout this investigation, and it undoubtedly was an impediment to success.

I also attach little significance to the fact that Kai resisted turning on the cameras during this séance. The next two séances made clear that Kai was willing, after this period of adjustment, to permit the running of more cameras and more sensitive cameras than we'd had in Austria, and also that he was also willing to have the red light turned on—not just after the levitations began (which is what occurred in Austria), but while waiting for the phenomena to occur.

In an email to me, Kai offered various reasons for his disappointing (to him) results in Séance #2. One was his concern over the access and rights to whatever video footage we obtained, a matter which he thought had not yet been settled with Robert (although Robert and I thought the matter had been clarified). Another was the concern over hidden filming, a fear Kai placed fully on the shoulders of Peter Mulacz.

But apparently the main issue was that Kai said he was caught up in Jochen's extreme distress over, first, the disgruntled blogger's threats to reveal Jochen's identity, and second (and more important) Jochen's concern that the blogger had accused him of covering up Kai's fraud, and then threatened to make that claim to Jochen's employer. Jochen naturally feared that this allegation, even if false, might be enough to undermine his



Figure 3. Arrangement for Séances #3 and #4. Note arrow pointing to hanging bell (top right).

pending professorship. Of course, the only reason this was even an issue for Jochen is that Jochen had felt implied pressure from his friendship with Kai not to reveal the truth about Kai's cheating with the D'Lite Flight-type device Jochen had discovered in Kai's travel bag. That put Jochen in the compromising position of having to lie to me or others in order to protect what Kai revealed in confidence to him (see my 2014 report, and the Appendix in this article). From the start, Kai should have confessed to the fraud, explained why he fell from grace, apologized, and moved on. Instead, Kai's dishonesty on this matter (and probably other matters) continued unabated. Since Michael Nahm's and my previous *JSE* reports appeared, Kai has had many opportunities to admit that he cheated with the D'Lite-type device, but he has consistently denied it. Moreover, when Robert interviewed Kai for his documentary, after our series was completed, Robert asked directly if Kai had ever used a device like the D'Lite Flight, and Kai again denied it.

Séance #3, October 6. The results of the séance this evening were disappointing but not entirely unanticipated. Robert set up two video

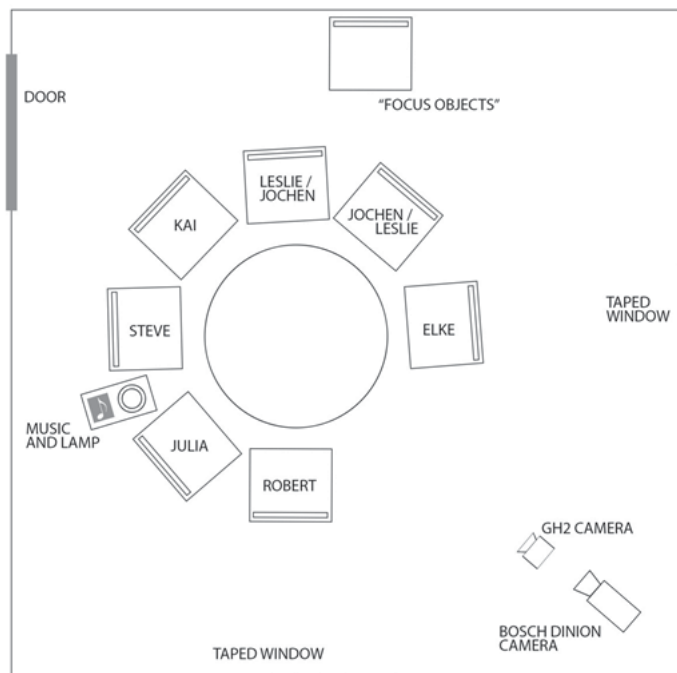


Figure 4. Diagram of room arrangement for Séances #3 and #4.

cameras: a low-light Bosch Dinion Starlight HD surveillance camera covered the tabletop and showed sitters' hands, and a hacked Panasonic Lumix GH2 captured the view under the table. We planned only on illumination from the red light next to the CD player. Despite Kai's lack of communication during the day, he apparently had been working himself into a positive mental state and seemed ready (and maybe even eager) to get results. We had agreed to have the cameras running all the while, uncovered, and Kai seemed at least cognitively (if not emotionally) to be at peace with having the cameras record so long as the room was dark. To help him get into and remain in a positive frame of mind, we allowed Elke to join us again, despite the fact that as a family member she's a natural target of suspicion, and despite the fact that the extra body around the table only increased the difficulty of obtaining a good camera angle on the proceedings. We dealt with the former issue by having Elke controlled by Jochen initially and (after a break) by Leslie. The latter issue was solved by normal hard work in setting up the cameras. Figure 3 shows the arrangement of the séance table for Séances #3 and #4. Figure 4 shows a diagram of the room and table arrangement



Figure 5. Bosch camera view of séance table. Kai (center) has his hands on the shoulders of adjacent sitters. Julia (seated to the right of the light) has her hands on my and Robert's wrists.

for those sittings. Figure 5 shows the clarity obtained with the Bosch camera, and also shows Kai (center) with his hands on the shoulders of adjacent sitters, something he did often during the séance. Figure 6 shows a synchronized split view with the two cameras.

Sitters clockwise from Kai were Leslie, Jochen (they switched positions after the break), Elke, Robert, Julia, and SB. Both Julia and Kai cooperated fully throughout the séance. Julia offered no resistance to being moved away from Kai and seated on the opposite side of the light and CD player, and she insisted throughout on placing her hands during the séance on the hands or arms of her adjacent sitters (Robert and me). Kai likewise remained in contact with me throughout—his right leg touching my left leg (and often his knee pressing firmly onto my leg), and his right hand either next to or atop my left hand, or else on my shoulder. Leslie informed me that Kai did the same (on his left) for her, in the first half of the séance.

The table began to shudder even before we had officially started the séance—simply when we started placing our hands on the table. So it appeared that we were poised for serious action. However, although we got some vigorous and dramatic table tilting (the table even fell over on its side on two occasions), we got no levitations, and the phenomena pretty much dwindled after about 15 min. During some of the table tilting, the table remained quite still in a tilted position—on one occasion for about 10 sec, and on another for about 14 sec before falling over. Video shows how



Figure 6. Synchronized split view from the two cameras during a table tilt. Kai's hands rest on the slightly raised hands of adjacent sitters.



Figure 7. Split view of extreme table tilt. The table remained in this position for 10 sec before moving farther in the same direction and then falling over.



Figure 8. Split view from 8 sec after that in Figure 7. The video makes clear that Robert's right hand is actually off the table (not pushing it).

little contact Kai had with the table on those occasions—see, e.g., Figure 7 and Figure 8. At one point we took a 5-min break, hoping to have a return to dramatic table movements, but the second half of the séance was largely uneventful. Kai repeatedly addressed the “spirit control” as if it was an entity (other than himself) that feared the presence of the camera. Over and over he shouted “the cameras don’t record in the dark.” Of course, one has to wonder if Kai was reminding himself of this.

I think it's fair to say that Kai's willingness to work with cameras in Germany exceeded what he had allowed previously in Austria, where we had to wrestle with him to use even one camera. Here, in Séance #2, he allowed them to be set up in the room, ostensibly ready to use if the spirit control agreed, even though their presence worried him. In Séance #3, Kai arrived seemingly at peace with (and possibly almost enthusiastic about) the idea of having two cameras running all the while. Now the sinister interpretation of this would be that, since the sessions were held in the usual bomb-shelter location rather than a neutral location as in Austria, Kai had ample time to rig the location. On the other hand, we looked over the location very carefully before each séance, and we found no device on Kai or in the basement that could have produced the most dramatic table movements or the drum thwack.

Séance #4, October 8. This was our final séance. Leslie, Robert, and I arrived at 7 p.m., again searched the séance room and surrounding rooms carefully, and again determined that there was no possibility of an accomplice entering the séance room or any apparatus for raising tables present. Then, to give some encouragement to Kai, we added the cabinet back into the séance room, at its usual place next to one of the walls (and searched the cabinet carefully). Robert also added a GoPro4 action camera to the two cameras used in the previous séance. Once everyone appeared, I as usual locked the doors leading to the outside, and kept possession of the removable key leading from the basement to the front door. Jochen, Kai, and Julia appeared in the basement at about 8 p.m. Jochen was agitated by a discouraging talk with Michael Nahm earlier in the day, concerning Jochen's role in the FEG sittings and the possibility of his being a co-conspirator in Kai's fraud. But I urged Jochen to try to hide his feelings, so as not to pollute what we'd hoped would be Kai's positive state of mind. Overall, I'd say that Jochen did this fairly effectively. Still, he was feeling overwhelmed and undoubtedly somewhat distracted by the recent assaults on his character and the threats by the disgruntled blogger to harm him professionally. So I don't think we can rule out that Kai was sensitive enough to pick up on some of this.

It was hard to gauge Kai's state of mind when he arrived. He seemed positive, but subdued and low energy—ostensibly from lack of sleep, but no doubt also from increased anxiety and lack of confidence. He kept singing to himself prior to our sitting around the table (and even as we sat around the table), as though he was making an effort not to think about his worries over obtaining good video. Although the séance had some intriguing moments, it can't be rated as a success, and Kai struck me once again as being relatively low in energy and enthusiasm throughout the proceedings.

Sitters clockwise from Kai: Leslie, Jochen, Elke, Robert, Julia, SB. Apart from one table levitation and a mysterious exploding sound from the table toward the end of our session (more on that below), perhaps the most interesting features of the session were psychodynamic. The session began, as before, with strong movements, but nothing special emerged from them. After a break, when it seemed as if we were likely to have an uneventful séance and the table movements were slight, I suggested, in the spirit of Batcheldorian frivolity (Batcheldor 1984, Isaacs 1984), that we concentrate less on making the table do something dramatic, and simply redirect our attention elsewhere. I suggested whimsically, in particular, that we talk about the weather. Almost immediately, the table responded with more vigorous movements, as if it was glad for the relief from such unrelenting earnestness. And that led Robert, Leslie, and Jochen to join me in making jokes or comments about different kinds of weather, shouting out what kind of weather we should discuss: thunder, lightning, floods, monsoons, hail, etc. While we did that, the table continued to respond strongly. But Kai seemed unable or unwilling to enter into the spirit of the moment (I also think neither Julia or Elke participated in the frivolity; I could hear my neighbor Julia continuing to sing softly to the music). Instead, he kept invoking the spirit control to make the table move. Then, continuing in this frivolous vein, I suggested we tell jokes, and I rattled off a few jokes. Again, the table seemed to like the playful atmosphere. In fact, our one brief levitation, lasting about 3 sec and rising about 1 ft, occurred during this period. But although Kai laughed at the jokes, he never really joined in or supported the effort to be less serious and less focused on success.

Why was that? One plausible hypothesis is that Kai, who is invested both psychologically and financially in his role as a promoter of spiritism, felt and disliked the fact that success under these Batcheldorian conditions of distraction implied that his own role (or that of the spirits) was not as crucial as he'd like to think. And that might have been exacerbated by Robert's chiming in approvingly when I noted that this seemed to confirm Batcheldor's views. Or, perhaps Kai was simply too anxious to succeed. After all, a blank séance would undoubtedly have encouraged some to argue that Kai could only fraudulently produce phenomena under conditions of his own choosing.

Often, during the séance, the table's movements were short and jerky, but strangely forceful, as though the table movements had great energy behind them but not enough or the right kind to break the table free from its location, or even result in the more usual circular movements and banging of legs against the ground. Then, toward the end of the evening, during another period of relative calm from the table, there came an exceptionally

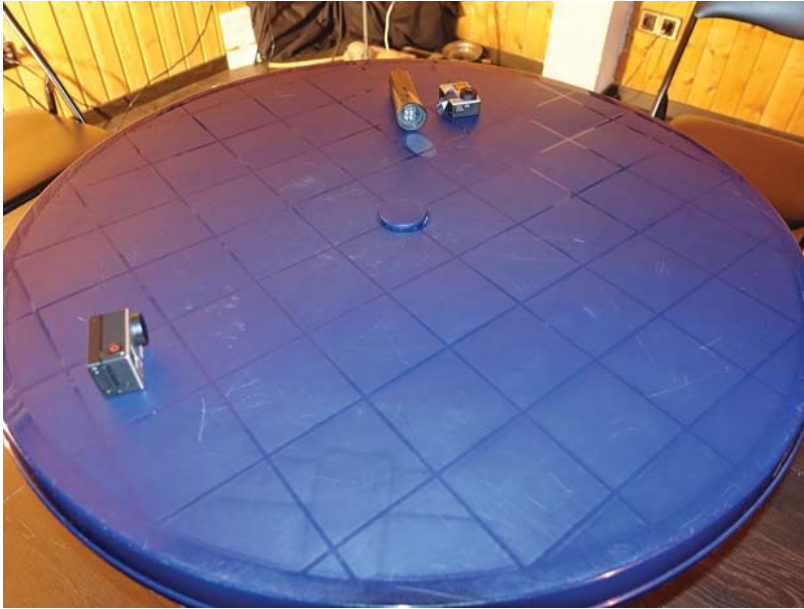


Figure 9. Raised center portion of séance table. Pushed up after the séance for illustration.

sharp and loud sound, and shock wave, seemingly from inside the table, like a kind of explosion but with a very short envelope (i.e. attack and decay). The event apparently startled and frightened us all. I'm quite certain Kai played no role in this. My left leg was touching his right leg (indeed, the two of us were crammed into very close contact to allow for a good camera view of the table), and my left arm was in contact with Kai's right elbow and forearm. Leslie reports similar contact with Kai's left side. Then, as we felt along the table to see what might have happened to it, I noticed that the round center piece (which could be removed for an umbrella to be inserted) had been raised upward (see Figure 9). I tried to push it back down and found that it fit very tightly and could be returned to its original position only with difficulty. I then tried pushing it back up from underneath, and that too required several attempts and some effort. I also confirmed, from photos taken before the séance, that the center piece had been flush with the table top prior to the séance. Our instinctive impression of this event was that the table, which had been moving fitfully and continually all evening, but which had levitated only once, and briefly at that, had built up a great deal of energy that needed to be released somehow. The sound and shock

wave, indeed, seemed to issue directly from within the table, as if some force had exploded there and that the release of energy and vibration within the table pushed the center piece upward.

I should add that Julia's left hand, all the while, was on my right hand, and that Jochen was in contact with Elke. Leslie reports that although she was sitting close to Jochen and had occasional physical contact, she was not controlling him. Now, for those who think (stupidly, in my opinion) that Jochen is a co-conspirator and can't be trusted, I should add that to manually move that center piece upward required a kind of push from below that, even if it could be accomplished quickly in one rapid movement (contrary to what I experienced when trying to move it), it would not have made the kind of sharp, explosive sound that we heard. It would presumably also have required a kind of lucky pinpoint precision of attack that's very difficult (if not impossible) to execute in the dark. Similarly, that explosive and very loud sound would not be produced merely from a forceful thwack on the underside of the table, or a bang administered to the top of the table. Simply forcefully hitting the table abruptly, either from above or below, would have produced a much different kind of sound, a thinner and characteristic timbre of striking a plastic object, not the sharp, explosive blast that we heard. Also, a blow from below would have forced the table upward. But the table was still when the sound occurred, and the only movement of the table during the explosion was its sudden, intense, and brief vibration, not a movement upward. And all this happened within the table top, not in the table's legs, and not in the contact between the table's legs and the laminate floor. In any case, the table legs are covered with a soft material to facilitate sliding around the floor; their hitting the floor simply could not have made a sharp sound.

This event was clearly reminiscent of the famous exploding sound from Freud's bookcase when he and Jung were arguing. Many interpret that latter event as a symbolic (and I'd say psychokinetically mediated—see Braude 2007: Chapter 7) representation of the intense clash between the two men. Similarly, no doubt there was a great deal of tension in the séance room—certainly on Kai's part, however much it might have been veiled by Kai's rather unconvincing and low-energy displays of optimism and enthusiasm. In fact, Kai frequently expressed dissatisfaction and frustration with the spirit control for not providing more impressive phenomena. Jochen, too, was tense over the threats to his professional advancement from the disgruntled blogger, and no doubt all sitters were anxious simply because this was our last chance for success.

One final comment about the exploding sound. It wouldn't be surprising if séance raps exhibit anomalous characteristics similar to those Barrie

Colvin found in connection with poltergeist raps (Colvin 2010). We have not yet had the opportunity to see if we can separate out the exploding sound from the background music and conversation. However, when or if that effort succeeds, Robert and I will pursue the matter.

Discussion

At this point in the history of psi research it's inexcusably naïve to think that the experimenter's state of mind (or personality) is irrelevant to the outcome of an experiment. Experimenters aren't simply passive observers, and experimenter effects of various kinds are well-known in the behavioral sciences generally (see, e.g., my Editorials in *JSE* Volumes 23(3) and 27(2)). My remarks so far on the psychodynamics of this October 2015 series have focused primarily on Kai's and Jochen's states of mind. But the attitudes of Robert, Leslie, and myself were undoubtedly a crucial ingredient as well, and they deserve additional comments.

When Robert, Michael Nahm, and I carried out our 2013 tests with Kai, we were optimistic about the prospects for success and reasonably confident in Kai as a trustworthy collaborator who understood and shared our goals of documenting his phenomena under the best controls possible. But a great deal happened, and happened quickly, once Nahm and I started to prepare our subsequently published *JSE* reports on those séances. First (as noted above), compelling evidence surfaced of Kai's cheating on some previous occasions, and that naturally cast a long shadow over the Austrian investigations. Then, because Kai responded badly to these revelations and the doubts that arose in their wake, distrust and hostility among various formerly cordial collaborators became a more prominent part of the emotional background.

It was some time before things calmed down to a point where it was feasible to discuss holding further tests. Even so, it was no longer possible to recapture the earlier state of optimism and enthusiasm. And although Kai realized that the purpose of the proposed new investigation was to demonstrate more clearly than before that at least some of his phenomena were indisputably genuine, negotiations for arranging the new tests were often tense and required revisiting many of the painful exchanges, charges, and counter-charges of the previous months. Robert, Leslie, and I spent a great deal of time trying to assure Kai that we were not out to sabotage him à la Mulacz, denounce him in the way he felt Nahm had been doing, or simply put him in a position where he could only look worse for trying to cooperate with us. So as the time approached for our visit to Hanau, I think it's fair to say that Robert and I were somewhat fatigued from the effort of trying to make Kai feel more secure and positive, and that we

were not very positive ourselves about the prospects of improving on the documentation achieved in the 2013 Austrian sessions. We (and also Leslie) were genuine in our expressions of confidence that we'd get some good table levitations—and indeed, we got some very interesting and impressive ones. But we were also candid with Kai concerning our uncertainty—which Kai shared—about improving on the Austrian table levitation video. We all knew that the psychological environment for the occasion was badly polluted—if only because of the attacks on Kai and Jochen, never mind how the investigators themselves felt about it. That's why we took pains to assure Kai that failure to improve on our earlier results wouldn't necessarily look bad for him and require publishing a critical report.

So even though my team expected to have tables levitate for us, the fact remains that we were not nearly as excited and optimistic as my Austrian team had been two years earlier. Indeed, thanks to the convincing revelations about Kai's cheating in séances not supervised by me, our confidence in Kai and his mediumship had inevitably been eroded, and we were less inclined to put a positive or sympathetic spin on actions or statements that were at least superficially suspicious (e.g., Kai's explanation of why he could hold a séance only every other day). Undoubtedly we wondered whether we were wasting our time and money on this investigation.

Now, Kai is both very intelligent and also very sensitive. Of course, he was aware of many of these feelings, and of course that residue of mutual under-the-surface mistrust, pessimism, and lack of enthusiasm would likely have a stifling effect on the proceedings. But then we must concede that the somewhat disappointing results of this series of séances needn't reflect negatively on Kai. We were investigating the phenomena in his repertoire that are most likely to be genuine (and which I continue to believe are genuine). But there's no reason to think that Kai can produce them easily no matter how psychologically repressive the situation might be. And it's doubtful—or at least an open question—whether we can ever return to something close to the state of grace needed to obtain further convincing documentation of Kai's phenomena generally or table levitations specifically.

Conclusion

Although we did not meet our original goal of improving on the video documentation from Austria, we obtained phenomena that, under the conditions of the séance, remain difficult to dismiss. These include the “swimming” levitated table, the ringing of the bell behind and above my head while Julia's and Kai's locations (determined by touch and voice) were clearly far away, the loud bang on the drum (out of Kai's reach), and the explosion from the table in the final séance. These events, in my view,

reinforce the conclusion reached in my 2014 report—namely, that despite the cloud of suspicion generated by confirmed cheating in the past, some of Kai's phenomena seem quite clearly to be genuine.

I also believe it should be noted again how cooperative (even if unhappy) Kai was about some of the test conditions, how anxious he was over success, and how sensitive he was to the various stresses both he and Jochen felt from recent attacks. It's also worth reiterating that in both our 2013 Austrian sessions and the recent séances in Hanau, Kai has been willing to conduct table séances under conditions he dislikes, including a few that even some of the least controversial mediums agreed were probably unfavorable to the phenomena. After all, there are still many unknowns about what makes mediums tick and why or when various situations suppress or facilitate the phenomena. Furthermore, these sessions reinforce what most veteran investigators of mediums know already—namely, that navigating the psychodynamics of mediumistic investigations is a complex and often tricky business, and that taking such matters seriously is the only way to advance beyond mere proof of the phenomena to an understanding of why they occur (or fail to occur) and why they take certain forms rather than others. They may also lend support to the view that the medium's beliefs, or general state of mind—and also that of the sitters—may be more of an impediment to success than the tightness of the controls.

Appendix: Kai and the D'Lite-Type Device

What follows may be more detail than some readers care to know. But I believe it's important to lay out certain matters for the record. There are two primary reasons for this. The first is to clarify and affirm, as much as possible, Jochen's integrity and credibility as a member of my investigative team. Because Jochen had revealed to only a few people what he knew about Kai's cheating in Koblenz (Germany), some felt that he might have been unduly influenced by Kai to remain silent on that matter. And if that was the case, then those individuals might also wonder whether Jochen was either a party to or at least unjustifiably silent about other instances of fraud. The second reason is to help clarify whether Kai merits further attention from serious investigators, even if some, or many, of his phenomena are genuine. These two objectives can be addressed together.

First, I should remind readers of what I reported in my 2014 paper on the FEG. When I initially asked Jochen directly whether Kai had cheated during the Koblenz séances, Jochen struggled to respond, clearly unsure what to say. However, it was easy to figure out what was behind Jochen's uncharacteristic struggle to produce a simple sentence. I inferred that Kai had confessed to Jochen while also making it clear somehow to him that this

revelation was to be kept confidential, thereby placing Jochen in a morally untenable position about what to say to others (including friends, like me) about what happened in Koblenz. Then, when I confronted Kai over Skype video about this, Kai for the first time in our many conversations couldn't look me in the eye (so to speak). I told Kai why, on the basis of my talk with Jochen, I now knew he'd cheated. Now if Kai had felt my inference was unwarranted, he could easily have challenged it; indeed, he should have done so. But instead, he hemmed and hawed, without directly admitting guilt, apologizing repeatedly and mentioning several times how there's a difference between public demonstrations and scientific investigations. While this was not a direct confession, I considered it then (and still do) to be functionally equivalent to one—a clear tacit confession.

During this time, I understood and sympathized with Jochen's own struggle about whether, how, or when to publicly answer questions about this incident. For one thing, although Jochen's role had been initially and primarily that of an investigator, he believed that over the years Kai had become a friend. And although he was deeply disturbed by his discovery that Kai had cheated on at least the occasion in question, he still felt the tug of protecting a confidence revealed by a presumed friend. He also didn't want to risk losing contact with a person whom he still felt produced at least some genuine phenomena worthy of study (especially those associated with table séances). In his mind, he had several conflicting prima facie obligations, one of which was to science—namely, to study phenomena that promised to reveal important aspects of the working of Nature. After all, Jochen is a scientist himself, and an exceptionally well-informed student of the mediumistic literature. He knows very thoroughly the history of so-called “mixed mediumship,” and he understands (as, e.g., in the case of Eusapia Palladino), how convincing evidence of large-scale PK phenomena can be obtained under good conditions even with mediums who have definitely tried cheating on other occasions.

I understood Jochen's dilemma; in fact, I was in a somewhat similar position myself. Once Jochen told me the whole story, I could have been more outspoken, not just about Kai's cheating, but about the callous way he was willing to sacrifice Jochen's reputation to protect his own.⁴ But I too felt that it was premature to abandon study of Kai, and I too didn't feel it was necessary to act at that point. In particular, some of the object movements occurring at a distance from Kai while I was controlling all his limbs I believe continue to challenge the skeptic. Similarly, in my view, some of the results I'd obtained in Austria with Kai had not been explained away satisfactorily (as I discussed in detail in my 2014 report). So I felt it was still worth trying to improve on the quality of documentation secured in

the Austrian séances (at least to give it one last shot). That's precisely why I returned to Hanau (Germany) to work with Kai again.

So for the record, and for the sake of Jochen's reputation, it needs to be made clear that soon after Nahm's and my *JSE* papers appeared, Jochen did report what he knew to various investigators, including both Nahm and me. Although he was initially in an understandable quandary about how to handle Kai's confession, Jochen was neither complicit in the fraud nor determined to keep the matter a secret. He also sent Nahm his sequences of suspicious photos from the Koblenz séances, which Nahm then (and with Jochen's permission) forwarded to me. However, because he didn't want to be cut off from Kai's inner circle and still hoped to observe and investigate the séance phenomena he still believed might be genuine, Jochen withheld his discovery of Kai's cheating from some of Kai's key sponsors and advocates. I firmly believe that Jochen's choice here is defensible, even if ultimately counterproductive. Moreover, he felt that since I had explained convincingly in my 2014 report why I knew Kai had used the D'Lite-type device, the truth was out there (at least for the world at large, if not for Kai's uncritical believers). So although Jochen planned eventually to go on record publicly about what he knew, there was no present urgency to do anything more. The only question for him was a matter of timing: when to finally brace himself for the predictable backlash from Kai for providing explicit testimony.

But it's time for that testimony to see the light of day. Because I had wanted to be absolutely certain about the way the relevant events unfolded, on October 22, 2015, Jochen sent me the following statement describing what occurred.

The first time I saw the flashing red spirit light phenomenon I felt uncomfortable with it and immediately considered it to be suspicious. This "spirit light" looked very different from those I had witnessed during several previous séances around the table, rather than at cabinet sittings. At Kai's table séances, the shape, brightness and local appearance of the lights vary considerably, and they also seem to be both elusive and (perhaps most important) outside Kai's radius of action. In comparison to these, the "spirit light" in Koblenz with its red flashing appearance looked like an electrically driven one controlled by Kai within the cabinet. My skeptical concerns were further substantiated after I took a series of photos of Kai and the moving red light.

So I decided to look into Kai's travel bag after a séance in Koblenz. I expected to find a device in case the "spirit light" was mechanically produced. And indeed I found a boxed device with a light-emitting diode at the end of a very thin wire attached to a fake thumb. I was totally shocked and rushed out of Kai's room. The next day I searched the Internet and found a magi-

cian's prop, which is commercially available for everyone and which looks very similar to the gimmick I detected. It is called the D'Lite Flight (<https://www.youtube.com/watch?v=tZfnjSbbU2g>).

Unfortunately I didn't take a photo of the device in the travel bag. But I confronted Kai with what I had discovered, and he denied ever using such a trick.

Nevertheless, I tried to find out myself whether this gimmick could explain the suspicious-looking flashing red-light effect which I saw at the end of the cabinet séance. As I wanted to find out how it could have been naturally done, I looked for the wire, the "thumb," or the LED light during later séances, but I could not detect anything. The red light reappeared only once or twice again (as far as I remember) in my presence, this time under very poor conditions of observation. Thus I was not able to figure out whether and how Kai might have fraudulently produced it. I also took a closer look at the series of photos I had taken, but I didn't see anything clearly demonstrating the use of the prop, like the wire, despite the fact that the red-light effect still looked very suspicious. I realize in retrospect that it was my mistake that I didn't notice Kai's thumb movements and also that I didn't enhance the photo series. Fortunately, I later sent the series to Michael Nahm, who instantly noticed in the unedited photo series how the movement of the light corresponded to the movement of Kai's thumb. [This was revealed even more clearly after Nahm enhanced the photos—SB.]

After Nahm showed me that Kai's thumb was indeed moving on these photo series in accordance with the movements of the red light, I confronted Kai again, asking him whether he used the D'Lite-type device and insisting that he tell me the truth because of compelling evidence of fraud. This time he admitted he had indeed used the device I found in his travel bag, and he said several times that he'd made a mistake in doing so. He also told me that he'd hidden the device on the shelves behind the cabinet, which he could reach from within its curtains. He apologized to me for having done this, and I felt pressured by him not to mention it to anyone.

While the present report was in preparation, I felt that the right thing to do would be to inform Kai about the impending appearance of Jochen's statement. Jochen and I had no wish to harm Kai personally, and indeed we both not only forgave him but also still believed that some of his phenomena merited further study. My goal in informing Kai was to give him fair warning, and to encourage him to do the right thing, demonstrate some integrity, admit his mistake, and apologize. I told him that in the past his efforts to try to defend himself against charges of fraud had only made him look less credible. I suggested instead that he follow the lead of many other public figures who've been caught in some kind of scandal by displaying some openness and contrition, and thereby presenting themselves sympathetically to the world. I reminded him that mediums (like all of us) are human and have frailties, fears, lapses of judgment, and other

weaknesses, and I suggested that his own errors could be forgiven if only he'd admit them, accept responsibility for his mistakes, and pledge to do better in the future. After all, and in sharp contrast to Kai, Eusapia Palladino candidly admitted that she'd cheat if given the chance, and investigators simply went with it and tried not to give her the chance! Of course, Eusapia (unlike Kai) didn't adopt the posture of a guru and proclaim herself to be a messenger of great spiritistic truths. Perhaps that's why Kai has not sought forgiveness or redemption. Despite many opportunities to come clean, he's consistently and dishonestly proclaimed his innocence.

Unfortunately, after telling me—in very carefully chosen words—that he simply couldn't admit he'd cheated (which, I remind you, is not at all the same thing as denying that he cheated), Kai contacted Jochen, and from what Jochen later told me about that conversation, I gathered that Kai had badgered and bullied—or otherwise tried to manipulate—him to retract his statement, in part by making him feel guilty about destroying his long friendly relationship with Kai and Kai's family. Apparently in his conversation with Jochen, and certainly during my Skype session with Kai in which I told him about Jochen's impending statement in the *JSE*, Kai was clearly concerned solely with saving his own hide. He expressed no concern for the way Jochen had suffered from keeping largely silent about the D'Lite-type device. Reprehensibly, Kai even told me that Jochen had no legitimate reason to feel any pressure from the attacks on his character or professional life.

The emotional strain from all this was temporarily too much for Jochen to bear, and he said that he needed to cut himself off from all things FEG-related. So from late October 2015 until February 2016 I had no contact at all with Jochen. I can report now that Jochen has voluntarily broken the silence, to let me know that he understands and accepts my obligation to present the facts he had previously revealed only to a select few. I should add that I'm also happy to do what I can to set the record straight about Jochen and to help remove whatever cloud of suspicion might hang over him in the minds of some who follow the adventures of the FEG.

As for Kai, I suppose some will wonder whether he's simply a good medium who will cheat or has cheated on occasion (either out of necessity or convenience), or whether his character is more thoroughly corrupt. If the former, then like Eusapia, Kai should be manageable if case investigators want to study the FEG phenomena further. But what about the latter option? Granted, because of Kai's disregard of, and apparent manipulation and bullying of Jochen, some may want to impugn Kai's character generally. But of course there's no reason to think that good psychics can't have character flaws, or (like most people) behave badly and strike back when

feeling threatened. My own view is that no matter what one's opinion may be of Kai's personality or behavior, the fact remains that he can produce impressive phenomena that are often difficult to attribute to fraud, and he's shown that he can be cooperative, at least so long as he feels it's in his interest. Accordingly, I'm not prepared to recommend a hands-off policy. Indeed, I'd gladly work with him again.⁵ But the psychological background and conditions of observation would have to be considerably better than they were this time in Hanau. And that, for now at least, seems quite unlikely.⁶

Notes

- ¹ Nahm, however, felt certain that nearly all Kai's phenomena had been faked.
- ² Of course, I can't say that Julia had no access to an LED device. But I make no claims for the authenticity of this or any of the other observed lights. I merely note that they were observed, and neither Kai nor Julia seemed particularly concerned about them either. They certainly made no effort to call our attention to them. I can add that throughout the series of séances, Julia's behavior seemed exemplary, especially during the last two sittings where her neighbors remained in bodily contact with her while the phenomena occurred.
- ³ And even admitted it (Mulacz 2015).
- ⁴ One could equally criticize Kai's behavior toward Michael Nahm, who (on December 18, 2014) informed the members of Robin Foy's forum "Physical Mediumship for You" (PM4U) about Kai's confession to Jochen. He did this to counter Kai's repeated assertions on his blog and elsewhere that the red "spirit light" (i.e. produced by the D'Lite-type device) was genuine and that Nahm's claims to the contrary were false. Kai's consistent tactic has been to accuse Nahm of maliciously spreading lies, and shortly after Nahm posted his message Foy uncritically (and, indeed, quite foolishly and without investigating the matter further himself) banned Nahm from PM4U. See Nahm (2016) in this issue.
- ⁵ I realize, of course, that Kai's enthusiasm for working again with me may be, let's say, more muted, now that he finds it convenient to portray me as someone who wants to ruin his career. But as Kai knows, I've been one of his staunchest defenders in the face of serious and sometimes well-founded charges against him. For example, I wrote a stinging rebuke of Mulacz's irrelevant and irresponsible article on the FEG (Mulacz 2015). See my letter in *Paranormal Review* 75(Summer 2015:36) in 2015. In fact, as I've made quite clear in everything I've written about Kai since the revelations about his cheating came to light, I don't consider the fact of Kai's having cheated earlier, in séances I didn't supervise, to be of

much significance. True, it forces us to focus more on the extent of Kai's cheating, and that remains a valid concern. Since Kai learned and used at least one magic trick, we have no choice but to consider how many others he might have in his repertoire (and use with impunity in darkness). But of course, any competent investigator of physical mediums needs to focus on the possibility of fraud anyway, if only to deflect the inevitable and distracting glib criticisms from those who want simply to debunk the phenomena no matter what. At any rate, in addition to the intriguing events reported in this paper, I continue to maintain that our Austrian sessions in 2013 produced some results that have not been satisfactorily explained away, and which are not tarnished by what Kai did with the D'Lite-type device. That's been my position all along, and I still await an adequate normal explanation of Kai's object movements across the room when he's under competent 4-limb control (e.g., as described in my previous *JSE* report, which also included some control of Julia).

- ⁶ This research was supported by a generous grant from the Parapsychological Association's Gilbert Roller fund. I'm grateful also to Robert Narholz, Leslie Kean, Loyd Auerbach, Rosemarie Pilkington, and Michael Nahm for helpful comments on ancestors of this report.

References Cited

- Batcheldor, K. J. (1984). Contributions to the Theory of PK Induction from sitter-group work. *Journal of the American Society for Psychical Research*, 78:105–122.
- Braude, S. E. (2007). *The Gold Leaf Lady and Other Parapsychological Investigations*. Chicago: University of Chicago Press.
- Braude, S. E. (2014). Investigations of the Felix Experimental Group: 2010–2013. *Journal of Scientific Exploration*, 28(2):285–343.
- Colvin, B. G. (2010). The acoustic properties of unexplained rapping sounds. *Journal of the Society for Psychical Research*, 73(2):65–93.
- Isaacs, J. (1984). The Batcheldor approach: Some strengths and weaknesses. *Journal of the American Society for Psychical Research*, 78:123–132.
- Kean, L. (2010). *UFOs: Generals, Pilots, and Government Officials Go On the Record*. New York: Three Rivers Press.
- Mulacz, P. (2015). Fall of the House of Felix? *Paranormal Review*, 74(Spring):16–22.
- Nahm, M. (2014). The development and phenomena of a circle for physical mediumship. *Journal of Scientific Exploration*, 28(1):229–283.
- Nahm, M. (2015). Promissory mediumship. *Paranormal Review*, 74(Spring):15.
- Nahm, M. (2016). Further comments about Kai Mügge's alleged mediumship and recent developments. *Journal of Scientific Exploration*, 30(1):56–62.

COMMENTARY

Further Comments about Kai Mügge's Alleged Mediumship and Recent Developments

MICHAEL NAHM

michaelnahm@web.de

Submitted January 6, 2016; Accepted January 6, 2016; Published March 15, 2016

Abstract—In 2014, I published an article on the Felix Experimental Group, its medium Kai Mügge (KM), and my involvement in following the development of the phenomena reported around KM (Nahm 2014). In that article, I showed convincingly (in my opinion) that KM had cheated in the past, in particular with regard to producing a red “spirit” light with a magician’s LED device, and with regard to producing (self-luminous) ectoplasm with the help of Halloween spider web while pretending to be in a trance. Recent developments and publications render it recommendable to summarize a few aspects of the aftermath of that previous publication.

Comment on Recent Publications and the Role of the FEG’s Former Circle Leader

Accusing a purported medium explicitly of producing fraudulent phenomena is a grave act, and it is only tolerable if it is supported 100% by facts. With regard to the repeated and purposeful use of the aforementioned red LED, KM’s fraud is established by 109 photographs that show how he used it during séances, by the discovery of such an LED device in KM’s travel bag by his former Circle Leader Jochen Soederling (pseudonym, JS), and by KM’s admission to JS of having used this device. Consequently, in response to KM’s recurrent public assertions that the conclusions presented in my report (Nahm 2014) were naively false and perfidious, I informed the members of Robin Foy’s forum “Physical Mediumship for You” (PM4U) on December 18, 2014, that KM had confessed to having used an LED device in a telephone conversation on April 2, 2014, with his former Circle Leader, and that JS informed not only me about it (compare also Nahm 2014:266, Braude 2014:331, Braude 2016 in this issue). Still, KM aggressively denied that this conversation and his confession had ever taken place, accused me again of spreading lies, and, curiously, he announced that his Circle Leader will defend the phenomena of his mediumship in the not-too-distant future.¹

Early in 2015, Leo Ruickbie, the Editor of the *Paranormal Review*, asked me to contribute an article about KM for that magazine. He stated that there were still many rumors about KM that needed to be countered by advancing a balanced scientific view on the matter. After hesitating for quite some time, not wanting to become engaged in this cumbrous debate again, a number of reasons convinced me eventually that it might still be worthwhile to contribute a short comment on what I call “Promissory Mediumship” (in reference to Karl Popper’s concept of “promissory materialism”). A key characteristic of promissory mediums is to make promises that never come true. Promissory mediums aim at keeping the interest in their mediumship alive by announcing developments of phenomena and control methods that are ultimately never kept—or are kept in only such a way that they still remain unsatisfying. This behavior was exemplified by KM’s repeated promise that his former Circle Leader JS will eventually vouch for the genuineness of KM’s phenomena. In fact, JS has stressed on numerous occasions in personal conversations via emails and telephone conversations, with me and with several other persons, that he is very disappointed because of KM’s cheating and thus not willing to defend KM in public. Moreover, JS stressed that he has hardly been in contact anymore with KM for many months, and that he was only interested in arranging one more followup investigation with Stephen Braude. Drawing from my many conversations with JS, I explicitly addressed him as the “former” Circle Leader in my article, and argued that those who still await a defense of KM’s mediumship from him will have a long wait ahead of them. Prior to its publication, I sent the article draft to JS for his inspection. He didn’t oppose anything I had written, and the article was duly published in the *Paranormal Review*, Issue 74 (Nahm 2015).

Yet, when I read Ruickbie’s second article about KM in the very next issue of the *Paranormal Review*, Issue 75 (Ruickbie 2015a), I was struck with utter astonishment. In this article, Ruickbie described how “Circle Leader” JS was present on both occasions when he visited the Circle, as if nothing had happened, seemingly being still in good contact with KM. Moreover, JS talked with Ruickbie at length on both occasions, describing numerous phenomena, and he vouched for their genuineness—thus, openly defending the mediumship of KM—just as the latter had announced he would several times on PM4U and elsewhere. As a result, Ruickbie’s article appeared to prove KM right, and to disprove the core argument of my article on Promissory Mediumship in the previous issue of the *Paranormal Review*. Attentive readers might even have suspected that I had purposefully misled them with fictitious claims to debunk KM, and that consequently, other parts of my writings are not entirely credible, to say the least.

Of course, I immediately contacted Ruickbie and JS, inquiring about the reasons for their sudden and unexpected change in conduct. JS readily apologized and offered to write a declaration for me in which he would try to set the record straight again. But, because of the events described by Braude in this issue, I am not in contact with JS anymore. Hence, I take the freedom to publish the basic content of the declaration that JS intended to write and publicize for me:

- JS had not read my article on Promissory Mediumship properly, and thus he didn't put its content in relation to the article to be written by Ruickbie several weeks later.
- JS hasn't considered himself to be the FEG Circle Leader for a long time.
- JS had indeed hardly been in contact with Kai for many months before joining the two visits of Ruickbie in Hanau. He joined these visits to show renewed support to KM, because his aim was to create the best and most psi-conductive atmosphere for the upcoming joint test sittings for table phenomena with Stephen Braude (see Braude 2016, this issue).
- JS's affirmative appraisal regarding the genuineness of KM's phenomena discussed with Ruickbie was only valid for phenomena occurring at table sittings, and he told Ruickbie so. In fact, knowing that KM has cheated on several occasions during cabinet sittings, JS has strong reservations regarding the potential genuineness of the phenomena produced in trance sittings. However, according to JS, Ruickbie asked him to report only about positive experiences, which was in line with JS's own approach of creating a supportive mood for the upcoming test sittings.

After all, however, Ruickbie's article (2015a) had quite an adverse effect. JS's unexpected public support of KM fueled long-standing suspicions that he was an accomplice of KM, which resulted in a considerable deterioration of the atmosphere during the test sittings (Braude 2016, this issue).

Comment on Myth-Making Regarding KM's Phenomena

Moreover, both that article by Ruickbie as well as Ruickbie's previous article in Issue 75 of the *Paranormal Review*, in which he offered KM the opportunity to tell his "story" (Ruickbie 2015b), contributed to spreading further rumors about KM, some of which, at least, are definitively wrong. For example, he wrote how JS told him "about lights that have been seen outside the séance room at previous sittings. One light was seen to leave the

room and go into the antechamber and settle on some blank sheets of paper. Afterward a face was found on the paper as though burnt into it" (Ruickbie 2015a:12). This description of the occurrence in question is false in two important respects, and JS has explicitly admitted this to me in personal communication.

First, the light was not seen outside the séance room, much less was it seen to settle on blank paper sheets. According to the protocol of the sitting and to personal discussions about this occurrence I had with Circle members including KM when I started visiting them in Hanau in 2008, the door of the séance room was closed as it always was during sittings. The supposed spirit light simply vanished inside the room in the vicinity of the closed door. Only later, when the face on the paper in the anteroom was discovered, did the sitters *infer* that the light might have passed through the door, and might have left the face on the paper.

Second, the face was not "burnt" into the paper. Rather, it was a quite normal coin rubbing from a former German 2-DM coin, being drawn with a pencil. It seemed to show the face of Kurt Schumacher, a former German politician. This was stated in the "small print" of the German séance protocol from February 28, 2008, which was included as a kind of attachment on KM's blog posting from March 1, 2008, along with a photograph of this pencil sketch. In the meantime, I superposed this coin rubbing on an image of Kurt Schumacher's head on a 2-DM coin in Adobe Photoshop CS2, blending them with various degrees of opacity. Even the most minute details of both faces such as filigree skin folds on the forehead match perfectly, so that the identity and the origin of this face must be regarded as established.

Yet, KM did not inform his target group for the blog, namely English-speaking readers around the world, about the potential identity of this face, let alone that it was a coin rubbing. And because the "spirit light" spared the German writing around Schumacher's head as well as the edges of the coin, surrounding the image instead with pencil-drawn sinuous lines, it was difficult to tell that the face originated from a coin for anybody who didn't read the enlarged version of the German séance protocol after clicking on it. Accordingly, in the main English text of KM's blog posting, the face was labeled a "paranormally produced miniature pencil-painting," presumably produced with the pencil that was placed in the prepared corner for direct writings in the anteroom. After its appearance, this "pencil painting" of Schumacher's head was regarded as so important that it even served as the FEG logo on séance protocols for some time. In another blog posting from February 24, 2010, KM showed the coin rubbing of Schumacher's face again and described it as a paranormal "pencil-scribbling of an unknown man's face." And in 2015, it has finally turned into a face of supposedly

unknown origin that was “burnt” into a paper by a spirit light, as witnessed by sitters!

This episode illustrates how sensational rumors or myths that are often very difficult to erase again are created by carelessly embellishing much more unspectacular basic facts. It thus highlights the obvious importance of reporting phenomena properly—especially in such a difficult and fraud-loaded field of study as physical mediumship.

Still, different people might interpret the Schumacher episode differently. For me, at least, it is one more sign that the development of KM’s alleged mediumship contained suspicious elements from the start. The blog posting about the supposed “paranormally produced miniature pencil-painting” from March 1, 2008, was the third posting on KM’s blog. Looking back, I wonder why a supposedly genuine spirit light should have left a pencil-made coin rubbing of Kurt Schumacher’s head while sparing the writing and the edges of the coin, surrounding it instead with nicely oscillating and powerfully drawn sinuous lines that look rather human-made. Moreover, I wonder why KM didn’t inform the English-speaking world at large in 2008 and thereafter about the potential identity of this peculiar face, and about it being most likely a simple coin rubbing.

Comment on Some of KM’s “Ectoplasm”

I have already argued in my previous paper (Nahm 2014) that the proven (and now also admitted) use of a red LED by KM, presented as a highlight of some of his séances between 2011 and 2013, and allegedly representing a special “condensed” form of ectoplasm, constitutes strong evidence that other ectoplasm phenomena were faked as well. This appraisal is further supported by a séance report of a sitting held on February 18, 2011, in Koblenz, which was sent to me by Hermann Haushahn some months ago, and which was previously unknown to me. In addition to the “different private séances” once mentioned on KM’s blog, this report thus constitutes the sixth documented purposeful use of the red LED during public séances of KM. It was written by an external guest sitter for the newsletter Hermann circulated at that time to about 500 readers.

According to this report, KM displayed the red LED and the ectoplasm two times in alternation at this sitting. After the first display of the red LED and the “normal” ectoplasm, KM’s alleged trance control personality “Hans Bender” asked the sitters if they would like to see the red “spirit” light again, which they joyfully affirmed. Indeed, KM showed the red LED again, and this was followed by another display of “normal” ectoplasm. Kai’s smuggling of this LED device into the séance room, as well as its deployment and its subsequent re-concealing, were undoubtedly performed

in a conscious state. But since that step in his performance was a component of a grander plan that included showing “normal” ectoplasm in alternation with this LED, I find it impossible to avoid the conclusion that both KM’s trance and “normal” ectoplasm were consciously faked during these occurrences as well. This in turn suggests that KM must be very skilled in producing fake “normal” ectoplasm.

In fact, I know by now of five other sitters apart from myself (see Nahm 2014) who have on at least eight different occasions seen a fine thread that led upward toward the cabinet roof from rising ectoplasmic hands or columns. Several sitters also noted how KM’s right hand especially seemed to be hidden at the back of the cabinet when ectoplasm structures rose, but not during other ectoplasm displays. This is supported by numerous photographs from KM’s blog, many of which are deleted at present. Much more could be said about the alleged ectoplasm and its context. But because I don’t own copyrights to the photos that would illustrate my arguments, I only add a comment here about a peculiar video clip that was discussed before.

Braude (2014) has described how KM sent him a video clip that KM allegedly produced back in 2012, and in which KM had allegedly (and quite erroneously) established that Halloween cobweb was a completely different material compared to some of his ectoplasm (Braude 2014:329ff, Nahm 2014:271ff). This bizarre clip was recorded in KM’s packed kitchen and shows only him alone.²

Yet, not even his then Circle Leader JS knew about the production of a video clip about Halloween cobweb for KM’s blog in 2012, let alone about suspicions that KM might have used such cobweb material around that time (see also Braude 2014:331). Rather, as JS has repeatedly affirmed to me in person (thus mirroring my own experience with KM), KM fervently denied to him ever having heard of Halloween cobweb when JS first asked him about it in 2014. Only after KM learned that we had copies of his transaction documents of his voluminous cobweb order via Ebay, did he suddenly backpedal and inform Braude about this video clip.

Notes

¹ My posting on PM4U and KM’s reply are preserved on web.archive.org; scroll down at <https://web.archive.org/web/20150203175224/http://www.spiritualismlink.com/t2208p375-investigation-into-the-mediumship-of-kai-muegge>

² As described in my paper (Nahm 2014:272), the cobweb brand KM showed in this video was different from the cobweb brand he ordered in October 2013. Hence, it might be of interest that KM placed an order

at another German Halloween online shop that sells the precise cobweb brand he showed in the video clip. This order dates from August 29, 2013. Still, because KM deactivated the function that would allow other customers to see which item he had bought, one can only speculate if he indeed ordered the Halloween cobweb bag he showed in the video on this occasion, or a different Halloween gimmick.

References Cited

- Braude, S. E. (2014). Investigations of the Felix Experimental Group: 2010–2013. *Journal of Scientific Exploration*, 28:285–343.
- Braude, S. E. (2016). Followup investigation of the Felix Circle. *Journal of Scientific Exploration*, 30(1):27–55.
- Nahm, M. (2014). The development and the phenomena of a circle for physical mediumship. *Journal of Scientific Exploration*, 28:229–283.
- Nahm, M. (2015). Promissory mediumship. *Paranormal Review*, 74:15.
- Ruickbie, L. (2015a). The séance. Lights, rappings, levitations and apports with Kai Mügge. *Paranormal Review*, 75:12–15.
- Ruickbie, L. (2015b). The medium. An interview with physical medium Kai Mügge. *Paranormal Review*, 75:6–11.

HISTORICAL PERSPECTIVE

On Psychic Forces and Doubles: The Case of Albert de Rochas

CARLOS S. ALVARADO

Parapsychology Foundation, New York, NY, USA
carlos@theazire.org

Submitted December 2, 2015; Accepted January 19, 2016; Published March 15, 2016

Abstract—In Nineteenth and early Twentieth Centuries’ psychical research literature, there were many speculations to explain physical mediumship consisting of the projection of nervous and vital forces from the body. The purpose of this paper is to present an example of these ideas and a translation of part of an article published by Albert de Rochas in 1897 in the *Annales des Sciences Psychiques*. The article was devoted to séances with Eusapia Palladino, and de Rochas suggested the projection of forces to explain telekinesis and materializations, a concept also involving the idea of a fluidic double. The ideas are presented in the context of previous speculations, and of the life and work of its author. The point of this article is not to defend or criticize the validity of the concept, but to contribute to the history of these ideas by rescuing de Rochas from oblivion, which in turn also shows French contributions to Nineteenth-Century psychical research.

Keywords: Albert de Rochas—animal magnetism—psychic force—doubles—exteriorization of sensibility

Introduction

In a book German physician Albert von Schrenck-Notzing published in 1920 about physical mediumship, he referred to “an emanation or projection of vital energies beyond the limits of the human organism” (Schrenck-Notzing 1920:180). This idea was related to concepts of vital forces coming from antiquity (Amadou 1953) and to the movement of mesmerism. Starting in the late Eighteenth Century, many individuals representing such movement popularized the concept of animal magnetism. Franz Anton Mesmer (1779) referred to it as a universal fluid capable of acting at a distance and of affecting inorganic and organic matter. Regarding the latter, Baron Jean du Potet de Sennevoy wrote:

The nervous, active atmosphere of the magnetizer . . . enters in rapport with the passive nervous atmosphere of the magnetized person, and augments the latter to the point that, in some cases, it seems that there is a real saturation of the nervous system. (Du Potet 1868:316; this and other translations are mine)¹

Such magnetic phenomena, which included a variety of physiological and psychological effects, informed an interesting model developed during the Nineteenth Century and later to explain psychic manifestations, which is the topic of this paper. The basic concept was that what was variously referred to as “magnetic,” “vital,” “fluidic,” and “nervous” bodily forces, could cause phenomena such as thought-transference, movement of objects, raps, luminous effects, and materializations when projected from the human body.² Interestingly, such ideas of human radiations were a particular interest of various French researchers, a tradition that began with mesmerism and continued in later years. This was exemplified by many publications, among them overviews such as *La Force Psychique* (Bonnamy 1908), *Magnétisme Vital* (Gasc-Desfossés 1897), *Pour Photographier les Rayons Humaines* (Girod 1912), and *Les Radiations Humaines* (Montandon 1927). The purpose of this paper is to present a translation of an account of one of these ideas, postulated by Albert de Rochas in the late Nineteenth Century, which was actually a late formulation of concepts of emanations from the body to account for physical phenomena, and part of the neo-mesmeric movement that continued the old mesmeric tradition.³ De Rochas was one of several French neo-mesmerists who continued writing about magnetism during the late Nineteenth Century and later, among them Émile Boirac (1908), Hippolyte Baraduc (1896), Alexandre Baréty (1887), and Hector Durville (1895–1896).

The translation and presentation of an Excerpt from one of de Rochas’ articles is of interest today for various reasons. First, it is a reminder of a conceptual tradition of vital, psychic, and nervous forces (Alvarado 2006, 2008) that, while still present today, are not considered by many current workers in parapsychology who emphasize ideas of nonphysicality (e.g., Kelly 2015, Tart 2009). Second, it is an opportunity to present to modern readers, many of whom presumably are unacquainted with the topic, a fragment of French psychical research theorization from the Nineteenth Century. Third, I briefly present an overview of the work of de Rochas, a figure who is not frequently discussed today.

Magnetic, Nervous, and Fluidic Forces, and Doubles

As seen in the literature of mesmerism and the work of Reichenbach (1849/1851), the conceptual ground for de Rochas’ theorization had

actually been prepared by others before him. Later ideas of emanations from the human body included those of many writers who proposed various concepts to explain the phenomena of Spiritualism, particularly the physical ones. A few early examples from the United States were B. W. Richmond (Brittan & Richmond 1853), Asa Mahan (1855), and E. C. Rogers (1853).

Several other examples appeared as explanations of the phenomenon of table turning (De Gasparin 1854, Thury 1855), which created much publicity. As the well-known French investigator of table-turning Agénor de Gasparin wrote in his classic *Des Tables Tournantes* (Figure 1):



Figure 1. Agénor de Gasparin's *Des Tables Tournantes* (1854)

If my brain, active as a Leyden jar, emits and directs a fluidic current through my nerves, if the other members of the [mediumistic] chain follow similarly, it is evident that it would not be long for us to form sort of an electric battery, by which the influence will be felt according to our thoughts; we will produce a rotation, we will produce, also at a distance, vigorous liftings. (De Gasparin 1854:Volume 1:514)

A variety of similar ideas continued to be postulated and further developed later. This included various sorts of speculations such as those appearing in *Spiritualism Answered by Science* (Cox 1872) and in *Spiritism* (Von Hartmann 1885), and in the Twentieth Century (e.g., Morselli 1908, Sudre 1926) to account for physical mediumship. According to German philosopher Eduard Von Hartmann, the projection of nerve force by mediums was

not a function of those parts of the brain which serve as support to the conscious will, but of deeper-lying layers of the brain which either coincide with those supporting the somnambulant consciousness, or are more approximate to them than to the first. (Von Hartmann 1885:51)

Consequently,

the development of magnetic–mediumistic nerve force is stronger in the somnambulant than in the waking state . . . (Von Hartmann 1885:51)

Somewhat earlier, English physicist William Crookes helped popularize ideas of force through his writings about the physical phenomena of medium D. D. Home. He wrote:

Being firmly convinced that there could be no manifestation of one form of force without the corresponding expenditure of some other form of force, I for a long time searched in vain for evidence of any force or power being used up in the production of these results.

Now, however, having seen more of Mr. Home, I think I perceive what it is that this psychic force uses up for its development . . . after witnessing the painful state of nervous and bodily prostration in which some of these experiments have left Mr. Home—after seeing him lying in an almost fainting condition on the floor, pale and speechless—I could scarcely doubt that the evolution of psychic force is accompanied by a corresponding drain on vital force. (Crookes 1874:40–41)

Many also speculated about the process underlying materialization. A Twentieth-Century example was French researcher Gustave Geley, who argued that the phenomenon consisted of an

anatomy-biologic decentralisation in the medium's body and an externalisation of the decentralised factors in an amorphous state, solid, liquid, or vaporous. (Geley 1924/1927:358)

There were also speculations to account for mental phenomena. Various other forms of bodily radiations or biophysical emanations were postulated in different time periods to account for telepathy (for an overview and bibliography, see Alvarado 2008, 2015).

Interestingly, such ideas were also related to the concept of subtle bodies, or fluidic doubles, believed by many to be able to exteriorize from the body. This was an ancient concept (Mead 1919, Poortman 1954/1978), and one discussed by de Rochas in the Excerpt presented below (for the purpose of this paper, I will not get into discussion of different types of subtle bodies).

The idea of doubles, and more generally, subtle bodies of different sorts, has a long literature, and one that has been connected to psychic phenomena (Alvarado 2009a, Vesme 1898). Various authors such as Adolphe d'Assier (1883/1887) and Carl du Prel (1899/1908) helped to keep alive the concept, not to mention the writings of well-known occultists such as Gérard Encausse (1890) and Annie Besant (1896). Alexander Aksakof (1890/1895) defended the existence of spontaneously produced doubles, seen as apparitions, with some degree of materiality.

In ideas that preceded the concept of a fluidic double discussed by de Rochas as applied to physical mediumship, several Nineteenth-Century writers speculated that the medium's double produced materializations (e.g., Coleman 1865:127–128). Referring to the double, a later writer stated that “the substance composing this counterpart is, to a certain extent, the

nucleus around which all spirits materializing are developed or clothed” (Brackett 1886:126).⁴

Various writers from different branches of occultism also discussed astral bodies and materializations, as seen in *La Magie et l’Hypnose* (Encausse 1897:143) and in *The Ocean of Theosophy* (Judge 1893:150). Considering the cause of magical action on human beings, German philosopher Carl du Prel referred to the astral body. This agent, “when it manifests as an apparition; (double, phantom, materialization) reproduces the outline of the exterior man” (Du Prel 1899/1908:394).

In the de Rochas’ Excerpt reprinted below, he defended the idea of a semi-physical principle between the spirit and the physical body. This idea was by no means new with him. Limiting references to the Nineteenth Century, some examples are the “life” principle of Chardel (1818), the “psychode” of Thury (1855), and the “perispirit” of Kardec (1863).⁵ Several other French writers who were contemporaries of de Rochas discussed the existence of semi-physical fluidic doubles, showing the topic received much attention in some circles. This included, among others, Gabriel Delanne (1909), Hector Durville (1909), and Louis-Sophrone Fugairon (1907).

Interestingly, all these ideas of forces and subtle bodies were interrelated. In a book about “human radiations,” Raoul Montandon (1927:4–5) stated that the existence of the double was vital to “the understanding of nearly all the manifestations which occupy Occultists, Metapsychists, Spiritists, etc.”

Albert de Rochas

In 1914 it was announced that a group of students of psychic phenomena and scientists formed a committee to express their “admiration and sympathy towards the veteran of metapsychic studies” Albert de Rochas (Anonymous 1914), whose scientific jubilee was due. That the man was held in high esteem was evident by the names of these individuals, which included, among others known for their interest in psychic phenomena, physicians Gustave Geley, Eugène Osty, and Albert von Schrenck-Notzing, physiologist Charles Richet, philosophers Henri Bergson and Émile Boirac, and astronomer Camille Flammarion.

Colonel Eugène-August-Albert de Rochas d’Aiglun (1837–1914), who had the title of Count, is one of those psychological researchers in need of study, and a figure forgotten by many contemporary parapsychologists.⁶ According to biographical sources, de Rochas was from an old family from Provence, France. His initial education took place at the Lyceum of Grenoble, and he obtained in 1856 an honorary mention in mathematics. He entered the École Polytechnique in 1857, and in the following years he was in the military service, rising steadily in rank and holding different posts. By 1888 he



Figure 2. Albert de Rochas

became the administrator of the École Polytechnique, after having become Lieutenant Colonel. He hoped this position would provide time for scientific studies, and this was the case until a military superior proclaimed that occult practices were not proper in a military school (de Rochas 1895a:183, see also Gaillard 1902). In a later edition of the of de Rochas' book (1895a), he replied that "as the name indicates, the École Polytechnique was not only a military school and that all sciences were occult before being discovered," and unfortunately "from that moment, I had to abandon the experiments I had initiated in one of the physics laboratories of the institution . . ."

(de Rochas 1899:190). Forced to retire, de Rochas (Figure 2) found himself with the freedom to do what he wanted (see also Anonymous 1915, Curinier no date).

Many of his studies were on topics of military and science history, fortifications, and other issues, among them *La Science des Philosophes et l'Art des Thaumaturges dans l'Antiquité*, a study of the pneumatics of Heron and Philo in which he translated these authors from Greek (de Rochas 1882b), and *La Science Dans l'Antiquité: Les Origines de la Science et Ses Premières Applications* (de Rochas no date circa 1883), about science and technology in ancient times.⁷ Some of this work led him to receive several distinctions and awards. Among others, gold medals from the Society for Greek Studies in 1872 and from the National Congress of Geography Societies in 1882 were conferred on him. In addition, he was elected an Officer of the Legion of Honor (Curinier no date:10).

De Rochas believed that phenomena considered through history to be unexplained would eventually be accounted for as our knowledge of the workings of nature increased. Some phenomena, he stated, were due to unknown principles related to "the nervous organization of exceptionally constituted individuals" (de Rochas 1897a:379). But he was also aware of the tendency of many to dispute the existence of some phenomena "because they rarely occur and we consider the accounts about them as simple legends due to the natural tendency of the human mind towards the marvellous" (de Rochas no date circa 1883:5).

He participated in séances with many mediums and published various books. Several of them were about psychic forces, a topic to which he became an important contributor, and included: *Les Forces non Définies* (1887a), *Le Fluide des Magnetiseurs* (1891), *L'Extériorisation de la Sensibilité* (1895a), and *Les Frontières de la Science* (1902).

His first studies included a followup to Reichenbah's work regarding

perceptions of lights in magnets and in human beings (De Rochas 1895a:Chapter 1). De Rochas, like other neo-mesmerists, held the belief that humans had a “fluid that circulates along the nerves like electricity circulates along the metallic wires of a telegraphic network” (de Rochas 1895a:58). He stated that such fluid exteriorized through the breath, and through the eyes, fingers, ears, and other parts of the body,

Such beliefs were related to de Rochas’ work regarding the “exteriorization of sensibility,” in which a magnetized person projected their tactile sensibility to objects or to the surrounding environment (de Rochas 1892a:Chapter 3, 1892b, 1895a:Chapter 2). While such exteriorization was invisible, it was perceived by some experimental subjects. Figure 3 is a drawing representing such perceptions, in the form of layers, by one of his participants, a man named Albert Levy.

Although many accepted the literal exteriorization explanation (e.g., Gasc-Desfossés 1897:97–105), others mentioned the possible effects of suggestion (e.g., Boirac 1896:215, Croq 1900:Chapter 11:Part 3), something considered by de Rochas but apparently not controlled for in many tests.⁸ In any case, de Rochas’ exteriorization work was widely discussed in both popular (de Rochas 1892b) and scientific (Boirac 1896) forums, including public lectures (Anonymous 1899), giving him much publicity in France and abroad (for an example in the United States, see Gaullieur 1895).

De Rochas also published books about physical phenomena, such as *L’Extériorisation de la Motricité* (1896), and *La Lévitacion* (1897c), and about various other topics (e.g., de Rochas 1904b). He wrote about hypnosis, exploring its stages and effects, and the properties of magnetic procedures and suggestion to induce various manifestations, some of a psychic nature (de Rochas, 1892a, 1893, 1895b, 1900). Hypnotism, he wrote (de Rochas 1892a:75), “is but the entrance hall to a vast and marvelous building . . .”

Other topics covered by this researcher in his writings were medium Eusapia Palladino (de Rochas 1897b), stigmatization (de Rochas 1903), magnetic/hypnotic regression (de Rochas 1905a), spirit photography (de Rochas 1905b), apparitions and materializations (de Rochas 1906b), auras and luminous phenomena (de Rochas 1911b), recollections of previous lives (de Rochas 1911c), and what he referred to as the “suspension of life,” or cases of lack of food intake and prolonged sleep for long periods, and apparent death (de Rochas no date circa 1914).



Figure 3. Layers of sensibility drawn by an experimental subject (de Rochas 1895b)

De Rochas' Excerpt

Article About Eusapia Palladino

The article from which the Excerpt below is taken (de Rochas 1897b) is about the Italian medium Eusapia Palladino, who was at the height of her career during the 1890s.⁹ It is a report of séances de Rochas had with the medium in France held between October 2 and 14 of 1896. The French researcher had many séances with Palladino (e.g., de Rochas 1897b, Sabatier, de Rochas, de Gramont, Maxwell, Dariex, & de Watteville, 1896), and devoted more than half of his book *L'Extériorisation de la Motricité* (1896:1–315) to her, a discussion that is probably the most complete overview of the medium and her phenomena published during the Nineteenth Century.

The 1897 article from which the following Excerpt is taken was mainly a report of séances, which included discussions of the effects of magnetic passes on the medium, which are summarized by the observation that the medium showed behaviors similar to those of other magnetized individuals. It was also said that there seemed to be an invisible sensitive link or connection between her and the objects moved. According to de Rochas, the medium had her arms extended with her fists closed toward a table that was moving. He pinched the surrounding air between the table and Palladino's fists and she uttered a cry and remonstrated him (de Rochas 1897b:10).

It was also reported that the medium's sensitivity was exteriorized, because under magnetization she said she saw on her right side "sort of a phantom and that it was at the location of this phantom that her sensibility was localized" (de Rochas 1897b:7). Such phantoms were also seen by various individuals magnetized by de Rochas, such as the young man Laurent (de Rochas 1895b), and the young woman Maria Mayo (de Rochas 1905a).

Observations of this sort and of the exteriorization of sensibility recorded before 1897 prepared the ground for the ideas appearing in the Excerpt reprinted here, and can be found at the end of that article under the heading "Hypotheses" (pp. 22–28).

Excerpt from de Rochas (1897b)

The moment seems to come for me to attempt a synthesis of all these facts, and I will go from the *postulatum* that in the living man there is a SPIRIT and a BODY.

The spirit we cannot apprehend; all we know is that from it come the phenomena of will, thought, and feeling.

As for the body, it is pointless to define it, but we will distinguish two things: the raw material (bones, flesh, blood, etc.) and an invisible agent which, single or double, transmits to the mind the sensations of the flesh and to the muscles the orders of the mind.

Intimately linked to the body that secretes it during life, it is halted, in most, on the surface of the skin and escapes only through more or less intense effluvia,

depending on the individual, through the sense organs and the most prominent parts of the body, such as the fingertips. This at least are the frequent assertions of subjects who have acquired by certain processes a momentary visual hyperesthesia, which was admitted by the old magnetisers . . .¹⁰

In some people called *subjects* the adherence of nervous fluid to the fleshly organism is weak, so that it can be moved with extreme ease and produce the known phenomena of hyperesthesia and complete insensitivity due either to self-suggestion, that is to say, to the action of the spirit of the subject itself on its fluidic body, or at the suggestion of another person whose mind has contacted the fluidic body of the subject.

Some subjects, even more sensitive, can project their nervous fluid, under certain conditions, out of the skin, and so produce the phenomenon that I studied under the name of *exteriorization of sensibility*.¹¹ It is understood easily that a mechanical action exerted by these effluvia, *out of the body*, can propagate thanks to them and thus go up to the brain.

The exteriorization of motricity¹² is more difficult to understand and I cannot, trying to explain, but resort to a comparison.

Suppose that, in some way, we prevent the nerve agent to reach our hand; it will become a corpse, an inert material as a piece of wood, and nonetheless it will come back under the control of our will when we have given to this inert material the exact proportion of fluid it takes to animate. Let's concede that a person can project the same fluid on a piece of wood in sufficient quantities to soak it in the same proportion; it will not be absurd to believe that, by an unknown mechanism of attractions and electrical repulsions, this piece of wood will act as an extension of the body of this person.¹³

This also explains the movements of tables under the fingers of those called *mediums*, and in general all the movements *with contact* produced on light objects by many sensitives, without significant muscular effort. These movements have been thoroughly studied by Baron de Reichenbach and described by him in five lectures given in 1856 . . .¹⁴

It even includes the production of movements requiring a force greater than that of the medium through the chain which puts at his disposal part of the force of the assistants.

But such a simplistic hypothesis does not account for the formation of hands,¹⁵ and one is led to complete it as follows.

The nerve agent spreads along the sensory and motor nerves in all parts of the body. So we can say that it presents on the whole the same shape as the body, since it occupies the same portion of space, and is called the *fluidic double* of man, without leaving the domain of positive science.

Many experiments, which unfortunately had as guarantor only the evidence of subjects (at least those I have made),¹⁶ appear to establish that this double may reconstitute outside the body, after a sufficient externalization of nerve impulses, such as a crystal is reformed into a solution when it is sufficiently concentrated.

Thus exteriorized the double continues to depend on the spirit and it obeys it with even more ease since it is now less hindered by its adherence to the flesh, so that the subject can move it and build up the material on one or another of its parts in order to make this part perceptible to the ordinary senses.

In this way Eusapia forms the hands that are seen and felt by the spectators.

Other experiments, which are less numerous and, consequently, we should not accept but with great reservations, tend to prove that the exteriorized fluidic matter can be modeled due to the influence of a fairly powerful will, as clay is shaped under the hand of a sculptor.

Presumably Eusapia, after passing through various spiritist environments, conceived in her imagination a John King,¹⁷ . . . and managed to give forms to her own fluidic body, when she made us feel big hands which she produced at a distance, on clay, [and the] impressions of a man's head . . .¹⁸

Thus, everything that my colleagues and I have seen with Eusapia can be explained (even the lights, which would be but very intense condensations of the nervous substance) without the intervention of a spirit other than hers.¹⁹

But if nothing has shown us that John exists, nothing has proved to us either that he does not exist . . .

We obtain in effect a first stage of the release of the fluidic body in the exteriorization of sensibility in the form of concentric layers around the body of the subject. The materiality of the effluvia is demonstrated by the fact that they dissolve in some substances such as water and fat; but, like odor, the reduction of body weight given off is immeasurable by our instruments.

The second stage is given by the coagulation of these effluvia in a sensitive double, but not visible yet to ordinary eyes.

The third stage is visible and tangible materialization, but only of a part of the body. The psychic matter emitted by the medium seems to be able to produce these effects on the condition that it appears in a place sheltered from light vibrations and of the sitter's gaze. The medium may remain in the light, but the materialization forms in a dark recess and very close.

Finally, the fourth stage is the materialization of an entire human form. Here it is almost always that the medium herself is away from light and from the gaze of the sitters; as in the previous case the form only shows up when it acquires a sufficient degree of materiality, but this materiality can be intense enough to withstand several hours of disorganizing influences . . .

In the third and the fourth stages, it is as a galvanoplastic transport of the matter of the physical body of the medium, matter that comes from the physical body to occupy a similar position on the fluidic body. It has been found with a balance, *a very large number of times*, that the medium lost some of its weight and that this weight went into the materialized body . . .²⁰

The most curious case, which so far is unique, is that of Mistress d'Espérance with whom this transport was done with such intensity that some of her own body had become invisible. There was only in its place but a fluidic body of which the double is only an emanation; the spectators could pass their hand across, but she felt it.²¹ This phenomenon, taken to its extreme limit, would lead to the complete disappearance of the body of the medium and its appearance in another place, as is reported in the lives of saints.

In full body materialization, the body is almost always animated by an intelligence different from that of the medium. What is the nature of these intelligences? To what degree of materialization can they intervene to direct the exteriorized psychic matter? These are issues of great interest, but which are not yet resolved.

Concluding Remarks

De Rochas' ideas, which he also presented in other publications (e.g., de Rochas 1895c, 1909), have been forgotten by many, but they received some attention in his day. They were an extension of earlier concepts derived from the writings of the mesmerists, Reichenbach, and many others interested in various forms of psychic phenomena, such as mediumship. This was the case for both ideas of an exteriorized force and a fluidic double, which for de Rochas, and others, were not different concepts.

The theoretical part of the 1897 paper does not seem to have been cited directly, but the ideas were referred to occasionally (e.g., Anonymous 1897, Carrington 1909:269, Flammarion 1907:409), providing support for later similar speculations. In later years, de Rochas (1902:Chapter 1, 1909) discussed the same ideas that appear in the Excerpt, in part using the same words. In a letter he wrote in 1901 to a French writer, de Rochas defended the view that many psychic phenomena supported the idea of the exteriorization of thought, as well as of the sensory and motor powers of the body. This, he believed,

proved the existence of several emanations of various nature which the magnetizers confused under the name of *magnetic Fluid*, and which agree with the theories of the Orientals, of the ancient Greek philosophers, and the first Fathers of the Church about the *fluidic body or soul*, which serve as an intermediary between the Spirit and the Body. (de Rochas 1904b:26)

While de Rochas (1896:477) said he was preparing a book about phantoms of the living discussing the concept of fluidic bodies, he later stated he was not going to publish such a work (de Rochas 1902:1). In later publications he continued to discuss the astral body and attempts to project it from the physical body (de Rochas 1905a, 1906a, 1910, 1911a), but this did not involve out-of-body experiences in the sense that the magnetized person was conscious of being located out of their physical body (as stated by Bozzano 1911:157–168). De Rochas (1900:Chapter 4, 1908) was also interested in the photographic detection of this subtle body, as were other contemporaries, such as Hector Durville (1909).²² Interestingly, the close relationship between the projected sensibility and the concept of a double was supported by sensations perceived by the subject. Similar to those instances in which someone felt pain when an object in which his or her sensibility was embedded was pricked, pain (and other) sensations were also felt when the double, only seen by the experimental participant, was touched at the position where it was reported to be (de Rochas 1905a:5,7, 1910:291, 293, 294).

These ideas influenced later writers about subtle bodies, among them Delanne (1909), Durville (1909), and Lefranc (1911a). Bozzano (1904) argued that de Rochas' work on exteriorization of sensibility contributed to the recognition of the existence of a fluidic double and, in turn, to the recognition that this double could leave the body, showing the spiritual nature of man.²³

Ideas of forces (without emphasis on a double) to explain physical mediumship also continued after de Rochas' 1897 paper. In Germany, Schrenck-Notzing (1920) wrote under the assumption of such concepts, as did Sudre (1926) in France, and Carrington (1921) in the United States. Several others continued this tradition, and some of them, like de Rochas, presented their ideas as explanations of Palladino's mediumship (e.g., Carrington 1909, de Fontenay 1898, Morselli 1908).

The preceding Excerpt is part of the history of ideas about doubles, but also of attempts to explain materializations, and psychokinesis in general. But such ideas, while part of current popular culture, do not appear to interest many modern parapsychologists, particularly those representative of the experimental approach. As pointed out before (Alvarado 2006), some academic parapsychologists have moved away from this biophysical or psychoenergetic tradition, preferring instead ideas based on as yet unspecified non-materialistic concepts (e.g., Kelly 2015, Tart 2009). Others have suggested physical approaches that do not assume force-like mechanisms like the ones postulated by de Rochas and others (e.g., Walker 1975, Jahn & Dunne 2001). The same may be said about semi-physical subtle bodies. For example, recent academic discussions of out-of-body experiences have emphasized psychological and neurological-informed speculations, as I have reviewed elsewhere (Cardeña & Alvarado 2014:189–191).

Seen from this perspective, de Rochas' ideas probably appear to some of our contemporaries as antiquated and of little relevance to explain the riddle of psychic phenomena (and physical phenomena in particular), although there is still interest and belief in such ideas, an example being modern spiritist discussions (Loureiro 1998), which do not seem to interact with current parapsychology.

My interest, however, has not been in the validity of de Rochas' ideas, be they magnetic effluvia or fluidic doubles. My purpose has been that of rescuing from oblivion ideas that are sometimes forgotten by parapsychologists today because they have fallen out of fashion (even if still believed in by some groups), or because they are considered today to be wrong. A history of attempts to understand physical phenomena, however, should not consist only of the things believed to be "correct" today. Such a

perspective reflects current conceptions but do not do justice to the actual developments of the past. De Rochas' theoretical model, bringing together ideas of biophysical emanations and fields, and of subtle bodies, are a reminder of a different era and of different conceptions that provide us with a more complete view of past attempts to understand physical mediumship.

Notes

- ¹ The mesmeric movement, and its concept of animal magnetism, is discussed by Crabtree (1993), Gauld (1992), and Méheust (1999). Also important was the work of Karl von Reichenbach (1849/1851), whose ideas about a force he called Od perceived by some individuals around crystals, magnets, and human beings were widely influential (see Nahm 2012).
- ² I have reviewed in various papers aspects of the development of ideas of body emanations or radiations to explain psychic phenomena (e.g., Alvarado 2006, 2009b, 2011b, Alvarado & Nahm 2011). See also the overviews of Amadou (1953) and Ungaro (1992), and the earlier publications of individuals such as Aksakof (1890/1895:1–21), Montandon (1927), Servadio (1932), and Sudre (1926:Chapter 6).
- ³ On the neo-mesmeric movement, see Alvarado (2009b, 2009c) and Harrington (1988).
- ⁴ Several observations were reported about instances where a materialized figure looked like the medium (e.g., Anonymous 1879:133), what some interpreted to be the medium's double. In later years Polish philosopher and psychologist Julian Ochorowicz (1911–1912) used the idea to explain the invisible hands he photographed with medium Stanislaw Tomczyk, arguing that her astral body could “manifest exteriorly and materialize in a manner sufficient to influence a photographic plate” (Ochorowicz 1911–1912:335).
- ⁵ In an article in a mesmeric journal, it was affirmed that magnetism connected matter and spirit:

The soul touches the fluid and the fluid touches the body, it is through this channel that these two essentially different substances communicate. (Berroyer 1852:170)

The concept of the perispirit was further developed in later years in the spiritist literature (e.g., Delanne 1899), and is still discussed in some circles (Loureiro 1998).

- ⁶ For general information about de Rochas, see Anonymous (1914, no date), Curimier (no date:9–10), Fodor (no date:332), and Marzorati (1914). See also Alvarado (2009b:373–374), Castellan (1955/1960:60–62), Lachapelle (2011:56–58), and Peter (1915).

⁷ See also works about an engineer (de Rochas d'Aiglun 1867), fortifications (de Rochas d'Aiglun 1881), artillery (de Rochas d'Aiglun 1882a), synesthesia (de Rochas 1885), geography and the ancient Greeks (de Rochas 1887b), and messenger pigeons (de Rochas 1890). De Rochas used two versions of his name in his publications, but for convenience I have listed them chronologically in the references, not alphabetically.

⁸ Another critic also mentioned that most of the persons participating in the experiments were familiar with mesmeric ideas, or were experienced subjects, or individuals who had participated in many tests (Dariex 1895). The implication was that subjects could be trained to produce specific phenomena, which may reflect the demands of the environment they were working in. Much of the work of de Rochas was done with such subjects, something that was also common as well with many “star” hysterics and hypnotic subjects during the Nineteenth Century (Alvarado 2009d, Carroy 1991).

Interestingly, de Rochas (1895c:Chapter 3, 1904a) speculated that such exteriorization accounted for the long tradition of spells. This was the case with attempts to influence someone using some object representing them, an object imprinted with their “sensibility.”

⁹ The prominence of Palladino as a research medium during the Nineteenth Century can be appreciated from the overviews of Carrington (1909:28–72) and de Rochas (1896:1–315). Many were the reports about her phenomena during this period, among them those of Aksakof, Schiaparelli, du Prel, Brofferio, Gerosa, Ermacora and Finzi (1893), de Fontenay (1898), Lodge (1894), and Sidgwick (1895). Interestingly, Palladino inspired many others in addition to de Rochas to develop ideas to explain physical phenomena, as I have discussed elsewhere (Alvarado 1993).

¹⁰ Regarding observations of luminous effluvia by mesmerized individuals, an early mesmerist stated: “Most somnambulists see a bright luminous fluid surround their magnetizer, coming out stronger from his head and hands” (Deleuze 1813:82). For particular examples, see Buckland (1850:43), Elliotson (1848:225), and Tardy de Montravel (1785:27–28). Luys (1892) reported similar observations in later years. In this part of the text the author refers to the first chapter of one of his books entitled “On the Objectivity of Effluvia Perceived in the Form of Light During the Hypnotic State” (de Rochas 1895a; see also de Rochas 1894). He also cited a French edition of lectures delivered in 1866 by Reichenbach (no date) in Vienna (see also De Rochas D'Aiglun 1891).

¹¹ For example, in his studies with Mrs. Lux (pseudonym for Mrs. L. Lambert), de Rochas stated:

I charged a photographic plate with her effluvia and placed it first between her hands . . . [after the plate was developed] Mrs. Lux felt when I touched the plate, but she felt nothing when MB [the person who developed the plate] touched it, unless I touched MB myself . . . I pricked on the image of one of her hands: Mrs. Lux fainted. (de Rochas 1895a:104–105)

Lefranc (1911b) reported an instance of “repercussion” in which Mrs. Lambert felt her double was grabbed by an invisible hand. Next day she showed swollenness and redness of the forearm. Photographs of the bruise were presented.

¹² In his book *L’Extériorisation de la Motricité*, de Rochas (1896:ii) defines the term as the induction of movements on stationary objects via a force coming from the body.

¹³ Similarly, Chevillard (1869) wrote in relation to turning tables that:

The table is truly magnetized by the medium’s will . . . The table becomes an organ of the medium–magnetizer, as his arm, his ear, and it will obey for the same reason . . . that my arms obey, when my will commands. (Chevillard 1869:14–15).

¹⁴ De Rochas cites the French edition of these lectures, entitled *Les Effluves Odiques* (Reichenbach no date). The first part of the book has a long introduction by de Rochas entitled “Notice Historique sur les Recherches Relatives aux Effets Mécaniques de l’Od.” Regarding table turning, see de Rochas’ (1896:Part 2, Chapter 1) discussion of the work of Agénor de Gasparin (1854) and Marc Thury (1855).

¹⁵ This is a reference to materializations of hands. De Rochas (1897b:20) reported this phenomenon with Palladino, saying that “fluidic hands,” as well as movement of objects, “must be considered a fact definitively acquired by positive science.” He wrote about materialized hands later (de Rochas 1909). Appearances of hands in séances were well-known before the time when our author was writing (e.g., Adare 1869:135).

¹⁶ Here he cites his article about phantoms of the living (de Rochas 1895b; on de Rochas and doubles see Alvarado 2011a). This work, and that of visual perceptions of lights from magnets and layers of sensibility (de Rochas 1895a), depended on the reports of the magnetized experimental participants.

¹⁷ This was the medium’s spirit control. As de Rochas (1896) wrote:

This John King says he is the brother of Crookes’ Katie King and that he was Eusapia’s father in another existence. It is John who speaks when Eusapia is in a trance; he speaks of her calling her ‘my daughter’ and gives advice on how she should be treated. (de Rochas 1896:16)

Katie King was a full body materialization observed by William Crookes with medium Florence Cook (Crookes 1874:102–112).

- ¹⁸ De Rochas (1896:132–133) had referred to imprints on clay with Palladino in a previous publication. Describing what happened in an instance in which a clay mould of clenching fingers was obtained, he wrote:

Eusapia groaned, writhed and all her limbs trembled; however, her hands did not leave ours for a moment. Then she said: It is done. (de Rochas 1896:132)

Bozzano (1911:167) interpreted imprints of Palladino's facial features on clay as the influence of "her 'etheric body,' doubled and materialized." Interestingly, de Rochas recounted in a different publication an instance in which he believed that the medium was in a deep hypnotic state and she saw, "to her great surprise, on her right, a blue phantom. I asked her if it was John; she replied no, but that it was that which John used"(de Rochas 1896:17).

- ¹⁹ Explanations of physical mediumship based on concepts of nervous forces without recourse to discarnate agency were frequent in the literature before de Rochas published his ideas (e.g., Rogers 1853, Von Hartmann 1885).
- ²⁰ Most of the weighing tests with mediums conducted before de Rochas' article was published do not support this (but see Aksakof 1890/1895:243, and Harrison 1878). Regarding stages of materialization, Alexander Aksakof (1894–1896/1898:13) postulated that there were three of them. This consisted of formations not visible to the naked eye, visible incomplete formations, and materializations of complete bodies.
- ²¹ On d'Espérance, see Fodor (no date:83–85). Aksakof (1894–1896/1898) has discussed the apparent instance of dematerialization mentioned by de Rochas (see also D'Espérance, no date). There have been other reports of dematerialization of the whole body of mediums (e.g., Roberts 1876).
- ²² de Rochas added in a footnote:

Some people, especially sensitives, perceive it by sight or touch. I photographed it again with [photographer Paul] Nadar, but I could not repeat the experiment. The spirit photographs appear to be due to the action, on the plate, of the double of the subject modeled by a foreign intelligence, but still invisible in this state. (de Rochas 1897a:27)

See, on photographs of the astral body and its emanations, de Rochas (1900:Chapter 4, 1908). The idea of capturing the spirit of living individuals in photos was present in the early spiritualist literature (e.g., Carter 1875, Moses 1876). Furthermore, there was much interest in the

photographic detection of invisible vital or nervous forces (e.g., Baraduc 1896, Luys & David 1897; see also the overviews of Chéroux 2005 and Krauss 1995).

- ²³ Bozzano developed these ideas in later publications (e.g., Bozzano 1911, 1934/1937), connecting different forms of nonconscious projections (such as autoscopy and many apparitions of the living) to the conscious experience of feeling out of the body, and to the idea of transcending the body and surviving its physical death (see also Alvarado 2005). De Rochas' work was one strand of evidence cited to argue for the existence of a double independent of physical constraints.

Acknowledgements

I wish to thank Massimo Biondi for taking the time to trace an article in Italian about de Rochas.

References Cited

- Adare, Viscount [1869]. *Experiences in Spiritualism with D. D. Home*. London: Thomas Scott.
- Aksakof, A. (1895). *Animisme et Spiritisme: Essai d'un Examen Critique des Phénomènes Médiumniques*. Paris: P. G. Leymarie. (Original work published in German 1890)
- Aksakof, A. (1898). *A Case of Partial Dematerialization of the Body of the Medium: Investigation and Discussion*. Boston: Banner of Light. (Original work published in German 1894–1895)
- Aksakof, A., Schiaparelli, G., du Prel, C., Brofferio, A., Gerosa, G., Ermacora, G. B., & Finzi, G. (1893). Rapport de la commission réunie à Milan pour l'étude des phénomènes psychiques. *Annales des Sciences Psychiques*, 3:39–64.
- Alvarado, C. S. (1993). Gifted subjects' contributions to psychical research: The case of Eusapia Palladino. *Journal of the Society for Psychical Research*, 59:269–292.
- Alvarado, C. S. (2005). Ernesto Bozzano on the phenomena of bilocation. *Journal of Near-Death Studies*, 23:207–238.
- Alvarado, C. S. (2006). Human radiations: Concepts of force in mesmerism, spiritualism and psychical research. *Journal of the Society for Psychical Research*, 70:138–162.
- Alvarado, C. S. (2008). Further notes on historical ideas of human radiations: IV. Mental phenomena. *Psypioneer*, 4, 119–126. <http://www.woodlandway.org/PDF/PP4.5May2008.pdf>
- Alvarado, C. S. (2009a). Historical notes on doubles and travelling spirits: I—Introduction. *Paranormal Review*, 50:6–15.
- Alvarado, C. S. (2009b). Late nineteenth and early twentieth century discussions of animal magnetism. *International Journal of Clinical and Experimental Hypnosis*, 57:366–381.
- Alvarado, C. S. (2009c). Modern animal magnetism: The work of Alexandre Baréty, Émile Boirac, and Julian Ochorowicz. *Australian Journal of Clinical and Experimental Hypnosis*, 37:1–15.
- Alvarado, C. S. (2009d). Nineteenth-century hysteria and hypnosis: A historical note on Blanche Wittmann. *Australian Journal of Clinical and Experimental Hypnosis*, 37:21–36.
- Alvarado, C. S. (2011a). Historical notes on doubles and travelling spirits: X. Albert de Rochas. *Paranormal Review*, 60:3–6.
- Alvarado, C. S. (2011b). Unorthodox concepts of force and psychic phenomena. *Journal of Scientific Exploration*, 25:121–130.
- Alvarado, C. S. (2015). Telepathic emissions: Edwin J. Houston on "Cerebral Radiation." *Journal of Scientific Exploration*, 29:467–490.

- Alvarado, C. S., & Nahm, M. (2011). Psychic phenomena and the vital force: Hereward Carrington on "Vital Energy and Psychological Phenomena." *Journal of the Society for Psychological Research*, 75:91–103.
- Amadou, R. (1953). Esquisse d'une histoire philosophique du fluide. *Revue Métapsychique*, 21:5–33.
- Anonymous (1879). Materialisation manifestations. *Spiritualist Newspaper*, March 2:133–134.
- Anonymous (1897). X.—Some stories of mediums and their exploits: II. Eusapia Palladino and her "astral" hands. *Borderland*, 4:49–50.
- Anonymous (1899). Spectacles & concerts. *Le Figaro*, January 5:4.
- Anonymous (1914). Echos et nouvelles: Pour le jubilé scientifique de M. de Rochas. *Annales des Sciences Psychiques*, 24:217.
- Anonymous (1915). Nécrologie: Albert de Rochas. *Annales des Sciences Psychiques*, 25:243–245.
- Anonymous (no date). Albert de Rochas papers: Background note.
<http://amphilsoc.org/mole/view?docId=ead/Mss.Ms.Coll.106-ead.xml#bioghist>
- Baraduc, H. (1896). *L'Ame Humaine: Ses Mouvements, ses Lumières et l'Iconographie de l'Invisible Fluidique*. Paris: Georges Carré.
- Baréty, A. (1887). *Le Magnétisme Animal: Étudié Sous le Nom de Force Neurique Rayonnante et Circulante dans ses Propriétés Physiques, Physiologiques et Thérapeutiques*. Paris: Octave Doin.
- Berruyer, A. (1852). De l'union de l'ame et du corps. *Journal du Magnétisme*, 11:169–191.
- Besant, A. (1896). *Man and His Bodies*. London: Theosophical Publishing Society.
- Boirac, E. (1896). Review of *L'Extériorisation de la Sensibilité*, by A. de Rochas. *Revue Philosophique de la France et de l'Étranger*, 41:212–216.
- Boirac, E. (1908). *La Psychologie Inconnue: Introduction et Contribution à l'Étude Expérimentale des Sciences Psychiques*. Paris: Félix Alcan.
- Bonnaymé, Docteur [E.] (1908). *La Force Psychique: L'Agent Magnétique et les Instruments Servant à les Mesurer* (second edition). Paris: Librairie du Magnétisme.
- Bozzano, E. (1904). Contribution à l'étude des phénomènes d'extériorisation de la sensibilité. *Revue d'Études Psychiques*, 4(2):149–158.
- Bozzano, E. (1911). Considerations et hypothèses sur les phénomènes de "bilocation." *Annales des Sciences Psychiques*, 21:65–72, 109–116, 143–152, 166–172.
- Bozzano, E. (1937). *Les Phénomènes de Bilocation*. Paris: Jean Meyer. (Original work published in Italian 1934)
- Brackett, E. A. (1886). *Materialized Apparitions: If Not Beings from Another Life, What Are They?* Boston: Colby and Rich.
- Brittan, S. B., & Richmond, B. W. (1853). *A Discussion of the Facts and Philosophy of Ancient and Modern Spiritualism*. New York: Partridge & Brittan.
- Buckland, T. (1850). *The Hand-Book of Mesmerism*. London: Hippolyte Bailliere.
- Cardeña, E., & Alvarado, C. S. (2014). Anomalous self and identity experiences. In *Varieties of Anomalous Experiences* (second edition) edited by E. Cardeña, S. J. Lynn, & S. Krippner, Washington, DC: American Psychological Association, pp. 175–212.
- Carrington, H. (1909). *Eusapia Palladino and Her Phenomena*. New York: B. W. Dodge.
- Carrington, H. (1921). Vital energy and psychical phenomena. *Psychic Research Quarterly*, 1:271–277.
- Carroy, J. (1991). *Hypnose, Suggestion et Psychologie: L'Invention de Sujets*. Paris: Presses Universitaires de France.
- Carter, A. G. W. (1875). Experiences in spirit-photography. *Banner of Light*, July 31:3.
- Castellan, Y. (1960). *La Metapsíquica*. Buenos Aires: Paidós. (Original work published in French 1955)
- Chardel, C. (1818). *Mémoire sur le Magnétisme Animal, Présenté à l'Académie de Berlin, en 1818*. Paris: Badouin.

- Chéroux, C. (2005). Photographs of fluids: An alphabet of invisible rays. In *The Perfect Medium: Photography and the Occult* by C. Chéroux et al., New Haven, CT: Yale University Press, pp. 114–138. (Original work published in French 2004)
- Chevillard, A. (1869). *Études Expérimentales sur le Fluide Nerveux et Solution Définitive du Problème Spirite*. Paris: Victor Masson.
- Coleman, B. (1865). Passing events—The spread of Spiritualism. *Spiritualist Magazine*, 6:110–128.
- Cox, E. W. (1872). *Spiritualism Answered by Science* (new revised edition). London: Longman.
- Crabtree, A. (1993). *From Mesmer to Freud: Magnetic Sleep and the Roots of Psychological Healing*. New Haven, CT: Yale University Press.
- Crookes, W. (1874). *Researches in the Phenomena of Spiritualism*. London: J. Burns.
- Croq, J. (1900). *L'Hypnotisme Scientifique* (second edition). Paris: Société d'Éditions Scientifiques.
- Curinier, C. E. (Editor) (no date). *Dictionnaire National des Contemporaines* (Volume 4). Paris: Office General d'Édition.
- Dariex, X. (1895). Review of *L'Extériorisation de la Sensibilité*, by A. de Rochas. *Annales de Sciences Psychiques*, 5:184–192.
- D'Assier, A. (1887). *Posthumous Humanity: A Study of Phantoms*. London: George Redway. (Original work published in French 1883)
- Deleuze, J. P. F. (1813). *Histoire Critique du Magnétisme Animal* (Volume 1). Paris: Mame.
- D'Espérance, E. (no date circa 1897). *Shadow Land: Or, Light From the Other Side*. London: George Redway.
- De Fontenay, G. (1898). *A Propos d'Eusapia Paladino: Les Séances de Montfort-l'Amaury (25–28 Juillet 1897)*. Paris: Société d'Éditions Scientifiques.
- De Gasparin, Cte A. (1854). *Des Tables Tournantes: Du Surnaturel en Général et des Esprits* (two volumes). Paris: E. Dentu.
- Delanne, G. (1899). *L'Ame est Immortelle: Démonstration Expérimentale*. Paris: Chamuel.
- Delanne, G. (1909). *Les Apparitions Matérialisées des Vivants & des Morts: Volume 1: Les Fantômes de Vivants*. Paris: Librairie Spirite.
- Deleuze, J. P. F. (1813). *Histoire Critique du Magnétisme Animal* (Volume 1). Paris: Mame.
- de Rochas d'Aiglun, A. (1867). *D'Arcon: Ingénieur Militaire: Sa Vie et ses Écrits*. Paris: J. Dumaine.
- de Rochas d'Aiglun, A. (1881). *Principes de la Fortification Antique*. Paris: Ducher.
- de Rochas d'Aiglun, A. (1882a). L'artillerie chez les anciens. *Bulletin Monumental ou Recueil de Documents et de Mémoires Relatifs aux Différentes Branches de l'Archéologie*, 10(5):154–177.
- de Rochas, A. (1882b). *La Science des Philosophes et l'Art des Thaumaturges dans l'Antiquité*. Paris: G. Masson.
- de Rochas, A. (no date circa 1883). *La Science Dans l'Antiquité: Les Origines de la Science et Ses Premières Applications*. Paris: G. Masson.
- de Rochas, A. (1885). L'audition colorée. *La Nature*, 13:306–307, 406–408.
- de Rochas, A. (1887a). *Les Forces Non Définies: Recherches Historiques et Expérimentales*. Paris: G. Masson.
- de Rochas, A. (1887b). Découverte de la géographie chez les Grecs et origine de cette science. *Cosmos: Revue des Sciences et de Leurs Applications*, 7(new series):79–80.
- de Rochas, A. (1890). Les pigeons messagers en orient. *Revue Scientifique*, 45:754–759.
- de Rochas D'Aiglun, [A.] (1891). *Le Fluide des Magnétiseurs: Précis des Expériences du Baron de Reichenbach sur ses Propriétés Physiques et Physiologiques*. Paris: Georges Carré.
- de Rochas, A. (1892a). *Les États Profonds de l'Hypnose*. Paris: Chamuel.
- de Rochas, A. (1892b). L'extériorisation de la sensibilité. *Le Temps*, May 27:3.
- de Rochas, A. (1893). *Les États Superficiels de l'Hypnose*. Paris: Chamuel.
- de Rochas, A. (1894). Objectivité des effluves perçus sous forme de lumière dans l'état hypnotique. *Annales des Sciences Psychiques*, 4:129–162.
- de Rochas, A. (1895a). *L'Extériorisation de la Sensibilité: Étude Expérimentale et Historique* (second edition) Paris: Chamuel.

- de Rochas, A. (1895b). Les fantômes des vivants. *Annales des Sciences Psychiques*, 5:257–275.
- de Rochas, A. (1895c). Review of *Essai de Spiritisme Scientifique*, by D. Metzger, and *Le Psychisme Expérimental*, by A. Erny. *Annales des Sciences Psychiques*, 5:119–126.
- de Rochas, A. (1896). *L'Extériorisation de la Motricité: Recueil d'Expériences et d'Observations*. Paris: Chamuel.
- de Rochas, A. (1897a). M. de Rochas, son opinion. *Revue Spirite: Journal d'Études Psychologiques*, 40:379–380.
- de Rochas, A. (1897b). Les expériences de Choisy-Yvrec (près Bordeaux) du 2 au 14 octobre 1896. *Annales des Sciences Psychiques*, 7:6–28.
- de Rochas, A. (1897c). *La Lévitiation*. Paris: P. G. Leymarie.
- de Rochas, A. (1899). *L'Extériorisation de la Sensibilité: Étude Expérimentale & Historique* (fifth edition) Paris: Chamuel.
- de Rochas, A. (1900). *Les Sentiments, la Musique et le Geste*. Grenoble: Librairie Dauphinoise H. Falque et F. Perrier.
- de Rochas, A. (1902). *Les Frontières de la Science* (Volume 1). Paris: Librairie des Sciences Psychologiques.
- de Rochas, A. (1903). Un cas de stigmatisation. *Annales des Sciences Psychiques*, 13:1–15.
- de Rochas, A. (1904a). *Le Envoutement: Documents Historiques et Expérimentaux* (second revised edition). Paris: Chacornac.
- de Rochas, A. (1904b). *Les Frontières de la Science* (Volume 2). Paris: Librairie des Sciences Psychologiques.
- de Rochas, A. (1905a). The regression of memory: Case of Mayo. *Annals of Psychological Science*, 2:1–52.
- de Rochas, A. (1905b). Concerning spirit photography. *Annals of Psychological Science*, 2:216–218.
- de Rochas, A. (1906a). New experiments relative to the astral body and the magnetic "rapport." *Annals of Psychological Science*, 4:120–125.
- de Rochas, A. (1906b). Revenants & fantomes. *Je Sais Tout*, 2:337–345.
- de Rochas, A. (1908). My experiments with M. de Jodko in 1896. *Annals of Psychological Science*, 7:80–88.
- de Rochas, A. (1909). The fluidic hands of Eusapia. *Annals of Psychological Science*, 8:219–228.
- de Rochas, A. (1910). Répercussion sur le corps physique des actions exercées sur le corps astral. *Annales des Sciences Psychiques*, 20:289–295.
- de Rochas, A. (1911a). Expériences relatives au "corps du désir." *Le Monde Psychique*, 1:257–266.
- de Rochas, A. (1911b). Les radiations lumineuses du corps humain. *Annales des Sciences Psychiques*, 21:264–268.
- de Rochas, A. (1911c). *Les Vies Successives: Documents pour l'Étude de cette Question*. Paris: Chacornac.
- de Rochas, A. (no date circa 1914). *La Suspension de la Vie*. Paris: Dorbon-Ainé.
- du Potet, Baron (1868). *Manuel de l'Étudiant Magnétiseur* (fourth edition). Paris: Germer Baillière.
- du Prel, C. (1908). *La Magie: Science Naturelle* (Volume 2). Liège: H. Vaillant. (Original work published in German 1899)
- Durville, H. (1895–1896). *Traité Expérimental de Magnétisme* (two volumes). Paris: Librairie du Magnétisme.
- Durville, H. (1909). *Le Fantôme des Vivants: Anatomie et Physiologie de l'Âme: Recherches Expérimentales sur des Dédoublement du Corps de l'Homme*. Paris: Librairie du Magnétisme.
- Elliotson, J. (1848). Cure of a true cancer of the female breast with mesmerism. *Zoist*, 6:213–237.
- Encausse, G. [under the pseudonym of Papus] (1890). Le corps astral. *L'Initiation*, 7:502–516.
- Encausse, G. [under the pseudonym of Papus] (1897). *La Magie et l'Hypnose: Recueil de Faits et d'Expériences Justifiant et Prouvant les Enseignements de l'Occultisme*. Paris: Chamuel.
- Flammarion, C. (1907). *Mysterious Psychic Forces: An Account of the Author's Investigations in Psychological Research, Together with Those of Other European Savants*. Boston: Small, Maynard.

- Fodor, N. (no date). *Encyclopaedia of Psychic Science*. London: Arthurs Press.
- Fugairon, L. S. (1907). *La Survivance de l'Ame ou la Mort et la Renaissance chez les Êtres Vivantes: Études de Physiologie et d'Embryologie Philosophiques*. Paris: Librairie du Magnétisme.
- Gaillard, J. (1902). Monsieur de Rochas. *Revue Spirite: Journal d'Études Psychologiques*, 45:418–419.
- Gasc-Desfossés, E. (1897). *Magnétisme Vital: Expériences Récentes d'Enregistrement, Suivies d'Inductions Scientifiques et Philosophiques*. Paris: Société d'Éditions Scientifiques.
- Gauld, A. (1992). *A History of Hypnotism*. Cambridge: Cambridge University Press.
- Gaullieur, H. (1895). The wonder of hypnotism and the transfer of sensitiveness from man to inert substances. *Arena*, 15:33–41.
- Geley, G. (1927). *Clairvoyance and Materialisation*. London: T. Fisher Unwin (Original work published in French 1924)
- Girod, F. (1912). *Pour Photographier les Rayons Humains: Exposé Historique et Pratique de Toutes les Méthodes Concourant à la Mise en Valeur du Rayonnement Fluidique Humain*. Paris: Bibliothèque Générale d'Éditions.
- Harrington, A. (1988). Hysteria, hypnosis and the lure of the invisible: The rise of neo-mesmerism in fin-de-siècle French psychiatry. In *The Anatomy of Madness: Essays in the History of Psychiatry*, Volume 3, *The Asylum and Its Psychiatry*, edited by W. F. Bynum, R. Porter, and M. Shepherd. London: Tavistock Press, pp. 226–246.
- Harrison, W. H. (1878). Weighing a medium during the production of spiritual manifestations. *Spiritualist Newspaper*, May 3:211–216.
- Jahn, R. G., & Dunne, B. J. (2001). A modular model of mind/matter manifestations (M5). *Journal of Scientific Exploration*, 15:299–329.
- Judge, W. Q. (1893). *The Ocean of Theosophy* (second edition). New York: The Path.
- Kardec, A. (1863). *Spiritisme Expérimental: Le Livre des Médiums* (sixth edition). Paris: Didier.
- Kelly, E. (2015). Parapsychology in context: The big picture. In *Parapsychology: A Handbook for the 21st Century* edited by E. Cardena, J. Palmer, & D. Marcusson-Clavertz, Jefferson, NC: McFarland, pp. 30–41.
- Krauss R. H. (1995). *Beyond Light and Shadow: The Role of Photography in Certain Paranormal Phenomena: An Historical Survey*. Munich: Nazrael Press.
- Lachapelle, S. (2011). *Investigating the Supernatural: From Spiritism and Occultism to Psychological Research and Metapsychics in France, 1853–1931*. Baltimore: Johns Hopkins University Press.
- Lefranc, L. (1911a). Les états du sommeil magnétique du fantôme du vivant ou corps éthérique. *Le Monde Psychique*, 1(2):3–7.
- Lefranc, L. (1911b). Cas fortuit de répercussion sur le corps physique d'une lésion produite sur le fantôme d'un sujet. *Le Monde Psychique*, 1(3):84–88.
- Lodge, O. J. (1894). Experience of unusual physical phenomena occurring in the presence of an entranced person (Eusapia Paladino). *Journal of the Society for Psychical Research*, 6:306–336, 346–360.
- Loureiro, C. B. (1998). *Perispirito: Natureza, Funções e Propriedades*. Sao Paulo: Mnêmio Tulio.
- Luys, J. (1892). De la visibilité par les sujets en état hypnotique des effluves dégagés par les êtres vivants. *Annales de Psychiatrie et d'Hypnologie dans Leurs Rapports avec la Psychologie et la Médecine Légale*, 2:321–323.
- Luys, [J.], & David, [E.]. (1897). Note sur l'enregistrement photographique des effluves qui se dégagent des extrémités des doigts et du fond de l'oeil de l'être vivant, a l'état physiologique et a l'état pathologique. *Comptes Rendus Hebdomadaires des Séances et Mémoires de la Société de Biologie*, 4(10):515–519.
- Mahan, A. (1855). *Modern Mysteries Explained and Exposed in Four Parts*. Boston: J. P. Jewett.
- Marzorati, A. (1914). Alberto de Rochas. *Luce e Ombra*, 14:565–570.
- Mead, G. R. S. (1919). *The Doctrine of the Subtle Body in Western Tradition*. London: J. M. Watkins.

- Méheust, B. (1999). *Somnambulisme et Mediumnité (1784–1930): Volume 1: Le Défi du Magnétisme Animal*. Le Plessis-Robinson: Institut Synthélabo pour de Progrès de la Connaissance.
- Mesmer, F. A. (1779). *Mémoire sur la Découverte du Magnétisme Animal*. Paris: Didot.
- Montandon, R. (1927). *Les Radiation Humaines: Introduction à la Démonstration Expérimentale de l'Existence des Corps Subtils de l'Homme*. Paris: Félix Alcan.
- Morselli, E. (1908). *Psicologia e "Spiritismo": Impressioni e Note Critiche sui Fenomeni Medianici di Eusapia Paladino* (two volumes). Turin: Fratelli Bocca.
- Moses, W. S. [under pseudonym M. A. Oxon] (1876). Photographing the spirit of a medium in Paris, while his body was asleep in London. *Spiritualist Newspaper*, March 5:119.
- Naum, M. (2012). The sorcerer of Cobenzl and his legacy: The life of Baron Karl Ludwig von Reichenbach, his work and its aftermath. *Journal of Scientific Exploration*, 26:381–407.
- Ochorowicz, J. (1911–1912). Radiographies des mains (monographie expérimentale). *Annales des Sciences Psychiques*, 21:296–303, 334–341; 22, 1–8.
- Peter, J. (1915). Albert de Rochas. *Psychische Studien*, 42:97–99.
- Poortman, J. J. (1978). *Vehicles of Consciousness: The Concept of Hylic Pluralism (Ochema)* (four volumes). Utrecht: Theosophical Society in The Netherlands. (Original work published in Dutch 1954)
- Reichenbach, C. von (1851). *Physico-Physiological Researches on the Dynamics of Magnetism, Electricity, Heat, Light, Crystallization, and Chemism, in their Relation to Vital Force* (from German second edition). New York: J. S. Redfield. (Original work published in German 1849)
- Reichenbach, Baron de (no date circa 1897). *Les Effluves Odiques*. Paris: Ernest Flammarion.
- Roberts, J. M. (1876). Spirit-materializations in the light of common sense. *Banner of Light*, September 30:1–2.
- Rogers, E. C. (1853). *Philosophy of Mysterious Agents, Human and Mundane*. Boston: John P. Jewett.
- Sabatier, A., de Rochas, A., de Gramont, A., Maxwell, J., Dariex, X., & de Watteville, C. (1896). Expériences de l'Agnelas sur Eusapia Paladino. *Annales des Sciences Psychiques*, 6:1–55.
- Schrenck-Notzing, A. F. (1920). *Physikalische Phaenomene des Mediumismus: Studien zur Erforschung der telekinetischen Vorgänge*. Munich: Ernst Reinhardt.
- Servadio, E. (1932). Proofs and counter-proofs concerning human "fluid." *Journal of the American Society for Psychical Research*, 26:168–173, 199–206.
- Sidgwick, H. (1895). Eusapia Paladino. *Journal of the Society for Psychical Research*, 7:148–159.
- Sudre, R. (1926). *Introduction à la Métapsychique Humaine*. Paris: Payot.
- Tardy de Montravel, A. A. (1785). *Essai sur le Théorie du Somnambulisme Magnétique*. London: no publisher named.
- Tart, C. T. (2009). *The End of Materialism: How Evidence of the Paranormal Is Bringing Science and Spirit Together*. Oakland, CA: New Harbinger Publications.
- Thury, M. (1855). *Les Tables Tournantes: Considérées au Point de Vue de la Question de Physique Générale qui s'y Rattache*. Geneve: J. Kessmann.
- Ungaro, J. (1992). *Las Radiaciones Humanas: Historia de la Radiónica*. Buenos Aires: Club de Estudio.
- Vesme, C. (1898). La dimostrazione sperimentale dell'esistenza del corpo fluidico. *Rivista di Studi Psicici*, 4:147–155, 175–182.
- Von Hartmann, E. (1885). *Spiritism*. London: Psychological Press.
- Walker, E. H. (1975). Foundations of parapsychical and parapsychological phenomena. In *Quantum Physics and Parapsychology* edited by L. Oteri, New York: Parapsychology Foundation, pp. 1–44.

LETTER TO THE EDITOR

Physical Mediumship: Trying to Move On

In his review of my book on the mediumship of Franek Kluski (Weaver 2015) in this Journal (Mörck 2015), Nemo Mörck raises a number of issues that I would like to clarify.

When faced with incredible reports, the natural reaction is to assume that they must be false. I can understand this position, having shared it for a long while, but it is not always tenable.

I would probably not have written about Kluski if I had not come across Filippo Bottazzi's account of his laboratory research on Eusapia Palladino (Bottazzi 1909/2011). This sent me in search of other accounts of laboratory research into physical mediumship, and they made me realize that my natural reaction was wrong. Phenomena such as those produced by Kluski sound incredible, but well-documented reports show that they are not unique, even though limited to a small number of mediums.

This does not mean accepting such reports without question. I have looked for inconsistencies, for ways of producing the phenomena fraudulently (including hidden entrances at the location of the sittings), for confirmation of claims, and for information about the backgrounds of the sitters. Naturally, I have also learned as much as I could about fraudulent tricks. This led me to believe that comparing the Kluski sittings to those given by fraudulent mediums, as suggested by Mörck (Mörck 2015:510), would be a pointless exercise. A great deal of what happens in a séance room can be faked in a variety of ways, but the two aspects which make the difference between what is explicable in principle, and what is just inexplicable, are the scale of the phenomena, and the conditions under which they arise. Hereward Carrington decided that the fraudulent methods that he described in great detail in his book (Carrington 1907) could not explain the phenomena of D. D. Home, and ended up with collective hallucinations or collaboration by accomplices as the only other explanations. He found neither of them viable in view of the nature of the phenomena and the variety of sitters and locations. I have found myself in exactly the same situation with regard to Kluski.

Moving on to the phenomena themselves, Mörck enumerates a number of reasons why it is difficult to accept the apparitions as genuine. One is that they look as if made from "cardboard and rags," although in his own words the quotations he chooses from my book are "cherry picked" (Mörck 2015:509).

This is somewhat disingenuous, in spite of the disclaimer, because the impression is given that fraud was going on unchallenged, presumably because of malobservation or collusion. Yet the actual reports make the point, over and over again, that the phenomena kept developing and changing, both during individual séances and throughout Kluski's mediumship as a whole. The transition from "cardboard and rags" to life-like features would take place in the presence of groups of observers who would all put their signatures to the reports that recorded these changes.

To give just one example, a séance held on 17 March 1920 began at midnight and went on for about two hours with a couple of breaks. The same seven participants were present throughout (including a painter, a singer, and a writer, all well-known in their day). The events described in the following excerpt were preceded by various phenomena, including a number of appearances of a face similar to the medium's above the middle of the table and above the heads of the participants, lit by a luminous screen. After a break:

The screen suddenly rose in the air and, suspended there, began to approach the participants in sequence and to light in detail the apparitions of four faces which appeared consecutively. . . . The first observed apparition was formed shapelessly, as if out of a piece of white fabric in which the eyes and the nose were irregularly located, and thus barely resembled a human face. When those present demanded a clearer face, one immediately appeared, better formed but giving the impression of a cardboard cut-out. The upper part of this face was motionless and, on the lower part of the face, one could clearly see a thin red mouth and the tip of the tongue sticking out and moving quickly across. The third face seemed to be Chinese, similar to the two previous faces. One could see the slanting eyes and abundant black moustache, but it did not at all look like a living human face. . . . The fourth face, a woman's face, illuminating itself with the screen held by a hand invisible to those present, approached each participant when requested, as did previous ones. Some participants had the impression that the face kept changing. First it was the face of an older woman, then suddenly it became young. . . . (Weaver 2015:74–75)

Guided by experience, Kluski's sitters and investigators came to accept the idea that the medium's and their own thoughts and expectations were closely involved in shaping the phenomena. Once you adopt this as a hypothesis, it is no longer surprising that there are different degrees of realism in the "mental tableaux" that are produced. This also accounts for another objection to regarding the apparitions as genuine—the fact that they seem to breathe, have a heartbeat, and even tummy rumblings. I appreciate that it is difficult not to jump straight to the conclusion that

living accomplices must have been present, and it would take another book and plenty more translation work to demonstrate why this explanation truly will not do.¹ But while much of what people experience is visual or kinetic, olfactory and auditory effects often accompany materializations (something not unique to Kluski's séances), as, for example, the smell of rotting flesh accompanying an apparition of a wounded soldier. What is experienced relates quite closely to the mood created by the participants.

The varying "realism" of the phenomena can also serve to explain why the photographs of the apparitions "look artificial" (Mörck 2015:509). They undoubtedly do, and it would be surprising if anyone set out to fool the public by presenting them as evidence of the paranormal instead of using convincing fakes. Photographs of all of Kluski's apparitions are widely available online, as well as having appeared in print in various publications, and in my book I only included one as an example. However, I now realize that while the photographs are widely available, the crucial information, i.e. the conditions under which they were taken, is not. Yet this is the only way to assess the genuineness (or otherwise) of the material, regardless of our expectations of what apparitions should look like.²

Attempts at photography were clustered around the early and somewhat chaotic period of Kluski's mediumship, before the sitters evolved a way of "supporting" the phenomena by focusing on them. According to Norbert Okołowicz, on whose book I based my account (Okołowicz 1926), 15 photographs were taken, of which 13 were successful and 12 of which were reproduced in his book. Ten of the "apparition" photographs were taken during six sittings between 30 August 1919 and 25 December 1919, and two were taken on 29 September 1921, in the presence of Gustave Geley and Count du Bourg de Bozas during their visit to Warsaw.

One of the explanations for this clustering is that Kluski's séances evolved from ones that were highly kinetic and noisy toward ones with more structure, more light displays, and self-lighting apparitions. Linked to this, his trance states became longer and deeper. When photographs were attempted, Kluski tried to stay awake to avoid the shock of the magnesium flash. He found this increasingly difficult, as well as very exhausting, and it also made the phenomena poorer, acting as a disincentive to all concerned.

Okołowicz provides detailed descriptions of the sittings when photographs were attempted. On such occasions the participants were seated in a semicircle, facing the camera. We are given a description of the equipment and the procedure, the identity of the photographer (not always the same), and a list of participants (not the same individuals at every séance) who then signed the report. The film was usually developed immediately after the séance, in the presence of witnesses. All the photographs can be

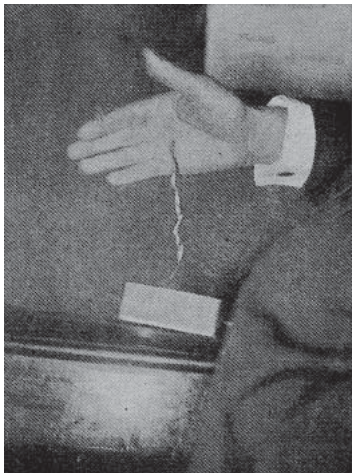


Figure 1. Photograph of a Kluski apparition.

related to specific detailed reports, which seem to assume that the information and the signatures provide sufficient evidence of their veracity.

However, the questions of what we are seeing in the photographs, and was there anything physically there, remain unanswered. A very clear example of this ontological puzzle is provided by a photograph taken during a simple, well-controlled experiment (Weaver 2015:68–69). In September 1923, in the presence of Kluski, Count de Bozas from France, Norbert Okołowicz, and one other experimenter (Stanisław Jelski), an attempt was made to discover whether the medium could “close the circuit,” i.e.

influence a galvanometer by holding a connector in one hand and holding his other hand above the other connector (about 15 cm) (Figure 1). One experimenter observed the galvanometer, another took photographs, while the third experimenter stayed with the medium, who sat at a table some 4 meters away. The photograph was taken when the needle of the galvanometer moved. Count de Bozas believed that what they photographed was the “ectoplasmic fluid” radiated by the medium and responsible for the séance phenomena. Kluski was very interested in this idea and what such a fluid might look like. According to Okołowicz, the ribbon-like effect in the photograph was much more likely to be a materialization of Kluski’s mental image of what he imagined this experimenter expected to see, since such effects were never observed when Kluski interacted with electrical equipment in séances or in other experiments. This implies that the simple logical assumption that the photographs of apparitions look artificial because they are in their early stage of formation is also inadequate as an explanation of this aspect of the Kluski enigma.

Finally, Mörck also quotes a letter dated 13 May 1933 from “the veteran psychical researcher Everard Feilding” to Hereward Carrington. In it, Feilding says that he and his wife had been at a séance with Kluski “. . . which seemed to us as so ridiculously fraudulent that we found it extremely difficult to believe in the earlier reports on the man” (Mörck 2015:510).

Feilding’s note (it is hardly a letter) does not give any dates for the alleged sittings, nor any evidence for his claim; however, the evidence which is available leads me to think that he must have used Kluski’s name

in error, having some other medium in mind.³ The issue would hardly be worth pursuing except for the high probability that this one unsupported statement will come to be regarded as based in fact.

There are a number of problems with Feilding's note. Firstly, according to Okołowicz, Feilding was among more than 100 participants in the séances included in the book who were sent a questionnaire asking for their comments and impressions in 1925. There were 15 responses from foreign participants, 7 of them quoted because of the important additional details about the sittings, the others summed up as confirming the authenticity of the reports. It is impossible to say whether Feilding was among the other respondents, but it does mean that he witnessed the phenomena much earlier than 1933 (Okołowicz describes him as Secretary of the British Society for Psychical Research, from which post Feilding resigned in 1920). In this context, the reference to the "earlier reports on the man" makes no sense, implying as it does that this was Feilding's source of information, and not his own experience.

Secondly, while Kluski continued to give occasional sittings for special guests and special reasons, the regular séances came to an end long before 1933, something for which he was reproached both by foreign and local researchers.⁴

There are good reasons why regular sittings came to an end in the late 1920s. The year 1926 was the end of an era; the euphoria and confidence of Poland's early years of independence gave way to disillusion and conflict when the leader of the volunteer army who won that independence reached for power over and above the democratic institutions that were slowly being established. Some of his comrades and associates stayed loyal to him, others recoiled and retreated from public life. Many of Kluski's friends and sitters would have been affected by this split (Norbert Okołowicz retired and moved away from Warsaw in 1928), and this may well have dissipated the mood in which the research was initially undertaken.

It seems to me that to make sense of Kluski you **have** to look at him in a wider context. The story then is one about a man of integrity, with an established social position and deeply held religious views, who accidentally discovers in his middle age that, under special circumstances, very strange things happen to him and around him which are of great interest to science. He and his friends, Polish psychical researchers among them, enthusiastically investigate his "mediumship" in the cause of science. The man is prepared to go along with this investigation in spite of the damage it does to his health, but, gradually, he becomes disillusioned as he realizes that the incessant demand for paraffin gloves and apparitions does not result in greater understanding. His mediumship reflects his feelings:

The apparitions increasingly reflect his own interpretation of his gift,⁵ the spiritual, religious aspect of his psyche: There are luminous crosses, priests, elevated beings. He gives up producing the meaningless physical manifestations, especially since his social circle is disrupted, but continues with automatic writing, which, unlike the paraffin gloves, has a meaning. However, he still remains uneasy about participating in what his religion regards with suspicion, and gives up these sessions as well when instructed to do so by his father confessor.

As a rule, discussions of mediumship tend to be one-dimensional, with the medium seen primarily as an instrument for producing phenomena, genuine or otherwise. Very little effort is made to see the medium as a person, existing in a particular social and cultural context at a particular time. In the case of Kluski, this means that one is likely to miss just about everything that is relevant to the phenomena he produced—and yet his story seems to point the way toward bolder hypotheses, which might take the subject of physical mediumship beyond going around in circles of partial explanations that can never encompass the whole picture.

Notes

- ¹ At the end of his book, Okołowicz includes comments by a variety of sitters provided in response to his questionnaire. Some of them can be correlated with the “official” reports, and the additional details of people’s individual experiences make it clear that accomplices will not do as an explanation, if only because of the degree of visibility when the apparitions illuminate themselves with their own light. There are also details such as someone moving suddenly forward toward the end of a séance and hitting his face on a soda siphon levitating above the table; according to that witness, the impact would have knocked it out of the hand of anyone holding it (Okołowicz 1926:567).
- ² For a discussion of our reactions to mind-boggling phenomena of materialization generally, and photographs in particular, see Stephen Braude’s *The Limits of Influence* (Braude 1986:144–161).
- ³ The person who springs to mind is Jan Guzik, who was famous for his cheating throughout Warsaw and whom Western researchers often mentioned in the same breath as Kluski; Oliver Lodge (Lodge 1924) describes Kluski as a manual worker who did not accept remuneration, thus conflating Kluski with Jan (not Jean!) Guzik and providing misinformation about both. Guzik died in 1928 but we do not have any dates for Feilding’s supposed sittings.
- ⁴ Both Eugene Osty (Geley’s successor at Institut Métapsychique International) in 1928 (letter published in *Zagadnienia Metapsychiczne* 19–20,

1928), and a well-informed psychical research supplement to a Polish daily paper in 1932 (*Ilustrowany Kurjer Codzienny*, 21 June 1932), expressed profound regret at Kluski's withdrawal from mediumship. Osty was a frequent visitor to Warsaw in the 1920s and 1930s, collaborating closely with Polish researchers on experiments with the clairvoyant Stefan Ossowiecki who, like the researchers, was also a friend of Kluski. This lends credence to the report, which I owe to the contemporary French researcher Michel Granger, that Osty participated in a spectacular séance with Kluski in 1933. That report, however, is a second-hand narrative (*Jean Labadié: Aux Frontières de l'au-delà; Choses Vécues*, Paris: Editions Bernard Grasset, 1939, pp. 113–116) for which confirmation is not at present available.

- ⁵ We know next to nothing about how Kluski interpreted his gift, but on one occasion his friend and colleague Boy-Żeleński mentioned that Kluski was inclined to think the spirit hypothesis the most likely one (Sołowianiuk 2014:149).

ZOFIA WEAVER

zofiewe@ntlworld.com

References Cited

- Bottazzi, F. (1909/2011). *Mediumistic Phenomena*. Princeton, New Jersey: ICRL Press.
- Braude, S. E. (1986). *The Limits of Influence*. New York/London: Routledge and Kegan Paul.
- Carrington, H. (1907). *The Physical Phenomena of Spiritualism Fraudulent and Genuine*. Boston: H. B. Turner & Co.
- Lodge, O. (1924). In Memoriam—Gustave Geley. *Proceedings of the Society for Psychical Research*, 34:208.
- Okołowicz, N. (1926). *Wspomnienia z seansów z medium Frankiem Kluskim*. [Reminiscences of Sittings with the Medium Franek Kluski]. Warszawa: Książnica-Atlas.
- Mörck, N. C. (2015). Other Realities? The Enigma of Franek Kluski's Mediumship by Zofia Weaver [Essay Book Review]. *Journal of Scientific Exploration*, 3:507–510.
- Sołowianiuk, P. (2014). *Jasnowidz w Salonie* [Clairvoyant in the Drawing Room]. Warszawa: Iskry.
- Weaver, Z. (2015). *Other Realities: The Enigma of Franek Kluski's Mediumship*. Hove, UK: White Crow Books.

LETTER TO THE EDITOR

A Recent Instance of Psi Censorship in Psychological Science?

Cardena (2015) has provided an important and timely service by voicing his concerns about past and present censorship in science in general, and of psi in particular. Coincidentally, I had just experienced an apparent instance of censorship in *Psychological Science*. Thanks to Cardena propitiously sharing this article with his peers, I was inspired to write this brief Letter to the Editor and summarize the circumstances of my recent experience with the hope that this kind of suppressive practice can be addressed more openly. At some point, mainstream science should own up to this unfair censoring tactic concerning challenging and controversial research in science in general and psi research in particular.

What would you conclude from the following?

1. You submitted a multi-blinded article involving claimant evidential mediums to a major journal, and you explicitly acknowledged the innovative and controversial nature of the research.
2. The editor wrote back and said “*I do not perceive your evidence as persuasive.*” No explanation was provided. The manuscript was rejected by the editor, and therefore was not sent out for extended reviewer comments.
3. You wrote back to the editor and indicated that this terse sentence was subjective and vague. You requested that the editor provide a brief paragraph or two explaining how he reached this decision.
4. The editor wrote back and said no. He stated he would not provide an “*extended explanation.*” He said this was his choice about how he would “*invest his limited time.*”
5. You wrote back to the editor explaining your history of prior positive experiences in working with editors at the journal *Science*. You requested that since he was this busy, that he reconsider sending the paper out for extended reviews which could confirm (or disconfirm) his seemingly vague subjective impressions.
6. The editor wrote back and said “*Sorry, Dr. Schwartz, but no.*”

7. You wrote back to the editor and asked him if he was sure about this decision, explaining that some people might interpret this as evidence of bias or prejudice about the research area.
8. The editor made the choice to not respond to this email.

Is there reason to question the editor's motive in this instance, especially since *Psychological Science* has historically never published any research involving psi?

The issue here is not whether the design of this specific experiment allowed a completely unambiguous conclusion. What matters is whether *Psychological Science* evidenced apparent content bias in its consideration of this research (a detailed account is available from the author upon request).

Journals such as the *Journal of Scientific Exploration* and *EXPLORE: The Journal of Science and Healing* were created to provide a more open forum for exploratory and visionary science. The new website <http://www.opensciences.org>, formed in response to the 2014 International Summit for Post-Materialist Science, Spirituality, and Society co-organized by Gary Schwartz and Mario Beauregard from the University of Arizona and Lisa Miller from Columbia University (see Beauregard, Schwartz, Miller, et al. 2014), is attempting to foster the kind of scientific openness and integrity expressed by Cardena (2015).

Maybe it is time for scientists experiencing potential censorship to come forward and share the details of what has transpired in their specific situations. Though science is ultimately a self-correcting process, humanity suffers when scientists are given free rein to base the sharing of theories and research entirely on their personal perceptions of persuasiveness.

GARY E. SCHWARTZ
The University of Arizona
gschwart@u.arizona.edu

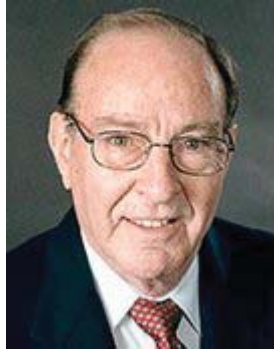
References Cited

- Cardena, E. (2015). The unbearable fear of psi: On scientific suppression in the 21st Century. *Journal of Scientific Exploration*, 29(4):601–620.
- Beauregard, B., Schwartz, G. E., Miller, L., Dossey, L., Moreira-Almeida, A., Schlitz, M., Sheldrake, R., & Tart, C. (2014). Manifesto for a post-materialist science. *EXPLORE: The Journal of Science and Healing*, 10(5):272–274.

OBITUARY

Edgar D. Mitchell, 1930–2016

On February 4, 2016, America lost a great hero: Captain Edgar Dean Mitchell, Ph.D., a member of an extremely elite club of men who walked on the Moon. Dr. Mitchell had been a member of SSE and a personal friend to many of us, and an inspiration to all who knew of his momentous achievements.



Transfixed, on February 5, 1971, the entire world watched with bated breath as Apollo 14 astronaut and command pilot Edgar Mitchell successfully landed the LEM, Antares, on the surface of the Moon near the Fra Mauro highlands. Given the near-fatal catastrophe that had befallen Apollo 13, their renaissance venture into space was a testament to human courage and determination. With fellow astronaut Alan Shepard, he conducted two EVAs (Extravehicular activities, as Moonwalks were called) and accomplished a series of records. They included the first color television transmissions from the Moon and the collection of the largest lunar rock sample payload (42.6 kg). Mitchell and Shepard had the longest lunar surface stay time (33 hours), the longest lunar surface EVA (9 hours and 23 minutes), and also traversed the greatest distance on foot on the Moon.

Edgar D. Mitchell was born on September 17, 1930, in Hereford, Texas, and considered Artesia, New Mexico, located just south of Roswell, his hometown. He graduated with a B.S. in Industrial Management from Carnegie Institute of Technology (later Carnegie-Mellon University) in 1952, a B.S. in Aeronautics from the U.S. Naval Postgraduate School in 1961, and a Doctorate in Aeronautics and Astronautics from the Massachusetts Institute of Technology in 1964.

In 1953, Mitchell joined the U.S. Navy, where he attended Officer Candidate School and flight school and became qualified as a carrier pilot. He then flew A3D Skywarrior aircraft in a Heavy Attack Squadron from the aircraft carriers *USS Bon Homme Richard* and *USS Ticonderoga* while serving on deployments in the Pacific region. In 1959 he transferred to aircraft development. From 1964 to 1965 he served as Chief of the Project

Management Division of the Navy Field Office for Manned Orbiting Laboratory, then a highly classified program for the development of crewed space reconnaissance capabilities and which spawned several astronauts. Mitchell then served as an instructor in advanced mathematics and navigation theory for astronaut candidates at the U.S. Air Force Aerospace Research Pilot School in preparation for astronaut duties. In 1966 he received his certification as a test pilot and shortly thereafter he was assigned to NASA, joining the Apollo Program.

Few people today nor then ever understood the true significance of the Apollo Program. Consuming more than 4% of the national budget, that critical project established America's technological dominance in the world, and Mitchell was a key member of that effort. Prior to the Apollo 14 mission he was designated as backup Lunar Module Pilot for Apollo 10, and after his return was the backup pilot for Apollo 16. He retired from NASA and the U.S. Navy in 1972.

There is little doubt that being the sixth man to walk the lunar surface was his crowning exploit, but far from his only one. Ever inquisitive, Mitchell spent the rest of his life pushing the boundaries of human knowledge. Based on his quenchless thirst for knowledge, he conducted an ESP experiment during the epic Apollo 14 flight. At prearranged times (though they were actually off due to launch delays), Mitchell attempted to mentally contact Chicago psychic Olof Jonsson using a numbering system based on ESP cards (then known as Zener cards). The results were controversial but sufficient to encourage further interest. A few years later I met Jonsson and had him demonstrate the procedure for me. He was impressive. It is significant to note that Mitchell felt compelled to state that the experiments were not authorized by NASA and were conducted during periods designated as personal sleep time.

On his terrestrial return, Mitchell continued his exploration into the fundamental properties of human consciousness. An encounter with a Tibetan Buddhist, Norbu Chen, yielded a firsthand demonstration of spontaneous healing when his mother's eyesight was restored. From Andrija Puharich, Mitchell learned about a young Israeli with reportedly remarkable skills named Uri Geller. In a quest for hard evidence, they arranged to bring him to SRI International (then known as Stanford Research Institute) for scientific testing with Hal Puthoff and Russell Targ. The phenomenal experimental results are well-documented. There also were, however, extemporaneous events including psychokinesis and apports that I have heard attested to from all participants. Some were dramatic and defy any traditional scientific explanation.

As a result of those mystical experiences, in 1973 he founded the

Institute of Noetic Sciences (IONS), which has as its mission “Broadening our knowledge of the nature and potentials of mind and consciousness and applying that knowledge to enhancing human well-being and the quality of life on the planet.” As a result of his efforts, IONS has excelled with numerous pioneering experiments in consciousness. At one time, IONS had 120,000 members.

To his credit, Edgar Mitchell was one of the few astronauts to talk openly about the transformative experience he encountered on his lunar voyage. The understanding of the true nature of consciousness was thereafter at the forefront of his efforts. Remembering his spiritual encounter, he once stated that he “was experiencing the primordial energy of the universe, the primal and subtlest energies.”

Not surprisingly, he became a controversial figure to many people in NASA, especially when he embraced the UFO phenomena. Mitchell was always careful to note that none of the information he had about the topic came from his NASA assignments, nor had he experienced any firsthand sightings. Rather, his position was generated from trusted people who confided their experiences to him.

We at the SSE owe Edgar Mitchell an immense debt of gratitude for his willingness and courage to stand up and push the frontiers of science based solely on his convictions of the spiritual component of all humans. In his book *The Way of the Explorer*, Mitchell noted, “Earth is our cradle, but not our final destiny. The universe itself is our larger home.” He ends the book with:

All I can suggest to the mystic and theologian is that our gods have been too small. They fill the universe. And to the scientist, all I can say is that gods do exist. They are the eternal, connected, and aware Self experienced by all intelligent beings.

JOHN ALEXANDER

OBITUARY

Richard G. (Dick) Shoup, 1943–2015

Richard (Dick) Shoup was as multi-talented as he was multi-faceted. He loved playing trombone with his jazz group, Daddios, and will be remembered by his signature piece, *Don't worry 'bout me*. If there ever was an encompassing statement about Dick as a warm, loving man with a dry sense of humor, that would be it.



Dick was farsighted, looking for potential radical breakthroughs often long before others considered them. His Ph.D. topic is a great example. At the time of his Ph.D. (1970), nearly all computers used the von Neumann stored program model with serial execution of instructions and a common memory for data and software. The advantage of this structure is its generality: Any problem can be solved within the framework merely by changing the instructions or software with no change to the hardware. But what if the hardware itself could be adapted for each problem? Dick explored this problem and helped develop FPGAs (Field Programmable Gate Arrays). FPGAs are now widely used in computers and consumer electronics. Dick was also an early developer of computer imaging software. He developed the SuperPaint program, the first successful computer graphics system. SuperPaint was also the origin of today's ubiquitous use of CGI (computer-generated imagery) animation in television and movies. He was recognized by the Association for Computing Machinery for winning an Emmy, an Academy Award, and a Computer Graphics Achievement Award.

Working with Tom Etter, Dick developed a modified version of quantum mechanics (QM) called link theory. After Etter's death in 2013, Dick went on to develop these ideas further. A little background will help understand what he proposed.

The known laws of physics are nearly all invariant under time reversal, the exception being the standard version of QM. Although there are many interpretations of the meaning of QM, the underlying mathematics is well-established and agreed upon and constitutes a theory that has been experimentally tested to extreme accuracy in numerous experiments. This mathematics splits naturally into two parts: the evolution in time of a quantity known as the wave function, and its so-called "collapse" when

a measurement is made. The changes in the wave function with time are described by the Schrödinger equation, a second-order differential equation that is time-symmetric, like all of the other equations in fundamental physics (the field equations of general relativity for instance).

It is worth noting that, just as in other physical laws that are described by differential equations, one needs to integrate the differential equation to make forecasts, and this process requires that one inputs numerical constants, known as boundary conditions, into the calculation. For example, the equations that describe the path of a ball thrown across a field also are differential equations, and in order to calculate the path of a particular ball one needs to know the boundary conditions, in this case the initial position and velocity of the ball when thrown. Note that in making forecasts of where the ball is at any instant, these boundary conditions refer to the past. This brief discussion of differential equations and the necessity for boundary conditions, usually in the past, in order to arrive at testable forecasts, is crucial to understanding Dick's ideas.

The second part of standard QM, the collapse, references the Born Rule by means of which the probabilities of the possible measurements are calculated. This process is not time-symmetric and also introduces an apparently inevitable randomness into our measurements. The randomness is integral to the theory because the Born Rule only gives the probabilities of the experimental outcomes, not the individual outcome of any particular experiment. Einstein's strong dislike of this latter process gave rise to his famous remark that "God does not play dice." Shoup and Etter sought to remove the collapse process from QM and thus recover a fully time-symmetric version of the theory in line with the other fundamental equations of physics. To accomplish this, they considered that quantum processes were constrained by boundary conditions in both the past and the future.

The incorporation of future boundary conditions, or constraints, entails that the future state of affairs must influence current measurements, at least in some situations. Clearly in the macroscopic world that we inhabit we observe forward causality everywhere, but we are hard-pressed to come up with observations that require backward causation, or retrocausality, for their explanation. But Dick argued that there are observed macroscopic events requiring future boundary conditions to be included in any tenable theory of them and that these events are the subject of parapsychology.

Since in Dick's theoretical framework the Born Rule is eliminated, the apparent randomness of QM-controlled events is also removed. How then does his account explain the apparent randomness of phenomena such as radioactive decay or photons passing through a beam splitter? Dick argued that the boundary conditions on these processes are in both their past

and future. To put it another way, the outcome of a particular apparently random event is constrained by both past and future states of the world. In particular, the future constraints are unknown, and this lack of knowledge is responsible for the observed random behavior. Therefore, Dick viewed the apparent randomness of the micro-scale events as being due to insufficient knowledge rather than being an intrinsic feature of reality, which is the standard QM view.

Dick noted that precognition—a psychic ability to access non-inferentially future events—experiments involved correlations between two states of the world, the subject's information and the randomly chosen stimulus or target in the subject's future. He observed that both these processes involve apparent randomness, in the case of the stimulus selection by design, and in the case of the subject by possible QM-based processes in the subject's brain. Therefore, in his version of QM, both the subject's information and the randomly chosen target are constrained by past and future states of the world. Thus precognition becomes neither seeing the future nor causing it through psychokinesis, but rather a time-symmetric interlocking between past and future events. Thus we see that there are three classes of models of precognition: as for-seeing, as for-controlling, and as Dicks's time-symmetric constraint.

An important question is whether precognition is merely a correlation between subject information and target or whether it can be used for signaling, for sending a freely chosen message from future to past. All three models have something to say on this.

The for-seeing model implies that a future event can retro-cause a current mental state (for instance of a subject in a precognition experiment). It implies that the choice of the future stimulus/target affects the subject's current mentations. Therefore, by manipulating the future stimulus/target to encode a message, we could detect what that manipulation was before it occurs. Therefore, signaling backwards in time is a consequence of this model. In fact, parapsychologists have developed a theory, the Observational Theory, which makes this explicit. This idea has been developed into a protocol called associative remote viewing (ARV), which promises to provide future information with high confidence levels. As one might expect, attempts have been made to apply ARV to practical problems such as forecasting the stock market. Results have been mixed, but it is clear no one has (publicly) announced that they have become wealthy through this methodology.

The for-causing, or PK, model of precognition eliminates retro-causation, and hence backwards-in-time signaling. But it seems to imply that practical applications like ARV should be possible since apparently a precognized event is actually predetermined and thus one could act on

that knowledge of a certain, or at least probabilistically constrained, future event, such as a stock market move.

Dicks's ideas on the problem of signaling to the past are complex. He argues:

If the message (a biased quantum measurement) had been in fact received in the past, it would not have remained open, and so there would be no freedom in the future to send it. Such a quantum message can be sent into the past, but only if it hasn't been read there, since this would destroy the message.

But QM does allow for correlations between current measurements and future states, and Dick writes:

But correlation can give the appearance of information transfer, and even precognition, in cases where two supposedly random sources are being compared and the result is biased by constraints placed by the future on that outcome.

And when considering parapsychological precognition experiments, Dick goes on to say:

Whenever a quantum-random source is involved, as it is in most parapsychology experiments (e.g., an RNG target generator that uses a quantum process to produce classical bits), the present theory posits that future conditions determine in part the generator's classical 'output,' and the target for that experimental trial. Thus there is an opportunity—in fact, a requirement—for backwards influence from the trial results and all that is connected to them. In practice, this evidently includes the experimenter (via his interactions with the data) as well as other dependencies.

Thus, Dick's theoretical framework provides a possible explanation for the experimenter and analyzer effects that have been posited for parapsychological experiments as well as suggesting that trial-level feedback to the subject is an important component for success. His model may well be developed in the future into a fully quantified and testable theory of these anomalous phenomena.

A short piece such as this cannot begin to capture such a diverse and talented man as Dick. His accomplishments will be with us all for a long time to come.

Travel well, Dick.

JAMES SPOTTISWOODE

BOOK REVIEW

Testing Prayer: Science and Healing by Candy Gunther Brown. Cambridge, MA: Harvard University Press, 2012. 384 pp. with index. \$25 (hardcover). ISBN: 978-0674064676.

On the evening of September 23, 2003, Francis, a black South African man who was hosting a regional conference at a Pentecostal church, was accosted by four men who told him, “We want to kill you today.” They beat him severely and fled. Francis was taken by car to a local hospital where he was pronounced dead at 11:00 p.m. He was taken to the hospital morgue. Everyone at the church continued to pray for him, however, as did a handful of Christians who gathered around his body in the morgue. At 12:15 a.m., Francis began to breathe. Although his eyes and lips were swollen shut, he managed to croak out two words: “Forgive them.”

The next day, heeding Francis’s words, the church refused to press charges, even when one of the assailants was apprehended. The police were chagrined, convinced that this would encourage more crime. At about the same time, the hospital called the church, asking someone to come pick up Francis immediately. His wounds had inexplicably healed completely. There was no longer any evidence of any trauma, so there was no reason for him to continue taking up space in the hospital. Francis went directly to the police station to make sure his attacker was released. The police denied his request, saying, “How do you forgive someone who has beaten you to death like this?” Finally, they complied. Francis hugged his assailant and told him God loved him. The man believed himself to be a murderer, but as a result of Francis’s kindness and forgiveness he converted to Christianity and became an active evangelist (pp. 252–253).

In 1985, Mahesh Chavda, a healing evangelist, was holding services in Kinshasa, the capital of Zaire, as it was then called. One individual attending the ceremonies was Mulamba Manikai, a man whose six-year-old son had been pronounced dead at 4 a.m. The death certificate specified cerebral malaria as the cause of death. During the religious service, Chavda summoned Manikai and prayed for his son. The man then ran back to the hospital where his brother, Kuamba, had maintained a vigil. Kuamba reported, “It was midday. I was sitting there holding the body of my brother’s son in my arms. Suddenly, I felt his body move. Then he sneezed. He sat up in my arms and asked for something to eat.” Six years later he was still doing well (pp. 259–260).

These narratives are from *Testing Prayer: Science and Healing*, authored by Candy Gunther Brown (2012). Brown is Associate Professor in the Department of Religious Studies, and Adjunct Associate Professor in the American Studies Program, at Indiana University, Bloomington. *Testing Prayer* abounds with dramatic healings following prayer, which, Brown accurately states, is “brimming with surprising twists and turns” that keep a reader engaged. She’s not kidding. The healing narratives range from common ailments such as asthma to lethal diseases that disappear within hours or days. Included are individuals such as those above, who regained vital signs and returned to normal life.

I know, I know. Vital signs in moribund patients can be difficult to detect. Medical personnel make grievous mistakes. Medical documents can be faked. Charlatans masquerade as healers. People often see what they want to see; they are suckers for the miraculous and are easily bamboozled. Spontaneous remissions occur in probably all diseases. Why pay attention to Brown’s reports? Why take healing prayer seriously? (Dossey & Hufford 2005).

Brown is keenly aware of the limitations of people’s stories and the evidential requirements of science. She acknowledges the possibility of mistaken reportage throughout her book. But in spite of these mine fields, what emerges in *Testing Prayer* is a rich, scholarly investigation of a key question: Can scientific tests prove or disprove the healing power of prayer? Her answer to this question is a restrained “no, but.” She states, “Empirical research can reveal much about prayer for healing” (p. 20). [However,] “even if researchers employ a range of methodological perspectives and explanatory models, there are inherent limits to what scientific testing can prove” (p. 10).

Brown realizes that scientists have no “god meters” capable of indicating divine intervention. As a consequence, “Empirical research can measure only certain effects of religious practices and illumine how religious practitioners—as well as scientists—construct their understandings of these practices. Although this book will argue that it is impossible to present definitive scientific proof of the healing power of prayer, the same could be said of many important questions in science” (pp. 10–11).

Skeptics outside of medicine, as well as medical insiders, customarily dismiss healings following prayer with the hand-waiving term “spontaneous remission.” This ubiquitous expression has almost no explanatory power and amounts to saying, “What happens, happens.” Brown attempts to see deeper into these events. She stands in the tradition of Sir William Osler (1849–1919), widely regarded as the father of scientific medicine in the Western world. A century ago Osler observed:

We doctors overlook our own faith cures. Faith in gods cures one . . . faith in little pills, another . . . faith in hypnotic suggestion, a third. Faith has its limitations, but such as we find it, faith is a precious commodity, without which we should be very badly off. (Osler 1901)

Nothing in life is more wonderful than faith—the one great moving force which we can neither weigh in the balance nor test in the crucible. . . . Faith has always been an essential factor in the practice of medicine. . . . Not a psychologist but an ordinary clinical physician concerned in making strong the weak in mind and body, the whole subject is of intense interest to me. (Osler 1910:1470–1472)

A kindred no-nonsense pioneer preceding Brown's explorations was physician Lewis Thomas (1913–1993), who for years directed the research program at Memorial Sloan Kettering Cancer Center. Thomas believed that even if spectacular, anomalous healings were merely spontaneous remissions, they nonetheless offer a huge opportunity for medical science and should not be ignored. He observed:

The rare but spectacular phenomenon of spontaneous remission of cancer patients persists in the annals of medicine, totally inexplicable but real, a hypothetical straw to clutch in the search for cure. . . . It is a fascinating mystery, but at the same time a solid basis for hope in the future: If several hundred patients have succeeded in doing this sort of thing, eliminating vast numbers of malignant cells on their own, the possibility that medicine can learn to accomplish the same thing at will is surely within the reach of imagining. (Thomas 1983:205)

Brown's focus in *Testing Prayer* is on *proximal* intercessory prayer or PIP, prayer that is offered in the presence of the individual in need. Most prayer-and-healing studies conducted since the 1980s have investigated the effects of *distant* intercessory prayer or DIP, because it is easier to conduct randomized, controlled trials using distant rather than proximal prayers. However, there is enormous artificiality in DIP, because intercessors are usually blind to the objects of their prayer except for perhaps a first name and the individual's diagnosis. In contrast, PIP is more "natural." For example, people commonly say they pray for their loved ones. This implies they know who they are, they care deeply for them, and there is no uncertainty on the part of the recipients of prayer as to whether or not they are being prayed for. Moreover, people commonly pray for their loved ones in their presence—i.e. proximally. If PIP introduces methodological issues such as placebo effects and the lack of controls, it at least preserves the *ecological validity* of prayer, how it is used in real life.

Chapter 1 of *Testing Prayer* describes events called the Toronto Blessing, which originated in protracted religious meetings from 1994 to 2006 in a mid-sized Pentecostal church in Ontario, Canada, and how these happenings spawned a worldwide web of pentecostal networks emphasizing healing practices.

Here we confront the big bugaboo of *Testing Prayer*: Brown's emphasis on prayer-based healing in a particular religion. Why just *pentecostal* healing? This exclusive focus will annoy many readers. Some will find it decidedly off-putting. This requires an explanatory detour.

My online dictionary defines "Pentecostal" as "of or relating to Pentecost; of, relating to, or denoting any of a number of Christian movements and individuals emphasizing baptism in the Holy Spirit, evidenced by speaking in tongues, prophecy, healing, and exorcism. [with reference to the baptism in the Holy Spirit at the first Pentecost (Acts 2: 9–11).]" Brown adds, "*Pentecostal* is an umbrella term that encompasses Pentecostal and Charismatic Christians. . . ." (p. 9).

But why focus only on pentecostals? Brown explains, "The global pentecostal networks that emerged from Toronto offer a convenient laboratory, though by no means the only possible setting, for exploring the questions about prayer and science that drive this book. . . . The prevalence of expectant prayer for healing among Pentecostal and Charismatic Christians makes these groups a logical focus for exploring questions about prayer and healing" (pp. 9, 275–276).

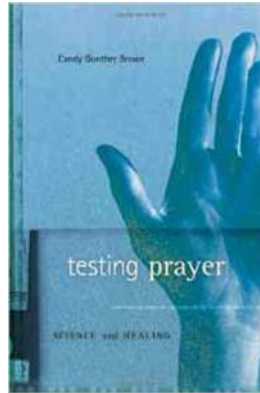
Another reason Brown focuses on pentecostals is their sheer numbers. They are simply handy. "From a handful of adherents at the turn of the twentieth century, pentecostals now account for more than a quarter of the world's 2 billion Christians. By one count, 80 million people in the United States—36 percent of the adult population—self-identify as pentecostals." Why the explosive growth? "The collective force of our research is that the single most significant factor that explains the growth of pentecostalism is the frequency of the perception among both new converts and long-time adherents that they have received divine healing" (pp. 13–14).

Another attractive feature for a researcher is that, worldwide, pentecostals are remarkably diverse. "Participants in such pentecostal networks . . . [transcend] markers of ethnicity, language, and social class, as healing prayer functions as a defining ritual" (p. 276).

So, as best I can tell, Brown focuses on pentecostalism in *Testing Prayer* for purely prudential reasons. There is little or no evidence that she is cheerleading or evangelizing for this or any other religion. In fact, she can be pointedly critical about her subject population. "The effects of globalization, including the globalization of pentecostal networks and

healing practices, are not uniformly benign” (p. 276).

In Chapter 2, “Why Are Biomedical Tests of Prayer Controversial?”, Brown states, “To ask the question of whether science can prove or disprove the healing power of prayer points toward the unparalleled cultural authority of ‘science’ in the modern Western world.” In discussing the torrent of objections lodged by some scientists against testing healing prayer, she charges, “[S]cientists do not always behave dispassionately but can be just as driven by doctrinaire philosophical and theological agendas as can adherents of religious communities” (pp. 276–277). This is my nomination for Understatement of the Year.



She rejects the skeptical contention that healing prayer necessarily requires divine or supernatural intervention, saying, “Although the mechanisms by which prayer may affect health are so far poorly understood, a growing body of empirical evidence points toward plausible physiological and psychosocial mechanisms by which thoughts, emotions, and social interactions influence health—without resorting to ‘supernatural’ explanations” (p. 277).

Brown’s discussion of the mouth-foaming objections of many skeptics is withering, particularly when she shows how opponents of prayer-and-healing research often employ theological reasoning to condemn the theological implications they perceive in this research (p. 84).

Brown’s survey of the history of empirical approaches to prayer is outstanding. She nimbly reviews five centuries of shifting attitudes toward prayer research, and how scientific naturalists and theologians have sometimes changed positions on the issue of whether prayer should be subjected to scientific tests. Her survey includes specific prayer studies from the early nineteenth century onward, focusing on the mid-twentieth century to the present. Her analysis is superb; I know of none better.

Brown also discusses the potential confounds of research in healing prayer. It is probably impossible to achieve pure control groups in a prayer experiment, because patients assigned to the control group may pray for themselves, or their loved ones may pray for them. (Healing experiments with animals presumably overcome this objection, as in the classic healing studies of Bernard Grad and the recent experiments of William Bengston.) Also problematic are *placebo effects*—improvements that occur for psychosomatic reasons because subjects believe they are receiving a

therapeutic intervention, regardless of whether that intervention has any intrinsic therapeutic value. *Empathy effects* are similar, resulting from the concern and attention expressed by a medical or religious healer. *Hawthorne effects* are short-term improvements resulting from the motivation evoked by the attention paid to subjects during a study, regardless of the nature of the experimental intervention. *Hold-back effects* result from the unconscious tendency of subjects being studied before and after an intervention to perform worse at first in order to demonstrate an improvement later. In *demand effects*, subjects may perform better during post-tests in order to meet the presumed expectation of those conducting the study. *Practice effects* are the tendency of subjects to perform tasks better when they have more experience, which can be gained during the course of a study (p. 96).

Chapter 3, “Are Healing Claims Documented?”, deals with the value and limitations of medical documentation in examining healing claims—X-rays, laboratory reports, doctors’ notes, etc. “Medical documents cannot prove that prayer actually accounts for a recovery or that a divine or other suprahuman agent or force is responsible,” Brown says, “or even that a condition has been permanently cured. Nor does the absence of incompleteness of medical documentation constitute evidence of the absence of healing.” Brown shows, however, how medical documents often support prayer healing. “Despite challenges of collecting medical records and the inherent limitations to what such records can reveal, data collected between the 1960s and 2011 do indicate that some, though not all, individuals attesting to religious healing exhibited medically surprising recoveries . . . including from metastasized cancers. This evidence does not, however, by itself explain these recoveries. There are cases in which the medical evidence reveals inflated and even fraudulent claims” (p. 279). Brown also shows how skeptical medical professionals sometimes refuse to acknowledge in their reports strong evidence that anomalous healing has happened following prayer. For example, one investigative committee of medical experts “dismissed as ‘functional’ the dramatic claim of healing from clubfoot—accompanied by a shortened leg and curvature of the spine—of one [woman] without interviewing her, her father, or her own doctor, who had concluded that the recovery was ‘miraculous’” (p. 103).

Chapter 4, “How Do Sufferers Perceive Healing Prayer?”, analyzes written survey data collected from pentecostal conference participants regarding their perceptions of illness and healing. “Demographic factors such as race, nationality, education, income, age, gender, and pentecostal identity did not predict healing needs, expectations, or experiences,” Brown reports. “Respondents were more likely to report healing of a physical than an emotional or spiritual problem; the most common problem noted was

pain.” Moreover, people were not more likely to report the healing of mild conditions of short duration than more severe problems (p. 280).

The failure of educational levels to predict healing contradicts the implications of some skeptics that dupes and the mentally unstable are more likely to be healed through prayer than the highly educated. This prejudice also permeates the history of placebo usage in medicine. It was long believed that placebos were more effective on the weak-minded (Kaptchuk 1998). As de Craen and colleagues report in their historical review of placebos, “The value of placebo was thought inversely related to the intelligence of the patient; the use of a medical ritual was more effective and necessary for ‘unintelligent, neurotic, or inadequate patients’” (de Craen, Kaptchuk, Tijssen, & Kleijnen 1999). Brown’s demographic analysis will hopefully help lay these prejudices to rest where healing prayer is concerned.

Chapter 5, “Can Health Outcomes of Prayer Be Measured?”, is chiefly devoted to Brown’s field experiment in Mozambique—its key features, its rationale, and its shortcomings.

I first came across Brown’s work when her 2010 pilot study was published in a peer-reviewed medical journal: “Study of the Therapeutic Effects of Proximal Intercessory Prayer (STEPP) on Auditory and Visual Impairments in Rural Mozambique” (Brown, Mory, Williams, & McClymond 2010). The publication of this experiment propelled Brown into national attention.

In brief, she and her colleagues prospectively evaluated a consecutive series of 24 Mozambican subjects (19 males, 5 females) reporting auditory (14 subjects) and/or visual (11 subjects) impairments. All the subjects underwent baseline testing of hearing and vision, then all of them received proximal intercessory prayer (PIP). None of the subjects wore hearing aids or corrective lenses. Improvement in both auditory ($p < 0.003$) and visual ($p < 0.02$) abilities was statistically significant following PIP. Generally, the greater the hearing or vision impairment pre-PIP, the greater the post-PIP improvement. The study was essentially replicated in an urban setting in Brazil.

Brown characterizes her experiment as a pilot study. “Pilot” is derived from the Latin and means to guide or steer. A pilot study, thus, is usually a small, preliminary study that suggests the potential for developing a new line of inquiry—in this case, into the clinical effects of proximal intercessory prayer. A storm of criticism erupted. Where were the controls? What about placebo responses? How accurate was the testing? Why so few subjects? The researchers responded by explaining that, in spite of the lack of a control group, the failure to control for possible confounds such as placebo effects, and the small number of subjects, they were nonetheless

following recommendations for pilot studies in a 1998 report, *Scientific Research on Spirituality and Health*, published by the National Institute for Healthcare Research (NIHR):

The first step is to conduct small, or pilot, studies to establish the feasibility and safety of the proposed intervention. Next, one might proceed to small, uncontrolled trials to establish efficacy as well as the size of the effects of the interventions. Then, individual-site (i.e. at a single hospital or clinic), controlled studies could be conducted, followed by large multi-site randomized, double-blind trials to examine the effectiveness of these interventions in the appropriate clinical settings. (p. 223)

Conceding the study's shortcomings, Brown and her research team insisted that they were simply testing whether specific effects could be found at all, which is a goal of all pilot studies.

An important issue for Brown and her colleagues was *ecological validity*, already mentioned—conducting the clinical study in its natural “religious and spiritual settings,” as recommended in the NIHR statement, as opposed to conducting it in a hospital, clinic, or laboratory.

Some of the sternest critics seemed not to have read the actual report. They suggested that the experiments relied on self-reports of improved hearing or vision, such as crude tests of counting raised fingers or responding to hand claps. This was not the case; the study evaluated subjects using standard hearing- and vision-testing equipment and procedures.

Certain critics implied that Mozambicans and/or Brazilians are inherently more susceptible than North Americans to the effects of suggestion and/or religious excitement. Brown shot back, “This proposition dangerously borders on racism and neocolonial cultural arrogance. It should not be assumed that Mozambicans or Brazilians are simply more suggestible than North Americans” (p. 229).

Within a week following publication of the PIP study, more than 200 news articles could be Googled, about 50 of them in languages other than English. While only about one percent of public responses to the study were negative, Brown found them to be “strikingly more ad hominem and dogmatic than substantive.” She and her research team discovered what many researchers in this field have known for decades: Experimental findings that challenge the ideology of materialism can be met with visceral denunciation. As Brown notes, “[One] zealous blogger offered to run me over with a car” (p. 3).

Chapter 6, “Do Healing Experiences Produce Lasting Effects?”, asks what if any lasting effects healing experiences may have on the individuals who claim them. Many of the narratives of individual subjects suggest

lasting effects are real. The effects on individuals are lasting in another way: The perceived healing experience generates ripple or snowball effects on other individuals who become aware of them, so that the healing effects “sometimes travel like waves of increasing magnitude across global . . . networks. . . .” (p. 274).

In the Conclusion, Brown reiterates, “Although science can never prove nor disprove the so-called healing power of prayer, empirical perspectives can reveal a great deal about prayer for healing . . . (p. 275). She ends on a practical note: “Perhaps the most obvious conclusion to draw from findings collected to date is that, regardless of what researchers have to say, people from around the world will continue to pray for healing and perceive healing, and many of them will do so in the context of expanding global pentecostal networks. Given this empirical fact, it seems prudent to draw on as many perspectives and methods as possible to understand the implications for how people will experience the twenty-first century world” (p. 291).

I consider *Testing Prayer* and Brown’s foray into prayer-and-healing research a courageous move. Standing up for even the *possibility* of healing effects from prayer is not the best way to advance one’s career in some quarters of academia. But Brown accomplishes her task gracefully, and she ends on an admirably parsimonious note in which she seems to say, “Here are the pros and cons of this controversial issue. Now you decide.”

In keeping with Brown’s recommendation to “draw on as many perspectives and methods as possible,” I would like to suggest a few.

Prayer healing can be viewed in a different framework than the one Brown uses. Many consciousness researchers invoke the concept of *healing intentionality*—intending, willing, or wishing for a healthy outcome for the person in need (Schwartz & Dossey 2012). This can be an attractive approach in Western cultures in which an increasing number of individuals say they are “spiritual but not religious.” Even those praying to the Christian (or any other) god are *also* intending that healing happens. Thus the concept of healing intentionality is capable of encompassing religion-based prayers as well as secular, non-religious attempts to heal (Dossey 2008).

Testing Prayer could be enriched by acknowledging the large database related to healing intentionality, such as the hundreds of studies involving humans and non-humans referred to as DMILS—*distant mental interaction with living systems*. These studies provide strong evidence that human intentions can influence a variety of biological systems, both proximally and at a distance. The DMILS research has clear implications for both DIP and PIP, since both involve *some* form of mental intention on the part of the intercessor (Dossey 2015).

Finally, I suggest that we are not as theory-poor as Brown implies as to how healing happens. While healing remains mysterious, consciousness researchers are moving beyond the “plausible physiological and psychosocial mechanisms” that she mentions in passing (p. 277).

It is time for researchers in prayer healing, as well as practitioners in modern medicine in general, to engage developments within quantum physics in an attempt to unravel the underlying mechanisms of healing. The quantum phenomena of nonlocality and entanglement are now known to apply not only to the subatomic world, but they also appear to operate in the biological arena where healing takes place. As physicist Vlatko Vedral reports in a seminal article in *Scientific American* (Vedral 2011):

Entanglement and nonlocality were originally believed to exist only in the subatomic world. *Now they have become an issue for biology, medicine and healing. . . .* The quintessential quantum effect, entanglement, can occur in large systems . . . including living organisms. . . . These effects are more pervasive than anyone ever suspected. They may operate in the cells of our body. . . . The entanglements are primary. (Vedral 2011:38–43) [italics added]

Evidence continues to mount for an intrinsic, distant, nonlocal connect-
edness that operates at a distance between whole humans, as well as at a distance between human cells in vitro (Achterberg, Cooke, Richards, Standish, Kozak, & Lake 2005, Tressoldi, Storm, & Radin 2010, Pizzi, Fantasia, Gelain, Rossetti, & Vescovi 2004, Farhadi, Forsyth, Banan, Sheikh, Engen, Fields, & Keshavarzian 2007, Chaban, Cho, Reid, & Norris 2013). As one group of researchers in this area states,

This [data] indicates that traditional cognitive and neuroscience models, which are largely based on classical physical concepts, are incomplete. We speculate that more comprehensive models will require new principles based on a more comprehensive physics. The current candidate is quantum mechanics. (Tressoldi, Storm, & Radin 2010:581–587)

Engaging these quantum-physical phenomena in healing is not necessarily antithetical to a religious perspective because as Brown concludes—rightly, in my view—science is incapable of disproving or proving whether a transcendent entity may underlie any healing event. In other words, it is impossible for science to de-spiritualize healing, in spite of the voluble rants of a few dissenters. In any case, the point is not to coronate quantum physics or any other model as a sufficient explanation for healing, but to think outside the box as new insights unfold.

Testing Prayer is an important contribution to the growing body of

healing research. This book will pay dividends to anyone interested in exploring the crossroads where science, medicine, religion, and spirituality intersect.

LARRY DOSSEY

larry@dosseydossey.com

Santa Fe, NM, USA

References Cited

- Achterberg, J., Cooke, K., Richards, T., Standish, L., Kozak, L., & Lake, J. (2005). Evidence for correlations between distant intentionality and brain function in recipients: A functional magnetic resonance imaging analysis. *Journal of Alternative and Complementary Medicine*, 11(6):965–971.
- Brown, C. G., Mory, S. C., Williams, R., & McClymond, M. J. (2010). Study of the therapeutic effects of proximal intercessory prayer (STEPP) on auditory and visual impairments in rural Mozambique. *Southern Medical Journal*, 103(9):864–869.
doi:10.1097/SMJ.0b013e3181e73fea
- Chaban, V. V., Cho, T., Reid, C. B., & Norris, K. C. (2013). Physically disconnected non-diffusible cell-to-cell communication between neuroblastoma SH-SY5Y and DRG sensory neurons. *American Journal of Translational Research*, 5(1):69–79.
- de Craen, A. J., Kaptchuk, T. J., Tijssen, J. G., & Kleijnen, J. (1999). Placebos and placebo effects in medicine: Historical review. *Journal of the Royal Society of Medicine*, 92(10):511–515.
- Dossey, L. (2008). Healing research: What we know and don't know. *Explore*, 4(5):341–352.
- Dossey, L. (2015). Telecebo: Beyond placebo to an expanded concept of healing. *Explore*, 12(1):1–12. doi: <http://dx.doi.org/10.1016/j.explore.2015.10.008>
- Dossey, L., & Hufford, D. B. (2005). Are prayer experiments legitimate? Twenty criticisms. *Explore*, 1(2):109–117.
- Farhadi, A., Forsyth, C., Banan, A., Sheikh, M., Engen, P., Fields, J. Z., & Keshavarzian, A. (2007). Evidence for non-chemical, non-electrical intercellular signaling in intestinal epithelial cells. *Bioelectrochemistry*, 71(2):142–148.
- Kaptchuk, T. J. (1998). Powerful placebo: The dark side of the randomized controlled trial. *Lancet*, 351:1722–1725.
- Osler, W. (1901). *The [New York] Sun*, January 27, 1901.
- Osler, W. (1910). The faith that heals. *British Medical Journal*, i:1470–1472.
- Pizzi, R., Fantasia, A., Gelain, F., Rossetti, D., & Vescovi, A. (2004). Non-local correlation between separated human neural networks. In *Quantum Information and Computation II* edited by E. Donkor, A. R. Pirick, and H. E. Brandt, Proceedings of SPIE5436:07–117. Abstract available at <http://adsabs.harvard.edu/abs/2004SPIE.5436..107P> and at Smithsonian/NASA Astrophysics Data System.
- Schwartz, S., & Dossey, L. (2012). Nonlocality, intention, and observer effects in healing studies: Laying a foundation for the future. In *The Oxford Handbook of Psychology and Spirituality* edited by Lisa J. Miller, New York, NY: Oxford University Press, pp. 531–547.
- Thomas, L. (1983). *The Youngest Science: Notes of a Medicine Watcher*. New York, NY: Viking Press.
- Tressoldi, P. E., Storm, L., & Radin, D. (2010). Extrasensory and quantum models of cognition. Studies related to brain activity correlation at a distance. Supplement Issue 1. *Neuroquantology*, 8(4):581–587.
- Vedral, V. (2011). Living in a quantum world. *Scientific American*, 304(6):38–43.

BOOK REVIEW

Sleep Paralysis: Historical, Psychological, and Medical Perspectives by Brian A. Sharpless and Karl Doghramji. Oxford, New York: Oxford University Press, 2015. 288 pp. \$55. ISBN 978-0-19-931380-8.

Sleep paralysis (SP) is an interculturally occurring phenomenon that has a psychophysiological and neurophysiological basis, including various and many culture-dependent interpretations. Despite its relatively high prevalence—the prevalence rate is generally estimated at about 8% but varies considerably depending on nationality and subgroup (sample type), and remains uncertain therefore—this phenomenon, which is usually assigned to sleep disturbances (parasomnias), receives little attention in sleep medicine. Typical characteristics of SP are: temporary muscle atonia in conjunction with conscious awareness, the feeling of pressure on the chest, and the experience of visual or auditory hallucinations that are often accompanied by feelings of suffocation and extreme fear. Typically, SP is experienced during sleep onset (hypnagogic) or sleep offset (hypnopompic). It can be an accompanying symptom of pathological disorders like narcolepsy but can also occur in an isolated form. Especially the latter, the isolated SP, deserves the particular interest of anomalistics because its experience has been reflected in many myths but also in cultural products (visual art, literature).

The recently published book *Sleep Paralysis* by clinical psychologist Brian A. Sharpless and physician Karl Doghramji gives a concise overview of the current state of research from a (neuro) psychological and medical perspective which leaves little to be desired. It is remarkable that humanistic and cultural aspects also are considered so that we are encountering a “magnificent integration of humanistic and scientific medicine,” as Charles F. Reynolds aptly put it in his Foreword (p. xi).

The volume is divided into 17 succinct chapters that are supplemented by four appendices. The first two chapters present the phenomenon in its various forms, and emphasize its relevance for research and clinical practice. Chapters 3, 4, and 5 deal with folkloristic, mythological, art–historical, and medical–historical aspects of SP. Then a systematic description and discussion of SP starts from a contemporary psychological and medical perspective: general symptomatology (Chapter 6), prevalence (Chapter 7), medical conditions and accompanying symptoms (Chapter 8), associations with psychopathological symptoms and syndromes, co-morbidities, etc.

(Chapter 9), theories on the etiology of SP (Chapter 10), diagnostic criteria and issues (Chapter 11), measures used to assess SP (Chapter 12), as well as differential diagnosis of SP (Chapter 13). The following three chapters are dedicated to issues regarding the treatment of SP, while presenting folkloristic methods in addition to pharmacological and psychosocial approaches. Finally, the last chapter offers a conclusion as well as an outlook for future directions of research.

The appendices represent relevant supplements to the main text. Appendix A presents a list of terms taken from different languages and cultural contexts which are used to characterize experiences with a phenomenology similar to SP episodes. The variety of these terms, and—despite cultural differences—the significant structural similarity of the identified contents supports in an impressive manner the hypothesis of the universal basis of SP.

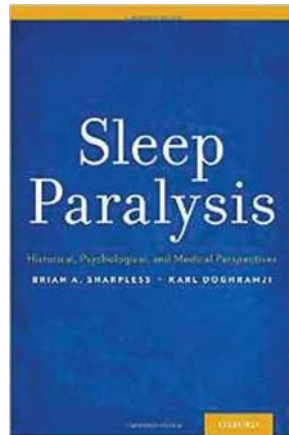
Appendix B includes the “Fearful Isolated Sleep Paralysis Interview.” Its application will be an important step on the path toward a more systematic methodology of SP research, and helpful in reaching a more homogenous state of scientific knowledge.

“Cognitive Behavioral Treatment Manual for Recurrent Isolated Sleep Paralysis” (CBT-ISP, Appendix C) is indeed primarily directed at practitioners of sleep medicine and psychotherapy, but the proposed methods also can provide valuable advice to concerned lay people, especially for self-therapeutic dealing with the frightening experiences.

Appendix D includes an “Adherence Measure for Cognitive Behavioral Treatment of Isolated Sleep Paralysis” and is thereby intended for evaluation of the CBT-ISP.

The book is clearly aimed at professionals—sleep researchers and sleep medical specialists—but it is written in a comprehensible way, and easy to read for scientifically interested people who are reasonably familiar with psychological and medical methodology.

For the field of anomalistics, SP is of particular interest insofar as the accompanying frightening hallucinations, occurring in waking consciousness, are often held responsible for the perception of ghosts, spirits, demons, and other entities that are interpreted as supernatural, but also for experiences of alien abduction. In Chapter 3, such experiences are described, and discussed with regard to structural similarities to SP



symptomatology. Such similarities can be found in descriptions of *incubi* and *succubi*, vampires, werewolves, and witches. Contemporary examples are the already-mentioned alien abductions as well as the phenomenon of “shadow people” that are dominating contemporary SP reports. Although the authors assume that clear causal correlations exist between SP and the development of corresponding (supernatural, paranormal) beliefs, and offer therefore conventional explanations of such extraordinary experiences and beliefs, they remain pleasingly cautious with their conclusions: “The causality is difficult, if not impossible, to discern” (p. 19). They do not make the mistake, driven by the wish to enlighten the people, to ‘adapt’ the existing evidence to such a theory. Thus, they write, for example, with regard to belief in witches, and witch persecution:

One can reasonably infer that sleep paralysis did indeed play *at least some role* in both the genesis and maintenance of witchcraft beliefs and also in actual testimony used against purported witches. (p. 33) [italics added]

The reluctance of the authors in this regard is possibly due to the fact that their scientific expertise is not in the field of historical and cultural scientific research. They mention at the end of their book that during their literature search they came upon many references belonging to such unfamiliar (for them) subject areas, which, however, fascinated them so much that they decided to include them (p. 214). If one wants to criticize something about the book under review, one could most likely refer to these chapters outside their competence because their mastering of the relevant material is necessarily limited. To give an example: The authors refer to *poltergeists* that make their presence felt acoustically as well as by the movement of unanimated objects (e.g., Roll 1977)—experiences that also can occur as hallucinations in SP episodes. Moreover, one can find such cases of psychological tension and stress that are relevant for SP with “emotionally troubled adolescent(s),” too. However, the fact that in poltergeist cases there indeed remain physical traces, that thus ‘real’ dishware is broken, and not only hallucinated dishes, is not mentioned, or considered. At least—and this point demonstrates the authors’ integrity—they note: “However, we are not aware of data associating it [SP] more specifically with adolescent tumult” (p. 31).

I would like to point to one omission that the authors cannot necessarily be blamed for. It concerns the presented theories on the etiology of SP. With regard to biological and medical approaches, they restrict themselves to those that refer to the (neuro) physiology of sleep. However, there exists another interesting theory that is based on the structural similarity of SP

and tonic immobility (TI) of animals that when confronted with a predator instinctively follow a death-feigning reflex. The impossibility of moving, together with the experience of extreme and existential fear could point to common underlying mechanisms of TI and SP. To the best of my knowledge, however, there exists hardly any published literature on that issue. That might be the reason why this theory was not taken into consideration.¹

SP experiences can be regarded as an important factor in the etiology of paranormal experiences and beliefs by representatives of anomalistic psychology, and should be given appropriate consideration within this field. For that reason alone, thorough knowledge of SP is important. But beyond that, it represents a particularly stimulating phenomenon for those who are interested in the investigation of human consciousness because we are dealing with an irritation at the interface between waking consciousness and sleep, and, by that token, with a very odd border phenomenon at the demarcation line between the two, otherwise scarcely compatible, worlds of day and night. The fact that SP not only occurs as a bizarre symptom of a pathological disorder but can be experienced by healthy people in its isolated form emphasizes its singularity and relevance for consciousness researchers. SP could be considered as an anomaly of sleep whose complex structure cannot be sufficiently explained in all details—even if it may be an “OK anomaly” in the sense of Sturrock, that means an anomaly “scientists can cope with” (Sturrock 2010:3), and which seems to be explainable within the framework of conventional scientific research.

Note

¹ I came upon this theory through an unpublished paper with the title “Aporetic Immobilities: A Comparison of Tonic Immobility and Sleep Paralysis” by James A. Cheyne. The former director of the Deutsche Gesellschaft für Schlafforschung und Schlafmedizin [German Society of Sleep Research and Sleep Medicine], Geert Mayer, put forward this theory as a promising approach to understanding SP (personal communication November 17, 2015).

GERHARD MAYER

References Cited

- Roll, W. G. (1977). Poltergeists. In *Handbook of Parapsychology* edited by Benjamin B. Wolman, New York: Van Nostrand Reinhold Company, pp. 382–413.
- Sturrock, P. A. (2010). Types of Anomalies: OK, not-OK, sleeping. *EdgeScience* 1:2.

BOOK REVIEW

Our Mathematical Universe: My Quest for the Ultimate Nature of Reality by Max Tegmark. New York: Alfred A. Knopf, 2014. 424 pp. \$30 (hardcover). ISBN 978-0307599803.

Max Tegmark is a well-known physicist who has authored or co-authored more than 200 papers on the subjects he writes about in *Our Mathematical Universe* (OMU). In the opening chapters of OMU he takes us on a journey with often humorous anecdotes into *our* universe as if it were only one of an infinite number of parallel universes—a subject I wrote about in 1988 (Wolf 1988)—that I believe the author says consists of what he labels as *external reality* (ER). After taking us on this journey into our own known universe, he points out why it is that we don't see these other universes in our everyday reality we experience as “out there.” It is due to a discovery he made (but was scooped by other physicists) called *decoherence theory* (for those of you a little more adept at quantum physics, this theory shows how density matrices get stripped of their off-diagonal terms when interactions with the environment are taken into account) that shows how ordinary but often invisible and uncontrollable environmental processes (like cosmic rays and neutrinos) as well as ordinary processes such as air movement and heat tend to spoil the many interference effects that parallel universes would indicate as present in our everyday world. This doesn't throw away the existence of parallel universes; it just makes them hard to see. Nevertheless, they are there.

The middle-to-end chapters (8, 9, 10, 11) deal with the subject's title. My review forward concentrates mostly on these chapters. Here is how I see them: We ourselves are entwined into ER in two distinct ways that Tegmark labels as: *consensus reality* (CR) and *internal reality* (IR). Tegmark believes that the parallel-universes interpretation of quantum physics is the best description of how ER works to answer what Douglas Adams (Adams 1983) called the “ultimate question of life, the universe, and everything,” namely, how CR arises from ER. As Tegmark sees this problem: It is the job of physics to explain how CR arises from ER and the job of cognitive science is to derive IR from CR. In brief, he believes, as I would suspect many of us do, that $ER \Rightarrow CR \Rightarrow IR$. Or, in ordinary language, IR is a subset of (i.e. implies) CR, which in turn is a subset of ER which

holds them both. Thus it is entirely logical that ER contains elements of reality that transcend our beliefs and observations found in CR about ER and our mental representations, dreams, hopes, and thoughts, etc., found in the IR, of those beliefs and observations found in the CR. Perhaps Bishop Berkeley would have put it the other way round with $IR \Rightarrow CR \Rightarrow ER$, with perhaps the complete vanishing of ER altogether since no one has any idea of what it “really” is. Tegmark’s belief is that the ER is Mathematics (capital M), pure and not so simple.

The author writes OMU in a style I admire and in fact have used myself in my many books—one of personal, anecdotal, and humorous description of a rather resoundingly full account of our present CR physical view of the yet unmappable, and probably unimaginable, ER. As he now resides at MIT as a tenured professor, he includes such meanderings into the question of consciousness and the subject matter of OMU fearlessly, although he himself faced challenges from unnamed established professors who emailed him that he, in his academic career, “should stop or you’ll ruin your career” warnings, and indicates how the boundary separating mainstream science from such “arcane” subjects as witchcraft, telekinesis, alchemy, low-fat diets, and creationism has continually shifted and will do so in the future.

Having said that, I now wish to laud Tegmark for having the courage to even include the subject of mind and consciousness in his book, since little is known that would indicate that IR operates from a purely mathematical basis at all, if any. In fact, Penrose (1989, 1994) in his books argues for the contrary view. So what the author is really referring to is the remarkable success physics has had in gaining a foothold, a CR, on the ER through the use of mathematics. Hence OMU is really Tegmark’s CR map of ER that has been drawn with mathematical concepts, and indeed the map is strewn with great details that are very accurate within certain specific areas but are certainly not overlapping—the biggest gaps in the map, as Tegmark willingly points out, are between the fields of the general theory of relativity and quantum physics. So, as Alfred Korzybski would put it, has the author confused the map with the territory?

Tegmark posits that the universe, the big multiversal territory consisting of parallel universes galore, is ER, which in turn is Mathematics (capital M) not just made describable by mathematics; but instead ER and Mathematics are completely equivalent, $ER \Leftrightarrow M$ —a kind of a possibly “madcap” Platonic universe of ideals of course completely expressible as mathematical concepts. In brief, ER consists of M in some way that we mortals can only describe by the mathematical tools we have come up with in our meanderings through the unknowable wilderness of the ER to make



our maps, consisting of CR, which we visualize as IR.

Maybe, however, there is something clearly missing in all of this that the author relegates to the universe of the cognitive scientists; namely conscious experience. Not just the waking conscious experience, but the continual ongoing conscious experience of life itself as certainly felt by me (even when sleeping, but not when under deep anesthetics) and I would assume by all living animal creatures and even perhaps living plants. And what of art and deep spiritual experience? Certainly mathematics can be viewed as forming the skeletal structure of all of art including music, sculpture, painting, poetry, and

other forms of art as our digital age and devices so aptly indicate. Clearly there is a non-mathematical world of experience that is fleshed out from this skeleton to provide not only joy and appreciation, but also a sense of the mystery of all that is, even the mystery of the joy of mathematical discovery.

Would an overlap of the mathematics of quantum physics and the general theory of relativity explain the mystery of such conscious experiences? Decoherence theory would indicate that conscious experience plays no role in quantum physics, and from this one would think plays no role in ER other than being a subset of CR. It may indeed play no role in ER, if in fact there is no such thing as ER and in the Berkeleyan sense all we have is $IR \Rightarrow CR$. Thus it is that mathematics is a derivation from a fundamental chaotic Mind (with a capital M) that arose as a way of dealing with its own chaos by attempting to place events in formal order, resulting in humans thinking about the universe in terms of mathematics and physics in order to better survive, for example. This chaos may itself be necessary in order that anything possibly dreamed of in IR may come to exist as CR. Thus even the thought of an abstract realm called the ER may be constructed, as Tegmark has admirably done.

OMU is a big book (more than 400 pages), and it is indeed very well-written for both the nonphysicist and physicist alike and has gained the support of many well-known physicists, as I garner from the back-of-the-book blurbs. It is well worth a read if you are at all curious about how today's physicists are breaking ground at the frontiers of the physical

universe both figuratively and ontologically, and as well striving to understand consciousness. It may even make you marvel at OMU as both a grand skeletal construction and a remarkable creation from the IR.

FRED ALAN WOLF

Parallel Universes: The Search for Other Worlds

The Dreaming Universe: A Mind-Expanding Journey Into the Realm Where Psyche and Physics Meet

The Spiritual Universe: One Physicist's Vision of Spirit, Soul, Matter, and Self

The Spiritual Universe: How Quantum Physics Proves the Existence of the Soul

Mind into Matter: A New Alchemy of Science and Spirit

Time-loops and Space-twists: How God Created the Universe

References Cited

- Adams, D. (1983). *Life, the Universe and Everything*. New York: Harmony Books.
Penrose, R. (1989). *The Emperor's New Mind*. New York: Oxford University Press.
Penrose, R. (1994). *Shadows of the Mind*. New York: Oxford University Press.
Wolf, F. A. (1988). *Parallel Universes*. New York: Simon & Schuster.

BOOK REVIEW

Return to Magonia: Investigating UFOs in History by Chris Aubeck and Martin Shough, Foreword by Jacques Vallee. San Antonio, TX, and Charlottesville, VA: Anomalist Books, 2015. 367 pp. \$24.95. ISBN: 978-1-938398-54-4.

In 2009 Jacques Vallee and Chris Aubeck gave us *Wonders in the Sky*, a chronological collection of 500 anomalous aerial events from antiquity until 1879. The purpose of this book was to introduce readers to the breadth of UFO-like accounts contained in historical documents through the ages. In this present book, Aubeck joins with Martin Shough to explore a selection of these reports in depth, undertaking cold-case investigations in an attempt to discover the causes behind each of these unusual observations.

One strength of *Wonders in the Sky* lay in the authenticity of its sources. The cases came not from the UFO literature, where incomplete, distorted, and sometimes fabricated accounts have circulated for years, to be told, borrowed, and retold over and over even after creditable research discredited them. Rather, the authors of *Wonders* drew their materials directly from the ancient and medieval chronicles, the Reformation-era broadsides and prodigy collections, the scientific journals and newspaper pages where the reports first appeared. These items from original sources provide the firmest possible foundation for the study of historical anomalies, and *Return to Magonia* builds on this base.

Chris Aubeck has legitimate claim to expertise on the subject of historical anomalies. He is the mastermind behind the Magonia Exchange, an Internet-based group of researchers that carries on the researches of Charles Fort. The participants search out anomalous phenomena, primarily UFO-related events, in old newspapers, journals, and books dated prior to the advent of flying saucers on June 24, 1947. These shared findings continue to grow and they provide the authors of *Return to Magonia* with an abundance of cases to choose from, much of it unfamiliar and some of it impressive, even startling.

Aubeck's co-author is Martin Shough, an engineer who serves as a research associate for the National Aviation Reporting Center on Anomalous Phenomena (NARCAP). The high technical standards of this organization are esteemed by everyone familiar with its work. Shough has issued research papers through NARCAP and on his "Aerial Phenomena

Studies” website (<http://www.martinshough.com/aerialphenomena>), which include an extensive analysis of the “first” flying saucer sighting, “The Singular Adventure of Mr. Kenneth Arnold,” and refutation of a claim that a KC-97 refueling tanker was responsible for a famous 1965 UFO incident, “Exeunt Exeter?”. The care of his research and the precision of his technical analyses have made me an admirer, and assure a rare level of expertise for studies in the present book.

So how feasible is a study that reopens cases a hundred or two hundred years old? At first glance the prospects look pretty dim. All the witnesses are dead, so no chance to ask them questions, no hope of filling in missing facts. The written sources are all we have and they are often woefully inadequate—brief, second-hand or third-hand, sometimes unclear and confusing, never ideal even at their best and usually several steps short of best. Even good descriptions employ the language and eyes of a bygone era, which dim and distort our already narrow view. At worst we cannot even trust our sources because the story we read may have served to promote a religious or political cause, to fool or entertain the readership, but not to record a historical event. A long-ago prankster may enjoy a posthumous triumph beyond his fondest imaginings when he gulls the learned members of a future civilization that has walked on the moon and flies across country in a few hours.

Undaunted by these problems, the authors see in this seemingly unpromising historical data an opportunity to pursue not just one, but four significant research tasks:

- Attempt to find a conventional solution for a series of informative reports.
- Cultivate a methodology for the investigation of historical cases.
- Compare each subject case with other historical reports and more recent UFOs, both to provide context and to search for cultural or phenomenological consistencies.
- Trace the evolution of anomaly reports and ideas about anomalies to identify how these representations have changed over time.

The authors begin with an Introduction that makes clear their determination to pursue a rigorous methodology. A useful case for study includes date, location, and witness names. This essential information provides factual anchors that the researcher can actually check out, using modern Internet tools like an online planetarium that recreates the sky as it appeared on the date of the sighting, or genealogy and local-history resources that can confirm the existence of the alleged witnesses. If the factual leads hold up under examination, they confirm that the report is at

least more than a whole-cloth fabrication, and at best may point directly to an explanation. In each chapter the authors sleuth out the witnesses, map out the site, look for sightings elsewhere on the same date, and, where appropriate or possible, check the visible planets and weather conditions. When online and printed references prove inadequate to answer questions about, for example, flocking birds or luminous insects, they contact outside experts for the needed answers. Such a broad and systematic methodology applied to each case assures circumspect consideration of the validity of the evidence as reported, and of multiple potential solutions. Even if the book had nothing interesting to say about what the authors found out, it would still stand tall on the merits of how they found out.

Sandwiched between a brief introduction and an even briefer conclusion lies the meat of the book—21 chapters on 21 different cases. Two are Fortean “classics,” one an 1845 account of balls of fire rising from the Mediterranean and a double meteor seen hundreds of miles to the east at about the same time, the other from 1887 when a double meteor, one dark and one bright and accompanied by both heat and ice, fell near and caused damage to a ship at sea. A few others have appeared in the literature at one point or another—ships and armies in the air over Stralsund in 1665, a destructive cloud like an angry giant over Boston in 1765, a dark meteor like a rotating cask reported from Australia in 1862, and the “Aldeburgh Platform,” a thin, round disk with a group of men in military uniforms standing on top, flying at treetop level in broad daylight over Britain during World War I, but not lowered from a Zeppelin or possessed of any visible means of propulsion. The rest are recent findings, among them an 1831 British case wherein numerous witnesses along a path of many miles witnessed a fiery phenomenon “like a man running” race by and scorch the ground, another British case from 1852 involving a triangular cloud that exploded and dropped a red glowing nucleus into the sea, a U.S. account from 1872 of a fiery object descending to the ground and a human figure entering a literal horseless carriage and driving away from the site, a Minnesota doctor’s 1899 report of a brilliant disk-shaped light the size of an umbrella and three feet off the ground that stayed in sight for half an hour, and five egg-shaped objects the size of locomotives casting shadows as they flew over an Australian city five months before Kenneth Arnold saw his famous flying saucers.

The authors choose not necessarily the best cases but examples that combine both interest and illustrative value. Some of the choices exhibit conventional explanations that proper investigation uncovers: A conjunction of Venus and Jupiter in 1660 explains several reports of wonderful lights in the sky recorded in the contemporary prodigy literature, large twisting

flocks of birds fit the descriptive elements of the Stralsund aerial scenario, and the “rampaging giant” over Boston took out his wrath on the tax collector in a piece of political fiction protesting the Stamp Act in 1765. The 1845 Fortean case from the Mediterranean resolves into a meteor recorded over much of the Middle East conflated with the report of a ship’s encounter with possible undersea volcanic activity. In other instances, no firm conclusion emerges but a possible one presents itself: For example, the red nucleus of a cloud from 1852 might have been due to flashes from a French lighthouse from across the Channel.



Even the most diligent efforts to find solutions sometimes still leave the authors puzzled. The other Fortean story of a dark and a bright meteor at sea suggests ball lightning but contains much that does not readily fit even that mysterious phenomenon. The fiery “running man” account defies explanations both conventional and ufological, while the story of a crashing UFO and its humanoid with a handy horseless vehicle sounds like a newspaper hoax, yet no evidence hints at dishonesty among the reporter or the witnesses. Still others—like the Australian dark meteor, the doctor’s brilliant light, the Alderburgh Platform, and the 1947 formation of flying eggs—completely resist the authors’ attempts to explain them. Here then are cases that deserve the literal designation of unidentified flying objects.

A search for similarities widens the scope of the authors’ research from a specific case to whole classes of similar or related cases. The “fiery exhalations” that troubled Welsh farmers in 1694 returned in the form of globular lights in the 19th century and may have been due to some sort of natural gas, but Wales was also the scene of mysterious lights in 1905 during a wave of religious excitement, and the same areas have hosted more than their fair share of UFO activity in recent times. A case of mysterious balls of light, sometimes near the ground and sometimes flying up into the air in Malaysia leads to comparisons with ghost and fairy lights in Europe, where *ignis fatuus* and luminescent insects can explain some reports but not others, suggesting at a minimum an inadequacy in our knowledge of the natural world. Familiar UFO forms like the disk and the triangle have their historical antecedents, and even the term “flying saucer” was familiar to skeet shooters half a century before Kenneth Arnold.

The organization of the book is chronological, and the progression of cases from 1660 to 1947 leaves an unmistakable impression of how reports of anomalous aerial phenomena and our understanding of them have changed. In the 17th century they were signs and wonders recorded as events

of religious significance. From the 18th century onward these sights became anomalies of nature and worthy of recording in scientific publications, though a category like “meteor” became sorely stretched in efforts to contain multiple anomalies in one conventional package. Meanwhile, the common folk relied on traditional or popular ideas to understand these mysteries. As newspapers grew common in the 19th century, ordinary people gained another outlet for the strange sights they saw, and as aviation became a possibility and finally a fact, witnesses began to report lost balloons, phantom airships, and mystery aircraft. Yet despite identities ascribed to strange aerial sights that varied from religious to natural, traditional to technological, one fact emerges from this procession of oddities: They are not altogether different from modern reports. A kinship ties past to present, not in every case or every detail, but a degree of continuity characterizes the phenomenology of “UFOs” past and present.

Return to Magonia closes with a succinct and pithy conclusion that emphasizes that old and new reports are similar, historical cases do lend themselves to fruitful analysis, and UFOs old and new present a serious subject for study undeserving of their current stigma. These conclusions do not overreach with proclamations that the cases prove alien visitation, or even that the unknowns will always remain unknowns. The authors are well aware of the limits of their sources and uncertainties surrounding even the most rigorous analysis. The facts remain that these cases exude strangeness, and the authors have tried with due diligence and a practical, up-to-date methodology to find a conventional answer. If none applies, the report persists as an unknown in the meaningful sense of an incident even more mysterious than it appeared before.

This book is not a quick read for the casually curious. No ancient aliens, government conspiracies, or even UFOs labeled as spaceships spells disappointment for UFO enthusiasts. They will nod off during searches for where a witness lived, resent discursive comparisons of a mystery light with folklore or entomological evidence, and grow dyspeptic over cases that end with a mundane solution. This book is not intellectual candy to feed favorite beliefs or a sounding board for speculative theories. What this book is, is a work of serious scholarship. Seldom are such deep research, careful analysis, and stringent arguments found in the UFO literature, and *Return to Magonia* is exemplary both in the four research goals it undertakes and its success in carrying them out. For the serious anomalist, this is a book to treasure, one to ponder and enjoy by the fire on a frosty night or under the shade on a summer afternoon.

If I have any advice to offer, it is that the authors take care with newspaper sources. American newspapers printed hoaxes as a form of

popular entertainment, and the practice was so common that editorials spoke knowingly of “nature faking” and “snake editors” within the journalistic ranks. Nor is it enough that the source of a wild story be a solid citizen to guarantee its validity. Alexander Hamilton, the farmer who told the tale of an airship stealing his cow in 1897, was once a member of the state legislature and boon companion of all the other distinguished men of his county. They all signed an affidavit testifying that Hamilton was an upright and honest man, yet the cow abduction story was a hoax and they all knew it. In those earlier days his neighbors knew he was honest about things that mattered and a tall tale made him an admired storyteller, not a liar. News writers would even drop the names of prominent citizens as witnesses to an airship only to have that citizen deny that he saw anything or said anything about it to a reporter. Even those who didn’t like it seemed to accept that they might find their names in a newspaper yarn and showed little concern. No evidence of hoax beclouds the cases in the book, but given the prevailing culture, let the modern reader beware.

Readers may not agree with every analysis. I have to wonder if the lighthouse across the English Channel, though poet Matthew Arnold saw it from Dover Beach in fine weather, would be sufficiently visible when conditions were foul to create the appearance of a luminous nucleus. What matters more than any particular quibbles, though, is the depth of research and reasoning behind each analysis that makes it a formidable challenge for any doubter to refute. This is fine work through and through, and exemplary of UFO research at its best.

The book itself is well-provisioned with useful illustrations and abundantly annotated. The text provides a lucid read. An index would have been helpful, though a list of cases and a glossary are included. Though the authors do not reveal the fabled answer to the mystery of UFOs, they give us what Tiffany Thayer, the leader of the Fortean Society, liked to call “grist for the mill.” And wonderful grist it is, fascinating in its own right and evidence to reckon with for understanding both UFOs and anomalies in general. We can hope that Aubeck, Shough, and Vallee, kindred spirits in the exploration of historical ufology, will continue the fine work they have begun and treat readers to more of the trove of remarkable cases now being uncovered.

Any serious ufologist can rejoice in this important addition to quality UFO literature, and thank the authors for their outstanding work and Anomalist Books for publishing it.

THOMAS E. BULLARD
Bloomington, Indiana, USA
tbullard@indiana.edu

BOOK REVIEW

Molecular Memories by Robert G. Jahn and Brenda J. Dunne. Princeton, NJ: ICRL Press, 2015. 120 pp. \$12 (paperback). ISBN 978-1936033218.

For more than a quarter century, there was a surprising and curious intellectual ferment in the basement of the School of Engineering and Applied Science at Princeton University. This was the PEAR Lab, short for Princeton Engineering Anomalies Research Laboratory, and though its works and contributions to the world of consciousness research are widely known, there is a back story that is worth telling, not only for its intrinsic interest but for the more subtle implications and encouragements it brings. In the interest of full disclosure, the review author was part of the PEAR family for some 22 years.

The PEAR Lab was built on a collaborative foundation laid by Bob Jahn and Brenda Dunne, and grew quickly into its role as a leading research center that was a magnet for professionals interested in the nature and capacities of human consciousness, and for students exploring the range of intellectual possibilities. It also drew ordinary and not so ordinary people from the public, as well as from government and industry. The attraction of unusual and sophisticated research was enhanced greatly by a warm and welcoming environment different from what most of us envision as a university laboratory. One might say the place was more PEAR than Lab, and yet it hewed without question to the canons of best practice in scientific terms. Quite a place, and deserving of the documentation, descriptions, and anecdotes gathered here in *Molecular Memories* by Jahn and Dunne.

This is the proverbial “slim volume” (119 pages), but it contains a delightful collection of short chapters, each providing some flavor of the richly creative environment of the PEAR Lab. Most chapters focus on the “molecular” of the title, namely the interactions and the complementary relationship of the two authors. Bob Jahn became persuaded in the late 1970s that possible effects of human consciousness on physical systems deserved a high-tech examination. He began setting up a research project that would need hands-on management that he, as Dean of the School, would not be able to provide. He found the right person in Brenda Dunne, and that set the research program—and a decades-long collaboration—in motion. The first four chapters of *Molecular Memories* are about putting

the necessary resources together, with some uphill challenges and some decidedly remarkable assists from chance meetings and connections. Chapter 5, named “Christening,” explains how the PEAR Lab got its name, and points to the collection of anomalies that made it clear there really wasn’t any choice—it had to be PEAR.

Many of the anecdotes are about who came to the Lab. Some were visitors with an agenda, perhaps having to do with government programs or intelligence operations. Many were just curious, but sufficiently so that they became what we called “operators” or participants in the experiments.

Some were so deeply struck that they became part of the PEAR family, either as volunteers or, in a few cases, as staff members. Possibly the most interesting of our guests were schoolchildren, about 10 years old. In the chapter, “Tell the young people,” Brenda and Bob describe the repeated and delightful visits from nearby schools of batches of a dozen or so bright and energetic kids. Inspirational—in both directions.

Though the book covers a lot of territory, the authors couldn’t include all the many incidents that helped define the Lab. For example, a remarkable moment when we were talking about the Lab environment—coffee tables and comfortable chairs, interesting pictures, nice music or pleasant ambient sounds like flowing water. Though no tape was running, we suddenly noticed extremely realistic water sounds, which we discovered were coming from pipes above the drop ceiling in the next room. The source turned out to be very curious indeed—the pipes, which had once been part of an AC system, were no longer connected. Or the time we agreed not to mention the name of an unpleasant character who had visited a few months earlier from Eastern Europe, only to have him appear the next day. Or the awesome Halloween parties that stimulated the real creativity of the PEAR family and friends. Obviously, “you had to be there,” but *Molecular Memories* is a window into a unique program populated by interesting folks.

The Lab was sometimes more intense than the engineering school environment would suggest, because the challenges and the promise of the experiments aroused strong emotions in powerful personalities. Though there was deep mutual respect, there was also an unspoken but clear commitment to unfettered and unfiltered expression. The idea was to get it right and get it done, using ideas that could survive strong, critical discussion. A hint of this can be found in three chapters called The Meds, The Feds, and Professional Societies and Skeptics.



Long ago, I suggested to Brenda that she needed one day to write the raconteur's version of the PEAR Lab's life and times. Those who know her will understand what I meant by that, because she is a marvelous storyteller. And those of you who have spent any time with Bob know his impeccable wit and fine sense of history. There are, as noted earlier, many more stories that could be told to illuminate those three remarkable decades of science and art Bob and Brenda put together at PEAR, but this opens a door. *Molecular Memories* is different from the more technical books these two scientists have published. It gives a taste of the contextual chemistry that allowed that work to be done.

ROGER NELSON

Further Book of Note

The Science Delusion: Asking the Big Questions in a Culture of Easy Answers by Curtis White. New York: Melville House, 2014 (augmented edition, first published 2013). 272 pp. \$13.55 (hardcover or paperback), \$11.95 (ebook, Kindle, PDF). ISBN 987-1612193908.

Scientific explorers might enjoy this rant against scientism and how it has insinuated itself into popular culture.

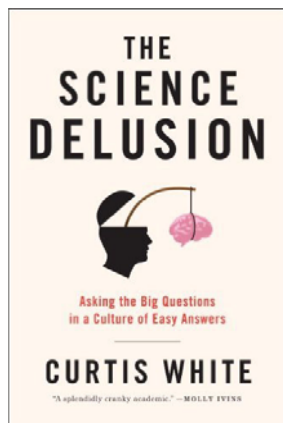
White singles out as leaders and gurus of scientism two groups: neuroscientists and the New Atheists, the latter including Richard Dawkins, Christopher Hitchens, and Daniel Dennett. When they or anyone else talk about the beauty of some scientific finding, or about any other aesthetic judgment or about an emotion, White charges hypocrisy, or at last failure to understand the implications of what these people write and claim, which is a rather plain version of reductionist mechanistic materialism: “Confess to the superiority of science and reason” (p. 8). How to explain “eagerness, . . . appetite, excitement for what the future holds for scientific discovery?” (p. 81). As White notes, “there may be nothing special about our place in the cosmos, but there is something very special about our ability to say so” (p. 82).

In places, White succumbs to oversimplifying, or perhaps to writing a little too much off-the-cuff. Thus he reveals his political leanings by charging that materialist scientism fits all too well with capitalism and that there is a synergistic relation between them. But so there is too with left-wing extremism: Dialectical materialism, after all, was preached by Marx, and claimed overtly as the worldview of the Soviet Union—in ways not at all congenial with actual science, as geneticists and theorists of chemical combination found.

Still, White has a good case to make and does so stylishly:

The problem for science is that it doesn't know what its own discoveries mean. (p. 25)

Scientists are weirdly comfortable with the idea that the universe and human life is [sic] meaningless. We're just products of physics and chemistry and so is the universe. (p. 80)



Perhaps it is White's political inclinations, or perhaps he himself normally believes what "science" has to say, when he charges "free-market economies . . . largely responsible for changing the climate" (p. 91). This willingness to take a mainstream scientific consensus as infallible is surely a symptom of the endemic scientism against which this book is railing.

Another instance of loose writing comes in charging that "science has extended its ambitions beyond the debunking of Christian dogma. It has now turned its attention to another old competitor, the secular world of the humanities and the arts" (p. 103). It is not "science" that debunked Christian dogma, it is scientism. And there are no grounds for calling arts, humanities, and science "competitors," in any intellectual sense.

Still, the New Atheists and their ilk provide White with ample fodder. Steven Pinker is cited for describing the mind as a biologically selected neural computer and for describing art as a biologically frivolous and vain activity (pp. 103–104). Jonah Lehrer wrote that "We can take snapshots of thoughts in brain scanners and measure the excitement of neurons as they get closer to a solution" (p. 110); "thoughts" and "excitement," really?

Those sorts of claims are widely accepted as legitimate descriptions of what science does and can do.

What's disturbing is what this all says about American culture. . . . in which self-evident lies, supported by stunning lapses in argument, are eagerly taken up by our most literate public, which is happy to call it 'fascinating' and 'provocative.' (p. 182)

Indeed. This book's central thesis is important and well-grounded, and the author's passion makes for some delightfully cutting, often sarcastic debunking of what the materialist extremists have to say.

Henry H. Bauer

Professor Emeritus of Chemistry & Science Studies
 Dean Emeritus of Arts & Sciences
 Virginia Polytechnic Institute & State University
 hhbauer@vt.edu, www.henrybauer.homestead.com

Further Book of Note

Late Night Thoughts about Science by Peter A. Sturrock. Exo-science Publishing, 2015. xiii + 172 pp. \$16.99 (paperback). ISBN: 978-0984261468.

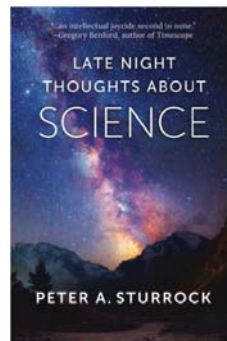
Few high-achieving scientists have also given as much thoughtful attention as Peter Sturrock has to things that science doesn't know. In this book, Sturrock describes fifteen "questions to which I do not have answers, to which I would like to have answers."

Those are: ball lightning; the Allais effect (pendulums and eclipses); low-energy nuclear reactions ("cold fusion"); intriguing properties of beta decays (one of the mechanisms of radioactivity); precognition; clairvoyance; remote viewing; psychokinesis; anomalous healing; out-of-body experiences; reincarnation; permanently unidentified flying objects; crop circles; Tunguska; Shakespeare authorship.

The rigorous empiricism and intellectual clear-headedness Sturrock brings to bear is illustrated by some of these, for instance *permanently* unidentified flying objects, which immediately forestalls the typical "Skeptic's" enumeration of all the UFO reports that turned out to be planets, satellites, etc. The problem for the pseudo-skeptics is that the weirdest sighting reports seem to be also the best-documented from the most reliable sources.

Again, empirical and evidence-based are distinctions that most people would probably not make, among the topics often grouped together as "psi." But Sturrock is determined not to pre-judge, so he recognizes that the evidence for precognition is not at the same time evidence for clairvoyance, and that neither is inherently or necessarily related to out-of-body experiences or reincarnation; nor are the latter two necessarily related to one another, no matter how likely such a relationship might seem.

Questions about the authorship of "Shakespeare's" plays are not usually included in compendia of mysteries or anomalies, but this topic is a natural one here because the general approach Sturrock takes and proselytizes for, the Bayesian approach and consideration of multiple hypotheses, can



serve wherever one seeks to be as strictly evidence-based and bias-free as possible.

This is a marvelously instructive as well as interesting book. While you're at it, in case you missed them, don't fail to read Sturrock's *A Tale of Two Sciences: Memoirs of a Dissident Scientist* (2009) and *AKA Shakespeare: A Scientific Approach to the Authorship Question* (2013).

HENRY H. BAUER

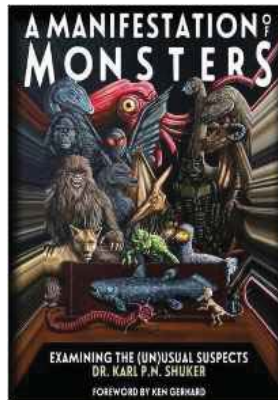
Professor Emeritus of Chemistry & Science Studies
Dean Emeritus of Arts & Sciences
Virginia Polytechnic Institute & State University
hhbauer@vt.edu, www.henryhbauer.homestead.com

Further Book of Note

A Manifestation of Monsters: Examining the (Un)usual Suspects by Karl P. N. Shuker. San Antonio, TX, and Charlottesville, VA: Anomalist Books, 2015. xi + 202 pp. \$15.95 (paperback), \$9.99 (Kindle). ISBN 978-1938398520.

Shuker's writings are unfailingly informative, meticulously documented, and full of fascinating things that surely are quite new for most of us.

This new collection comprises updates on some earlier writings and an unusually wide range of tidbits about possibly real but unidentified creatures, about anecdotes and long-lasting stories of creatures that are most certainly not real, and about deliberate hoaxes. There are interesting details, too, of how Shuker tracked down some of the material. Those together with the analyses of the varied claims also bring the reader an awareness of how uncertainly reliable is the knowledge we gain from the mass media, and how much science—biology, zoology—still does not know, let alone understand.



The different topics and subtopics addressed are so numerous as to defy listing, and it neglects some fascinating others if just a few are mentioned. Nevertheless, just to whet appetites, how about the almost certainly nonexistent Nandi bears that may nevertheless point to some real creatures, such as African sloths. Or, how could Tolkien's hobbit have known about the Gobi's possibly mythical were-worms? What about the physical evidence of tusks that point to a nevertheless nonexistent elephant pig? Could some enormously monstrous eels really exist? Yes, of course. Could that explain what the creatures are in Loch Ness? No.

There are mystery frogs and toads. Rat kings, a rodent analogue to human Siamese twins, but joined not through heads but by assemblies of inextricably linked tails. The Index offers innumerable inscrutable scientific names—among them *Agrostichthys*, *Ceratogaulus*, *Paralouatta*, *Pheretima*, *Xenothrix*. Also listed is some standard cryptozoological material, physical evidence awaiting explanation such as the Beast of Bray Road or of Buderim, the Camp Fircom carcass; and some cryptids that will be familiar

to many—chupacabra, Bigfoot, mokele-mbembe, the Jersey Devil; as well as some more obscure cryptids.

There are mentions of coy–dogs and hyena–dogs, which may be close to recognition in mainstream zoology: I had just come across an article reporting that the “Eastern coyote” owes about 25% of its DNA to wolves and about 10% to domestic dogs (Goldman 2015).

This book confirms Shuker himself as a hybrid zoologist–cryptozoologist authoritative in both disciplines and as an author always well worth reading.

HENRY H. BAUER

Professor Emeritus of Chemistry & Science Studies
Dean Emeritus of Arts & Sciences
Virginia Polytechnic Institute & State University
hhbauer@vt.edu, www.henryhbauer.homestead.com

Reference Cited

Goldman, J. (2015). Is this coyote–wolf hybrid taking over North America? Earth Touch News Network, 9 November, 2015. <http://www.earthtouchnews.com/natural-world/animal-behaviour/is-this-coyote-wolf-hybrid-taking-over-north-america>

CALL FOR PAPERS

Joint PA and SSE Meeting, June 2016

Accessing the Exceptional, Experiencing the Extraordinary

June 20–June 23, 2016

The 35th Annual Conference of the Society for Scientific Exploration (SSE) and the 59th Annual Convention of the Parapsychological Association (PA) will be held at the newly renovated Millennium Hotel in Boulder, Colorado, from Monday, June 20, 2016, through Thursday June 23, 2016.

Welcome Reception: Sunday evening, June 19, 2016

Workshops: Friday, June 24, 2016

Although each organization has its own purview and style, the program will be fully integrated. Dr. Roger Nelson is the Executive Program Chair, working with his two co-chairs, Dr. Chantal Toporow for the SSE, and Dr. Renaud Evrard for the PA. The program will be a synergetic mix of presentations from PA and SSE members, and there will be no concurrent sessions. We will keep the meeting to 4 days by selecting the best submitted papers, and by using dynamic poster sessions as well as evening sessions for panels and special presentations. The program theme describes the mission common to both organizations: ACCESSING THE EXCEPTIONAL, EXPERIENCING THE EXTRAORDINARY.

Speakers include:

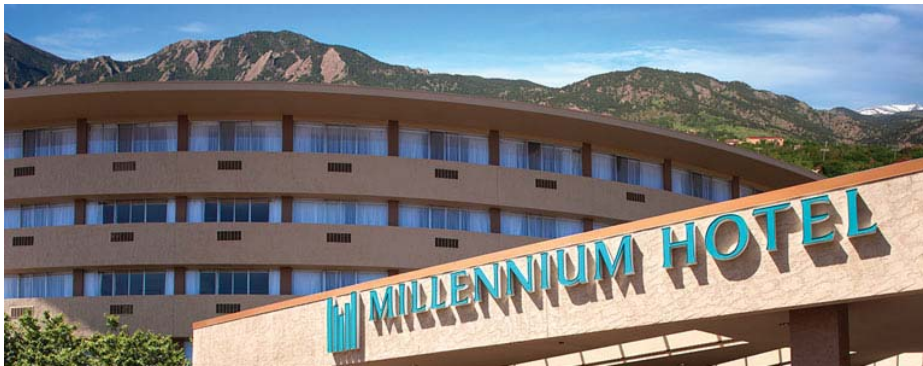
Larry Dossey, M.D., a prime mover behind the integration of alternative perspectives into medical education.

Anthropologist Jeff Meldrum will talk about the elusive evidence for even more elusive relict hominoids like Sasquatch.

SSE President Bill Bengston, who has fostered a revolution in studies of tumor healing in mice, will talk about new dimensions of his work.

Russ Targ, a creator of Remote Viewing research, will introduce the first showing of his new film, *Third Eye Spies*, about CIA psychic spying.

PA President Chris Roe, Professor at Northampton University, will have new findings representing Europe and the UK.



Newly renovated Millennium Hotel in Boulder, Colorado.

A **Program Booklet** will be published containing abstracts of all papers and posters. This requires both PA and SSE members to provide a long abstract of 300 to 500 words (approximately one page of single-spaced text), which summarizes the main points of the paper including its intended goals and conclusions. A link to a template is provided below.

Submission Deadline: April 15, 2016

The cutoff date for submissions is April 15, 2016. We expect the program to be full, and submissions received subsequent to that date will likely not be considered. Authors will be notified of the review result (i.e. acceptance or rejection) and any applicable comments, by May 15th, 2016.

Submission Preparation

For SSE members, Titles and Abstracts for papers and posters should be submitted electronically as an attachment to the SSE co-chair, Dr. Chantal Toporow, SSEaspiringexplorers@gmail.com. **For PA members**, full papers should be submitted electronically as an attachment to the PA co-chair, Dr. Renaud Evrard at convention_program@parapsych.org. Titles should be short and informative, followed by author name, affiliation, email address.

Submissions will be a full paper for PA members, or a long abstract for SSE members. In both cases, we require an abstract of 500 words or less for inclusion in the convention booklet. Please use this template for creating your abstract: <http://tinyurl.com/pyff9mz>

PA program committees have generally required full papers to encourage later publication, and the combined committee will accommodate this tradition. For convenience and consistency, full papers should be submitted using this template: <http://tinyurl.com/ndfnknk>

SSE program committees require a long, detailed abstract of the submitted paper to review, and for inclusion in the program booklet. The SSE's Journal of Scientific Exploration solicits full papers based on conference presentations. SSE Associate and Student Members must be sponsored by Full Members.

Submission Categories

Floor presentations will include full papers (30 min, 10 min for questions and comments) and research briefs (15 min, with 5 min for comments).

Posters: Accepted posters should measure 1 m width and 2 m height. We recommend poster pages use sharply focused, concise text, and high-quality figures and illustrations. Simple but precise materials work best. Poster pages must be printed brought to the meeting. We will supply mounting materials.

Panel discussions may be submitted only by Professional and Full members.

SSE ASPIRING EXPLORERS PROGRAM

The SSE has established an Aspiring Explorers Prize for meritorious student research projects judged to be the most original and well-executed submission in subject areas of interest to the SSE. A committee is in place to review all entries and determine the winner, who will receive an award of \$500 and have the opportunity to present a talk describing the project at the annual meeting, for which the Society will cover her/his registration fee. Submissions must be made per the guidelines and deadline as stated on the SSE website's "Call for Papers" page for the conference you are considering attending in order to be eligible for that year's prize.

If your paper is selected for the Aspiring Explorer Award, you will be either invited to present your talk at the meeting or able to submit your paper as a poster session. We are very excited about doing poster sessions now, so please let your fellow student colleagues and professors know about this. <http://www.scientificexploration.org/2016-conference>

In addition, the SSE is also offering a 50% discount on future meeting registrations for any student member who brings one student friend to our conferences (one discount per student). We are eager to see student clubs or SSE discussion groups established at various academic institutions or in local communities. Contact us at sseaspiringexplorers@gmail.com to start your own group!

C. M. Chantal Toporow, Ph.D., SSE Education Officer

Life and Mind — Scientific Challenges

10th Biennial European Conference of the Society for Scientific Exploration

Sigtuna, Sweden, October 13 – 15 2016

<http://www.scientificexploration.org/sweden-2016>

The 10th Biennial European Conference of the Society for Scientific Exploration is being organized in collaboration with the Swedish Society for Psychical Research (SSPR) and the research center Agora for Biosystems at the **Sigtuna Foundation** October 13–15, 2016 (Thursday morning through Saturday noon). The Sigtuna foundation (website: sigtunastiftelsen.se/) is a private cultural foundation, whose principle aim is to inspire human thought and reflection, and to stimulate and facilitate dialogue, encounters, and bridge building. Founded in 1917, it grew out of a student movement that sought to revitalize both the Church of Sweden and society at large by fostering a creative and fruitful exchange between people of faith and secularists, between religion and science, culture, and the arts.

Sigtuna is close to Uppsala, which has the oldest university in Scandinavia (Uppsala University was founded in 1477 and has a track record of numerous Noble Prizes). Sigtuna was established around 980 A.D. and has played an important role in Swedish history. Sigtuna is also close to the capital city, Stockholm, and its major airport Arlanda. Local Hosts are SSE European Representative Anders Rydberg anders.rydberg@angstrom.uu.se or anders.rydberg@sse-europe-2016.eu and the Program Chair, and President for the SSPR, Göran Brusewitz goran.brusewitz@bredband.net or goran.brusewitz@sse-europe-2016.eu

CALL FOR PAPERS

Papers in the areas of Quantum Biology, Brain and Mind, Consciousness, and related areas are welcome. Abstracts (non-student abstracts) for contributed papers should be sent to the Program Chairman: Göran Brusewitz goran.brusewitz@bredband.net or goran.brusewitz@sse-europe-2016.eu

Student abstracts should be sent to the SSE Education Chair, Dr. Chantal Toporow, at sseaspiringexplorers@gmail.com. Electronic submission is required. The Title should be short and informative. Please include Author name and Affiliation, and contact information. Abstracts should be 300 to 500 words (one page of single-spaced text), and should summarize the main points of the paper. Plain text as the body of the e-mail is preferred. If special formatting is required for intelligibility, please submit a Word document. The cutoff date for submissions is June 15th, 2016. Please note in the submission if you prefer oral or poster presentation.



KEYNOTE SPEAKERS

Stuart Hameroff, anesthesiologist, director of the Center for Consciousness Studies and professor at the University of Arizona, Tucson, USA. Professor Hameroff is best known for his studies and theories on a quantum basis of consciousness.

Johnjoe McFadden, professor of Molecular Genetics at the University of Surrey, United Kingdom. Professor McFadden is best known for his studies on the electromagnetic basis of consciousness.

Rupert Sheldrake, a British biologist and author, and best known for his hypothesis of morphic fields and resonances, which leads to a vision of a living, developing universe with its own inherent memory.

A Panel discussion on Parapsychology and Consciousness will be held with tentative panelists Professor Dick J. Bierman, Professor Etzel Cardeña, Professor Adrian Parker, Professor William Bengston, Assistant Professor Jan Dalkvist, and Dr. Rupert Sheldrake.

A Panel discussion on Quantum Biology and Consciousness will be held with tentative panellists Professor Johnjoe McFadden, Professor Stuart Hameroff, Dr. Rupert Sheldrake, and Professor Hans Liljenström.

RECEPTION & OUTINGS

Welcome Reception: Wednesday, October 12, starting at 7 p.m.

Field Trip: SSE's traditional recreational excursion will be to Uppsala, home of botanist Carl von Linné and Uppsala University. Uppsala Cathedral houses the grave of scientist/mystic Emanuel Swedenborg. Old Uppsala is rich in archaeological remains and has 3 royal mounds.

Banquet: Friday night, October 14.

IMPORTANT DATES for EURO-MEETING

Paper submission due: June 15, 2016

Notification of paper acceptances: July 1, 2016

Early fee deadline for registration: July 15, 2016

Last day for hotel registration at the Sigtuna Foundation: July 15, 2016

Last day for hotel registration at the Sigtuna Hostel: Sept. 15, 2016

Conference: October 13–15 (Thurs. morning through Saturday noon)

ACCOMMODATIONS & TRANSPORTATION

The conference/hotel venue is the **Sigtuna Foundation** (Sigtuna-stiftelsen) in Sigtuna. +46-859258900; info@sigtunastiftelsen.se sigtunastiftelsen.se. A large block of rooms has been reserved (arrival Oct. 12 and departure Oct. 15) at a special rate of 1203 Skr (\$144) (single room) and 1642 Skr (double room) incl. breakfast. Reservations should be made 3 months in advance (by July 15) to receive this rate. Please call or email the hotel. In addition, 20 rooms have been reserved at the Sigtuna Hostel and Folk High School, Sigtuna. +46-859258300. Email: vandrarhem@sigtunafolkhogskola.se. The price is 755 Skr (single room) (\$90) and 1070 Skr (double room) incl. breakfast. Reservations should be made 1 month in advance (by Sept. 15). Please call or email the hostel to reserve your rooms. The hostel is close to Lake Mälaren and to the Sigtuna Foundation (walking distance). If you are looking for even cheaper accommodations, check destinationsigtuna.se/en/. If you are still looking for accommodations, please email Anders Rydberg or Göran Brusewitz. We can supply more suggestions.

The venue is close to Stockholm/Arlanda airport (15 min. by taxi). There is a special taxi price from Arlanda to the Sigtuna Foundation of 310 Skr (\$37): call Taxi 020, at +46-20-202020, www.taxi020.se There are buses from Arlanda to the Sigtuna Foundation. Bus number 579 takes you directly to Sigtuna (+ walk circa 850 m). sl.se/in-english/. Contact the Sigtuna Foundation for more info. sigtunastiftelsen.se. +46-8592589.

Society for Scientific Exploration

Executive Committee

Dr. Bill Bengston
SSE President
St. Joseph's College
Patchogue, New York

Professor Garret Moddel
SSE Vice-President

Dept. of Electrical & Computer Engineering
University of Colorado Boulder, Colorado

Dr. York Dobyns
SSE Treasurer
Lexington, Kentucky

Dr. Mark Urban-Lurain
SSE Secretary
College of Natural Science
Michigan State University
111 N. Kedzie Lab
East Lansing, Michigan 48824

Dr. Chantal Toporow
SSE Education Officer
Northrup Grumman
Redondo Beach, California

Council

Dr. Marsha Adams
International Earthlights Alliance
Sedona, Arizona

Dr. Julie Beischel
The Windbridge Institute
Tucson, Arizona

Dr. Neal Grossman
Department of Philosophy
University of Illinois Chicago
Evanston, Illinois

Dr. Dominique Surel
Energy Medicine University
Evergreen, Colorado

Appointed Officers

Professor Anders Rydberg
SSE European Representative
Uppsala University, Uppsala, Sweden

Carl Medwedeff
SSE Associate Members' Representative
Livonia, Michigan

Professor Peter A. Sturrock
SSE President Emeritus and Founder
Stanford University, Stanford, California

Professor Robert G. Jahn
SSE Vice-President Emeritus and Founder
Princeton University, Princeton, New Jersey

Professor Charles Tolbert
SSE President Emeritus
University of Virginia, Charlottesville, Virginia

Dr. John Reed
SSE Treasurer Emeritus
World Institute for Scientific Exploration
Baltimore, Maryland

Professor Lawrence Fredrick
SSE Secretary Emeritus
University of Virginia, Charlottesville, Virginia

Professor Henry Bauer, *JSE* Editor Emeritus
Dean Emeritus, Virginia Tech
Blacksburg, Virginia

Index of Previous Articles in the *Journal of Scientific Exploration*

Vol: No.	Article	Author(s)
1:1	A Brief History of the Society for Scientific Exploration	P. Sturrock
	Aterations in Recollection of Unusual and Unexpected Events	D. Hall et al.
	Toward a Quantitative Theory of Intellectual Discovery (Esp. in Phys.)	R. Fowler
	Engineering Anomalies Research	R. Jahn et al.
	Common Knowledge about the Loch Ness Monster	H. Bauer
	An Analysis of the Condon Report on the Colorado UFO Project	P. Sturrock
1:2	The Strange Properties of Psychokinesis	H. Schmidt
	What Do We Mean by "Scientific?"	H. Bauer
	Analysis of a UFO Photograph	R. Haines
	Periodically Flashing Lights Filmed off the Coast of New Zealand	B. Maccabee
2:1	Commonalities in Arguments over Anomalies	H. Bauer
	Remote Viewing and Computer Communications—An Experiment	J. Vallee
	Is There a Mars Effect?	M. Gauquelin
	Raising the Hurdle for the Athletes' Mars Effect	S. Ertel
2:2	UFOs and NASA	R. Henry
	The Nature of Time	Y. Terzian
	Operator-Related Anomalies in a Random Mechanical Cascade	B. Dunne et al.
	Evidence for a Short-Period Internal Clock in Humans	T. Slanger
	Three New Cases of Reincarnation Types in Sri Lanka with Written Records	I. Stevenson et al.
3:1	Arguments Over Anomalies: H. ?Polemics	H. Bauer
	Anomalies: Analysis and Aesthetics	R. Jahn
	Trends in the Study of Out-of-Body Experiences	C. Alvarado
	A Methodology for the Objective Study of Transpersonal Imagery	W. Braud/ M. Schlitz
	The Influence of Intention on Random and Pseudorandom Events	D. Radin/J. Utts
	Case of Possession Type in India with Evidence of Paranormal Knowledge	I. Stevenson et al.
3:2	New Ideas in Science	T. Gold
	Photo Analysis of an Aerial Disc Over Costa Rica	R. Haines/J. Vallee
	Three Cases of Children in Northern India Who Remember a Previous Life	A. Mills
	"Signatures" in Anomalous Human–Machine Interaction Data	D. Radin
	A Case of Severe Birth Defects Possibly Due to Cursing	I. Stevenson
4:1	Biochemical Traumatology/Plant Metabolic Disorders in a UFO Landing	M. Bounias
	Return to Trans-en-Provence	J. Vallee
	Analysis of Anomalous Physical Traces: 1981 Trans-en-Provence UFO Case	J. Velasco
	Physical Interpretation of Very Small Concentrations	H. Bauer
	Luminous Phenomena and Seismic Energy in the Central United States	J. Derr/ M. Persinger
	Photo Analysis of an Aerial Disc Over Costa Rica: New Evidence	R. Haines/J. Vallee
	A Scientific Inquiry into the Validity of Astrology	J. McGrew/ R. McFall
	Planetary Influences on Human Behavior: Absurd for a Scientific Explanation?	A. Müller
	Five Arguments against Extraterrestrial Origin of Unidentified Flying Objects	J. Vallee
4:2	Using the Study of Anomalies To Enhance Critical Thinking in the Classroom	M. Swords
	Observations of Electromagnetic Signals Prior to California Earthquakes	M. Adams
	Bayesian Analysis of Random Event Generator Data	W. Jefferys
	Moslem Case of Reincarnation Type in Northern India: Analysis of 26 Cases	A. Mills

- | | |
|---|------------------------|
| Electromagnetic Disturbances Associated with Earthquakes | M. Parrot |
| Extrasensory Interactions between Homo Sapiens and Microbes | C. Pleass/N. Dey |
| Correlation between Mental Processes and External Random Events | H. Schmidt |
| Phobias in Children Who Claim To Remember Previous Lives | I. Stevenson |
| A Gas Discharge Device for Investigating Focused Human Attention | W. Tiller |
| Radio Emissions from an Earthquake | J. Warwick |
| 5:1 The Cydonian Hypothesis | J. Brandenburg et al. |
| Cases in Burma, Thailand, and Turkey: Aspects of I. Stevenson's Research | J. Keil |
| Effects of Consciousness on the Fall of Dice: A Meta-Analysis | D. Radin/D. Ferrari |
| The Wasgo or Sisiutl: A Cryptozoological Sea-Animal | M. Swords |
| The Extraterrestrial Hypothesis Is Not That Bad | R. Wood |
| Toward a Second-Degree Extraterrestrial Theory of UFOs | J. Vallee |
| Low-Frequency Emissions: Earthquakes and Volcanic Eruptions in Japan | T. Yoshino |
| 5:2 Eccles's Model of Mind-Brain Interaction and Psychokinesis | W. Giroladini |
| Ball Lightning and St. Elmo's Fire as Forms of Thunderstorm Activity | A. Grigor'ev et al. |
| Social Scientific Paradigms for Investigating Anomalous Experience | J. McClenon |
| Count Population Profiles in Engineering Anomalies Experiments | R. Jahn et al. |
| Children Claiming Past-Life Memories: Four Cases in Sri Lanka | E. Haraldsson |
| 6:1 Can the UFO Extraterrestrial Hypothesis and Vallee Hypotheses Be Reconciled? | W. Bramley |
| Learning for Discovery: Establishing the Foundations | R. Domaingue |
| On the Bayesian Analysis of REG Data (Response from W. Jefferys) | Y. Dobyms |
| Electrodynamic Activities and Their Role in the Organization of Body Pattern | M. W. Ho et al. |
| 6:2 Review of Approaches to the Study of Spontaneous Psi Experiences | R. White |
| Survival or Super-Psi?: Interchange Responses | I. Stevenson/S. Braude |
| The Psychokinesis Effect: Geomagnetic Influence, Age and Sex Differences | L. Gissurason |
| Are Reincarnation Type Cases Shaped by Parental Guidance? | S. Pasricha |
| 6:3 Heim's Theory of Elementary Particle Structures | T. Auerbach |
| Better Blood through Chemistry: A Laboratory Replication of a Miracle | M. Epstein |
| The Gauquelin Effect Explained? Comments on Müller's Planetary Correlations | S. Ertel |
| The Gauquelin Effect Explained? A Rejoinder to Ertel's Critique | A. Müller |
| Ball Lightning Penetration into Closed Rooms: 43 Eyewitness Accounts | A. Grivor'ev et al. |
| A Series of Possibly Paranormal Recurrent Dreams | I. Stevenson |
| 6:4 Experiments in Remote Human/Machine Interaction | B. Dunne et al. |
| A Low Light Level Diffraction Experiment for Anomalies Research | S. Jeffers et al. |
| A New Look at Maternal Impressions: An Analysis of 50 Published Cases | I. Stevenson |
| Alternative Healing Therapy on Regeneration Rate of Salamander Forelimbs | D. Wirth et al. |
| 7:1 Accultured Topographical Effects of Shamanic Trance Consciousness | P. Devereux |
| Mainstream Sciences vs. Parasciences: Toward an Old Dualism? | G. L. Eberlein |
| Existence of Life and Homeostasis in an Atmospheric Environment | S. Moriyama |
| A Guide to UFO Research | M. D. Swords |
| 7:2 Non-Causality as the Earmark of Psi | H. Schmidt |
| Adequate Epistemology for Scientific Exploration of Consciousness | W. W. Harman |
| Puzzling Eminence Effects Might Make Good Sense | S. Ertel |
| Comments on Puzzling Eminence Effects | J. W. Nienhuys |
| A Systematic Survey of Near-Death Experiences in South India | S. Pasricha |
| The Willamette Pass Oregon UFO Photo Revisited: An Explanation | I. Wieder |

- 7:3 Near Death Experiences: Evidence for Life After Death? M. Schröter-Kunhardt
 Analysis of the May 18, 1992, UFO Sighting in Gulf Breeze, Florida B. Maccabee
 Selection Versus Influence in Remote REG Anomalies Y. Dobyns
 Dutch Investigation of the Gauquelin Mars Effect J. Nienhuys
 Comments on Dutch Investigations of the Gauquelin Mars Effect S. Ertel
 What Are Subtle Energies? W. Tiller
- 7:4 Explaining the Mysterious Sounds Produced by Very Large Meteor Fireballs C. S. L. Keay
 Neural Network Analyses of Consciousness-Related Patterns D. I. Radin
 Applied Parapsychology: Studies of Psychics and Healers S. A. Schouten
 Birthmarks and Birth Defects Corresponding to Wounds on Deceased Persons I. Stevenson
 The "Enemies" of Parapsychology R. McConnell
- 8:1 Survey of the American Astronomical Society Concerning UFOs: Part 1 P. Sturrock
 Anatomy of a Hoax: The Philadelphia Experiment Fifty Years Later J. Vallee
 Healing and the Mind: Is There a Dark Side? L. Dossey
 Alleged Experiences Inside UFOs: An Analysis of Abduction Reports V. Ballester Olmos
 What I See When I Close My Eyes R. Targ
- 8:2 Survey of the American Astronomical Society Concerning UFOs: Part 2 P. Sturrock
 Series Position Effects in Random Event Generator Experiments B. Dunne et al.
 Re-Examination of the Law of Conservation of Mass in Chemical Reactions K. Volkamer et al.
 The 'Genius Hypothesis': Exploratory Concepts for Creativity E. Laszlo
- 8:3 Survey of the American Astronomical Society Concerning UFOs: Part 3 P. Sturrock
 Strong Magnetic Field Detected Following a Sighting of an UFO B. Maccabee
 Complementary Healing Therapy for Patients with Type I Diabetes Mellitus D. P. Wirth
 Report of an Indian Swami Claiming to Materialize Objects E. Haraldsson
- 8:4 Scientific Analysis of Four Photos of a Flying Disk Near Lac Chauvet, France Pierre Guérin
 A Linear Pendulum Experiment: Operator Intention on Damping Rate R. D. Nelson
 Applied Scientific Inference P. A. Sturrock
 The Mind-Brain Problem J. Beloff
- 9:1 Unconventional Water Detection: Field Test of Dowsing in Dry Zones: Part 1 H. Betz
 Digital Video Analysis of Anomalous Space Objects M. Carlotto
 The Critical Role of Analytical Science in the Study of Anomalies M. Epstein
 Near-Death Experiences in South India: A Systematic Survey S. Pasricha
 Human Consciousness Influence on Water Structure L. Pyatnitsky/
 V. Fonkin
- 9:2 Unconventional Water Detection: Field Test of Dowsing in Dry Zones: Part 2 H. Betz
 Semi-molten Meteoric Iron Associated with a Crop Formation W. Levensgood/MJ.
 Burke
 Experiments on a Possible g-Ray Emission Caused by a Chemical Process V. Noninski et al.
 The Effect of Paranormal Healing on Tumor Growth F. Snel/
 P. van der Sijde
 Psychokinetic Action of Young Chicks on the Path of an Illuminated Source R. Peoc'h
 Eddington's Thinking on the Relation between Science and Religion A. Batten
 Two Kinds of Knowledge: Maps and Stories H. Bauer
- 9:3 Experiments on Claimed Beta Particle Emission Decay V. Noninski et al.
 Assessing Commonalities in Randomly Paired Individuals T. Rowe et al.
 Anomalously Large Body Voltage Surges on Exceptional Subjects W. Tiller et al.
 Six Modern Apparitional Experiences I. Stevenson
 Viewing the Future: A Pilot Study with an Error-Detecting Protocol R. Targ et al.
 Could Extraterrestrial Intelligences Be Expected to Breathe Our Air? M. Swords

- 9:4 Decision Augmentation Theory: Applications to Random Number Generators E. May
 Extrasensory Perception of Subatomic Particles & Referee Interchange (Dobyns) S. Phillips
 North American Indian Effigy Mounds A. Apostol
 A Holistic Aesthetic for Science B. Kirchoff
- 10:1 An Assessment of the Evidence for Psychic Functioning J. Utts
 Evaluation of a Program on Anomalous Mental Phenomena R. Hyman
 CIA-Initiated Remote Viewing Program at Stanford Research Institute H. Puthoff
 Remote Viewing at Stanford Research Institute in the 1970s: A Memoir R. Targ
 American Institutes for Research Review of the STAR GATE Program E. May
 FieldREG Anomalies in Group Situations R. Nelson et al.
 Anomalous Organization of Random Events by Group Consciousness D. Radin et al.
- 10:2 Critical Review of the “Cold Fusion” Effect E. Storms
 Do Nuclear Reactions Take Place Under Chemical Stimulation? J. Bockris et al.
 Claimed Transmutation of Elements Caused by a Chemical Process V. Noninski et al.
 Selection versus Influence Revisited: New Methods and Conclusions Y. Dobyns
 Illegitimate Science? A Personal Story B. Maccabee
 Anomalous Phenomena Observed in the Presence of a Brazilian “Sensitive” S. Krippner et al.
- 10:3 Mass Modification Experiment Definition Study R. Forward
 Atmospheric Mass Loss on Mars and the Consequences H. Lammer
 Exploring Correlations between Local Emotional and Global Emotional Events D. Bierman
 Archetypes, Neurognosis and the Quantum Sea C. Laughlin
- 10:4 Distance Healing of Patients with Major Depression B. Greyson
 Cases of the Reincarnation Type: Evaluation of Some Indirect Evidence J. Keil
 Enhanced Congruence between Dreams and Distant Target Material S. Krippner et al.
 Recent Responses to Survival Research (Responses by Braude & Wheatley) R. Almeder
 Toward a Philosophy of Science in Women’s Health Research A. Lettieri
- 11:1 Biased Data Selection in Mars Effect Research S. Ertel/K. Irving
 Is the “Mars Effect” Genuine? P. Kurtz et al.
 Fortean Phenomena on Film: Evidence or Artifact? R. Lange/J. Houran
 Wishing for Good Weather: A Natural Experiment in Group Consciousness R. Nelson
 Empirical Evidence for a Non-Classical Experimenter Effect H. Walach/
 S. Schmidt
 D. Pratt
 Consciousness, Causality, and Quantum Physics
- 11:2 Anomalous Cognition Experiments and Local Sidereal Time S. J. P. Spottiswoode
 Evidence that Objects on Mars are Artificial in Origin M. Carlotto
 The Astrology of Time Twins: A Re-Analysis & Referee Interchange (Roberts) C. French et al.
 Unconscious Perception of Future Emotions: An Experiment in Presentiment D. Radin
 A Bayesian Maximum-Entropy Approach to Hypothesis Testing P. Sturrock
 Planetary Diameters in the Surya-Siddhanta R. Thompson
 Science of the Subjective R. Jahn/B. Dunne
- 11:3 Accessing Anomalous States of Consciousness with Binaural Beat Technology F. Holmes Atwater
 The “Mars Effect” As Seen by the Committee PARA J. Dommanget
 Astrology and Sociability: A Comparative Psychological Analysis S. Fuzeau-Braesch
 Comparison between Children with and without Previous-Life Memories E. Haraldsson
 Did Life Originate in Space? Discussion of Implications of Recent Research A. Mugan
 Correlations of Random Binary Sequences with Pre-Stated Operator Intention R. Jahn et al.
 The Hidden Side of Wolfgang Pauli: An Encounter with Depth Psychology Atmanspacher/
 Primas

- 11:4 Topographic Brain Mapping of UFO Experiencers
 Toward a Model Relating Empathy, Charisma, and Telepathy
 The Zero-Point Field and the NASA Challenge of Create the Space Drive
 Motivation and Meaningful Coincidence: Further Examination of Synchronicity
 A Critique of Arguments Offered against Reincarnation
 The Archaeology of Consciousness
 N. Don/G. Moura
 J. Donovan
 B. Haisch/A. Rueda
 T. Rowe et al.
 R. Almeder
 P. Devereux
- 12:1 Gender Differences in Human/Machine Anomalies
 Statement Validity Analysis of “Jim Ragsdale Story”: Roswell Implications
 Experiment Effects in Scientific Research: How Widely Are They Neglected?
 Roswell—Anatomy of a Myth
 A Different View of “Roswell—Anatomy of a Myth”
 Critique of “Roswell—Anatomy of a Myth”
 B. Dunne
 J. Houran/S. Porter
 R. Sheldrake
 K. Jeffery
 M. Swords
 R. Woods
- 12:2 Physical Evidence Related to UFO Reports
 Empirical Evidence Against Decision Augmentation Theory
 Cases of Reincarnation in Northern India with Birthmarks and Birth Defects
 Can the Vacuum Be Engineered for Spaceflight Applications? Overview.
 Four Paradoxes Involving the Second Law of Thermodynamics
 The Paranormal Is Not Excluded from Physics
 P. A. Sturrock et al.
 Y. Dobyns/R. Nelson
 S. Pasricha
 H. E. Puthoff
 D. Sheehan
 O. Costa de
 Beauregard
- 12:3 Estimates of Optical Power Output in Six Cases of Unexplained Aerial Objects
 Analyses in Ten Cases of Unexplained Aerial Objects with Material Samples
 Do Near-Death Experiences Provide Evidence for Survival of Human Personality
 Anomalous Statistical Influence Depends on Details of Random Process
 FieldREG II: Consciousness Field Effects: Replications and Explorations
 Biological Effects of Very Low Frequency (VLF) Atmospherics in Humans
 J. Vallee
 J. Vallee
 E. Cook et al.
 M. Ibson
 R. D. Nelson et al.
 A. Schienle et al.
- 12:4 The Timing of Conscious Experience: Causality-Violating
 Double-Slit Diffraction Experiment of Investigate Consciousness Anomalies
 Techno-Dowsing: A Physiological Response System to Improve Psi Training
 Physical Measurement of Episodes of Focused Group Energy
 Experimental Studies of Telepathic Group Communication of Emotions
 Strategies for Dissenting Scientists
 F. A. Wolf
 M. Ibson/S. Jeffers
 P. Stevens
 W. Rowe
 J. Dalkvist/
 Westerlund
 B. Martin
- 13:1 Significance Levels for the Assessment of Anomalous Phenomena
 Retrotransposons as Engines of Human Bodily Transformation
 A Rescaled Range Analysis of Random Events
 Subtle Domain Connections to the Physical Domain Aspect of Reality
 Parapsychology in Intelligence: A Personal Review and Conclusions
 Dreaming Consciousness: More Than a Bit Player in the Mind/Body Problem
 R. A. J. Matthews
 C. A. Kelleher
 F. Pallikari/E. Boller
 W. A. Tiller
 K. A. Kress
 M. Ullman
- 13:2 The Effect of “Healing with Intent” on Pepsin Enzyme Activity
 Electronic Device-Mediated pH Changes in Water
 Variations on the Foundations of Dirac’s Quantum Physics
 Do Cases of the Reincarnation Type Show Similar Features over Many Years?
 Optical Power Output of an Unidentified High Altitude Light Source
 Registration of Actual and Intended Eye Gaze: Correlation with Spiritual Beliefs
 Real Communication? Report on a SORRAT Letter-Writing Experiment
 What are the Irreducible Components of the Scientific Enterprise?
 Anomalies in the History of Relativity
 Magic of Signs: A Nonlocal Interpretation of Homeopathy
 T. Bunnell
 W. Dibble/W. Tiller
 J. Edmonds
 J. Keil/I. Stevenson
 B. Maccabee
 G. Schwartz/
 L. Russek
 I. Grattan-Guinness
 I. Stevenson
 I. McCausland
 H. Walach

- 13:3 Second Sight and Family History: Pedigree and Segregation Analyses
Mound Configurations on the Martian Cydonia Plain
Geomorphology of Selected Massifs on the Plains of Cydonia, Mars
Atmosphere or UFO? A Response to the 1997 SSE Review Panel Report
An Unusual Case of Stigmatization
Methuselah: Oldest Myth. or Oldest Man?
Analysis of Technically Inventive Dream-Like Mental Imagery
Exploring the Limits of Direct Mental Influence: Two Studies
- 13:4 Experimental Systems in Mind–Matter Research
Basic Elements and Problems of Probability Theory
The Significance of Statistics in Mind–Matter Research
Introductory Remarks on Large Deviations Statistics
p-adic Information Spaces. Small Probabilities and Anomalous Phenomena
Towards an Understanding of the Nature of Racial Prejudice
Clyde Tombaugh, Mars and UFOs
- 14:1 Investigating Deviations from Dynamical Randomness with Scaling Indices
Valentich Disappearance: New Evidence and New Conclusion
Protection of Mice from Tularemia with Ultra-Low Agitated Dilutions
The Correlation of the Gradient of Shannon Entropy and Anomalous Cognition
Contributions to Variance in REG Experiments: ANOVA Models
Publication Bias: The “File-Drawer” Problem in Scientific Inference
Remote Viewing in a Group Setting
- 14:2 Overview of Several Theoretical Models on PEAR Data
The Ordering of Random Events by Emotional Expression
Energy, Fitness and Information-Augmented EMFs in *Drosophila melanogaster*
A Dog That Seems To Know When His Owner Is Coming Home
What Can Elementary Particles Tell Us about the World in Which We Live?
Modern Physics and Subtle Realms: Not Mutually Exclusive
- 14:3 Plate Tectonics: A Paradigm Under Threat
The Effect of the “Laying On of Hands” on Transplanted Breast Cancer in Mice
Stability of Assessments of Paranormal Connections in Reincarnation Type Cases
ArtREG: A Random Event Experiment Utilizing Picture-Preference Feedback
Can Population Growth Rule Out Reincarnation?
The Mars Effect Is Genuine
Bulky Mars Effect Hard To Hide
What Has Science Come to?
- 14:4 Mind/Machine Interaction Consortium: PortREG Replication Experiments
Unusual Play in Young Children Who Claim to Remember Previous Lives
A Scale to Measure the Strength of Children’s Claims of Previous Lives
Reanalysis of the 1965 Hefl in UFO Photos
Should You Take Aspirin To Prevent Heart Attack?
- S. Cohn
H. Crater/
S. McDaniel
D. Pieri
B. Maccabee
M. Margnelli
L. McKague
B. Towe/
Randall-May
C. Watt et al.
R. Morris
H. Primas
R. Utts
Amann/
Atmanspacher
A. Khrennikov
Hoyle/
Wickramasinghe
M. Swords
Atmanspacher et al.
R. Haines/P.
Norman
W. Jonas/D. Dillner
Spottiswoode/Faith
R. Nelson et al.
J. Scargle
R. Targ/J. Katra
Y. Dobyns
R. Blasband
M. Kohane/
W. Tiller
R. Sheldrake/
P. Smart
R. Bryan
R. Klauber
D. Pratt
Bengston/Krinsley
I. Stevenson/J. Keil
R. G. Jahn et al.
D. Bishai
S. Ertel/K. Irving
S. Ertel
H. Arp
Jahn/Mischo/
Vaitl et al.
I. Stevenson
J. B. Tucker
Druffel/Wood/
Kelson
J. M. Kauffman

- 15:1 The Biomedical Significance of Homocysteine
 20th and 21st Century Science: Reflections and Projections
 To Be Or Not To Be! A 'Paraphysics' for the New Millennium
 Science of the Future in Light of Alterations of Consciousness
 Composition Analysis of the Brazil Magnesium
 Does Recurrent ISP Involve More Than Cognitive Neuroscience?
 K. McCully
 R. G. Jahn
 J. E. Beichler
 I. Barušs
 P. A. Sturrock
 J.-C. Terrillon/
 S. Marques
 Bonham
- 15:2 The Scole Investigation: Critical Analysis of Paranormal Physical Phenomena
 Bio-photons and Bio-communication
 Scalar Waves: Theory and Experiments
 Commentary: On Existence of K. Meyl's Scalar Waves
 Cases of the Reincarnation Type in South India: Why So Few Reports?
 Mind, Matter, and Diversity of Stable Isotopes
 M. Keen
 R. VanWijk
 K. Meyl
 G. W. Bruhn
 S. K. Pasricha
 J. P. Pui/A. A.
 Berezin
 J. P. Pandarakalam
 H. Evans
 D. Stillings
- Are the Apparitions of Medjugorje Real?
 Where Do We File 'Flying Saucers'? Archivist and Uncertainty Principle
 The Bakken: A Library and Museum of Electricity in Life
- 15:3 A Modular Model of Mind/Matter Manifestations (M5)
 The Speed of Thought: Complex Space-Time Metric and Psychic Phenomenon
 Failure to Replicate Electronic Voice Phenomenon
 Experimental Study on Precognition
 Unexplained Temporal Coincidence of Crystallization
 R. G. Jahn/B. J.
 Dunne
 E. A. Rauscher/
 R. Targ
 I. Barušs
 Vasilescu/Vasilescu
 Constain/Davies
- 15:4 The Challenge of Consciousness
 Anomalies and Surprises
 Earth Geodynamic Hypotheses Updated
 Unexplained Weight Gain Transients at the Moment of Death
 Physico-Chemical Properties of Water Following Exposure to Resonant Circuits
 R. G. Jahn
 H. H. Bauer
 N. C. Smoot
 L. E. Hollander, Jr.
 C. Cardella et al.
- 16:1 Can Physics Accommodate Clairvoyance, Precognition, and Psychokinesis?
 The Pineal Gland and the Ancient Art of Iatromathematica
 Confounds in Deciphering the Ramey Memo from the Roswell UFO Case
 The Pathology of Organized Skepticism
 Aspects of the Wave Mechanics of Two Particles in a Many Body Quantum System
 Microscopic Theory of a System of Interacting Bosons: A Unifying New Approach
 Unification of the Physics of Interacting Bosons and Fermions
 The Pathology of Organized Skepticism
 R. Shoup
 F. McGillion
 J. Houran/
 K. D. Randle
 L. D. Leiter
 Y. S. Jain
 Y. S. Jain
 Y. S. Jain
 L. D. Leiter
- 16:2 Arguing for an Observational Theory of Paranormal Phenomena
 Differential Event-Related Potentials to Targets and Decoys in Guessing Task
 Stigmatic Phenomena: An Alleged Case in Brazil
 The Case for the Loch Ness "Monster": The Scientific Evidence
 What's an Editor To Do?
 J. M. Houtkooper
 McDonough/Don/
 Warren
 S. Krippner
 H. H. Bauer
 H. H. Bauer
- 16:3 M*: Vector Representation of the Subliminal Seed Regime of M5
 Can Longitudinal Electromagnetic Waves Exist?
 Development of Certainty about the Deceased in Reincarnation Case in Lebanon
 R. G. Jahn
 G. W. Bruhn
 Haraldsson/
 Izzeddin

- Manifestation and Effects of External Qi of Yan Xin Life Science Technology Yan et al.
 Face-Like Feature at West Candor Chasma, Mars MGS Image AB 108403 Crater/Levasseur
 A Search for Anomalies W. R. Corliss
 Common Knowledge about the Loch Ness Monster: Television, Videos, and Film H. H. Bauer
- 16:4 Relationships Between Random Physical Events and Mass Human Attention D. Radin
 Coherent Consciousness and Reduced Randomness: Correlations on 9/11/2001 R. D. Nelson
 Was There Evidence of Global Consciousness on September 11, 2001? J. Scargle
 A Dog That Seems To Know When His Owner Is Coming Home D. Radin
 An Investigation on the Activity Pattern of Alchemical Transmutations J. Pérez-Pariente
 Anomalies in Relativistic Rotation R. D. Klauber
 The Vardøgr, Perhaps Another Indicator of the Non-Locality of Consciousness L. D. Leiter
 Review of the Perrott-Warrick Conference Held at Cambridge 3–5 April 2000 B. Carr
 Wavelike Coherence and CPT Invariance: Sesames of the Paranormal O. Costa de
 Beauregard
 Rauscher/Targ
- Why Only 4 Dimensions Will Not Explain Relationships in Precognition
- 17:1 Problems Reporting Anomalous Observations in Anthropology C. Richards
 The Fringe of American Archaeology A. B. Kehoe
 Rocks That Crackle and Sparkle and Glow: Strange Pre-Earthquake Phenomena F. T. Freund
 Poltergeists, Electromagnetism and Consciousness W. G. Roll
 AIDS: Scientific or Viral Catastrophe? N. Hodgkinson
- 17:2 Information and Uncertainty in Remote Perception Research B. J. Dunne/R. G.
 Jahn
 Problems of Reproducibility in Complex Mind–Matter Systems H. Atmanspacher
 Parapsychology: Science or Pseudo-Science? M.-C. Mousseau
 The Similarity of Features of Reincarnation Type Cases Over Many Years: I. Stevenson/
 A Third Study E. Haraldsson
 Communicating with the Dead: The Evidence Ignored. Why Paul Kurtz is Wrong M. Keen
 Purported Anomalous Perception in a Highly Skilled Individual: G. E. Schwartz/
 Observations, Interpretations, Compassion L. A. Nelson/L. G.
 Russek
 Proof Positive—Loch Ness Was an Ancient Arm of the Sea F. M. Dougherty
- 17:3 Radiation Hormesis: Demonstrated, Deconstructed, Denied, J. M. Kauffman
 Dismissed, and Some Implications for Public Policy
 Video Analysis of an Anomalous Image Filmed during Apollo 16 H. Nakamura
 The Missing Science of Ball Lightning D. J. Turner
 Pattern Count Statistics for the Analysis of Time Series in Mind–Matter Studies W. Ehm
 Replication Attempt: No Development of pH or Temperature Oscillations L. I. Mason/
 in Water Using Intention Imprinted Electronic Devices R. P. Patterson
 Three Cases of the Reincarnation Type in the Netherlands T. Rivas
- 17:4 Testing a Language-Using Parrot for Telepathy R. Sheldrake/A.
 Morgana
 Skin Conductance Prestimulus Response: Analyses, Artifacts and a S. J. P. Spottiswode
 Pilot Study /E. C. May
 Effects of Frontal Lobe Lesions on Intentionality and Random M. Freedman/S.
 Physical Phenomena Jeffers/K. Saeger/
 Physical Phenomena /M. Binns/S. Black
 The Use of Music Therapy as a Clinical Intervention for Physiologist D. S. Berger/
 Functional Adaptation Media Coverage of Parapsychology D. J. Schneck/
 and the Prevalence of Irrational Beliefs M.-C. Mousseau
 The Einstein Mystique I. McCausland

- 18:1 A Retrospective on the *Journal of Scientific Exploration*
 Anomalous Experience of a Family Physician
 Historical Overview & Basic Facts Involved in the Sasquatch or
 Bigfoot Phenomenon
 The Sasquatch: An Unwelcome and Premature Zoological Discovery?
 Midfoot Flexibility, Fossil Footprints, and Sasquatch Steps:
 New Perspectives on the Evolution of Bipedalism
 Low-Carbohydrate Diets
 B. Haisch/M. Sims
 J. H. Armstrong, Sr.
 J. Green
 J. A. Bindernagel
 D. J. Meldrum
 J. M. Kauffman
- 18:2 Analysis of the Columbia Shuttle Disaster—
 Anatomy of a Flawed Investigation in a Pathological Organization
 Long-Term Scientific Survey of the Hessdalen Phenomenon
 Electrodermal Presentiments of Future Emotions
 Intelligent Design: Ready for Prime Time?
 On Events Possibly Related to the “Brazil Magnesium”
 Entropy and Subtle Interactions
 “Can a Single Bubble Sink a Ship?”
 J. P. MacLean/
 G. Campbell/
 S. Seals
 M. Teodorani
 D. I. Radin
 A. D. Gishlick
 P. Kaufmann/
 P. A. Sturrock
 G. Moddel
 D. Deming
- 18:3 The MegaREG Experiment
 Replication and Interpretation Time-Series Analysis of a Catalog of UFO
 Events: Evidence of a Local-Sidereal-Time Modulation
 Challenging Dominant Physics Paradigms
 Ball Lightning and Atmospheric Light Phenomena: A Common Origin?
 Y. H. Dobyns et al.
 P. A. Sturrock
 J. M. Campanario/
 B. Martin
 T. Wessel-Berg
- 18:4 Sensors, Filters, and the Source of Reality
 The Hum: An Anomalous Sound Heard Around the World
 Experimental Test of Possible Psychological Benefits of Past-Life Regression
 Inferences from the Case of Ajendra Singh Chauhan: The Effect of Parental
 Questioning, of Meeting the “Previous Life” Family, an Attempt To
 Quantify Probabilities, and the Impact on His Life as a Young Adult
 Science in the 21st Century: Knowledge Monopolies and Research Cartels
 Organized Skepticism Revisited
 R. G. Jahn/
 B. J. Dunne
 D. Deming
 K. Woods/I. Baruš
 A. Mills
 H. H. Bauer
 L. D. Leiter
- 19:1 The Effect of a Change in Pro Attitude on Paranormal Performance:
 A Pilot Study Using Naive and Sophisticated Skeptics
 The Paradox of Planetary Metals
 An Integrated Alternative Conceptual Framework to Heat
 Engine Earth, Plate Tectonics, and Elastic Rebound
 Children Who Claim to Remember Previous Lives: Cases with
 Written Records Made before the Previous Personality Was Identified
 L. Storm/
 M. A. Thalbourne
 Y. Almirantis
 S. T. Tassos/
 D. J. Ford
 H. H. Jürgen Keil/
 J. B. Tucker
- 19:2 Balls of Light: The Questionable Science of Crop Circles
 Children of Myanmar Who Behave like Japanese Soldiers: A Possible Third
 Element in Personality
 Challenging the Paradigm
 The PEAR Proposition
 Global Warming, the Politicization of Science, and Michael Crichton’s
 State of Fear
 F. Grassi/C. Cocheo/
 P. Russo
 I. Stevenson/J. Keil
 B. Maccabee
 R. G. Jahn/B. J.
 Dunne
 D. Deming

- 19:3 A State of Belief Is a State of Being
Anomalous Orbic "Spirit" Photographs? A Conventional Optical Explanation Charles Eisenstein
G. E. Schwartz/
K. Creath
Some Bodily Malformations Attributed to Previous Lives S. K. Pasricha et al.
A State of Belief Is a State of Being C. Eisenstein
HIV, As Told by Its Discoverers H. H. Bauer
Kicking the Sacred Cow: Questioning the Unquestionable
and Thinking the Impermissible H. H. Bauer
- 19:4 Among the Anomalies J. Clark
What Biophoton Images of Plants Can Tell Us about Biofields and Healing K. Creath/
G. E. Schwartz
Demographic Characteristics of HIV: I. How Did HIV Spread? H. H. Bauer
- 20:1 Half a Career with the Paranormal I. Stevenson
Pure Inference with Credibility Functions M. Aickin
Questioning Answers on the Hessdalen Phenomenon M. Leone
Hessdalen Research: A Few Non-Questioning Answers M. Teodorani
Demographic Characteristics of HIV: II. How Did HIV Spread H. H. Bauer
Organized Opposition to Plate Tectonics:
The New Concepts in Global Tectonics Group D. Pratt
- 20:2 Time-Normalized Yield: A Natural Unit for Effect Size in R. D. Nelson
Anomalies Experiments
The Relative Motion of the Earth and the Ether Detected S. J. G. Gift
A Unified Theory of Ball Lightning and Unexplained Atmospheric Lights P. F. Coleman
Experimenter Effects in Laboratory Tests of ESP and PK Using a
Common Protocol C. A. Roe/
R. Davey/P. Stevens
Demographic Characteristics of HIV: III. Why Does HIV Discriminate by Race H. H. Bauer
- 20:3 Assessing the Evidence for Mind-Matter Interaction Effects D. Radin et al.
Experiments Testing Models of Mind-Matter Interaction D. Radin
A Critique of the Parapsychological Random Number Generator M. H. Schub
Meta-Analyses of Radin and Nelson
Comment on: "A Critique of the Parapsychological Random Number
Generator Meta-Analyses of Radin and Nelson" J. D. Scargle
The Two-Edged Sword of Skepticism: Occam's Razor and Occam's Lobotomy H. H. Bauer
- 20:4 Consciousness and the Anomalous Organization of Random Events: L. A. Nelson/
The Role of Absorption G. E. Schwartz
Ufology: What Have We Learned? M. D. Swords
- 21:1 Linking String and Membrane Theory to Quantum Mechanics & Special M. G. Hocking
Relativity Equations, Avoiding Any Special Relativity Assumptions
Response of an REG-Driven Robot to Operator Intention R. G. Jahn et al.
Time-Series Power Spectrum Analysis of Performance in Free Response P. A. Sturrock/
Anomalous Cognition Experiments S. J. Spottiswoode
A Methodology for Studying Various Interpretations of the
N,N-dimethyltryptamine-Induced Alternate Reality M. A. Rodriguez
An Experimental Test of Instrumental Transcommunication I. Baruš
An Analysis of Contextual Variables and the Incidence of Photographic
Anomalies at an Alleged Haunt and a Control Site D. B. Terhune et al.
The Function of Book Reviews in Anomalistics G. H. Hövelmann
Ockham's Razor and Its Improper Use D. Gernert
Science: Past, Present, and Future H. H. Bauer

- 21:2 The Role of Anomalies in Scientific Exploration P. A. Sturrock
 The Yantra Experiment Y. H. Dobyns et al.
 An Empirical Study of Some Astrological Factors in Relation to Dog Behaviour S. Fuzeau-Braesch/
 Differences by Statistical Analysis & Compared with Human Characteristics J.-B. Denis
 Exploratory Study: The Random Number Generator and Group Meditation L. I. Mason et al.
 Statistical Consequences of Data Selection Y. H. Dobyns
- 21:3 Dependence of Anomalous REG Performance on Run length R. G. Jahn/
 Y. H. Dobyns
 Dependence of Anomalous REG Performance on Elemental Binary Probability R. G. Jahn/
 J. C. Valentino
 Effect of Belief on Psi Performance in a Card Guessing Task K. Walsh/
 G. Moddel
 An Automated Online Telepathy Test R. Sheldrake/
 M. Lambert
 Three Logical Proofs: The Five-Dimensional Reality of Space–Time J. E. Beichler
 Children Who Claim to Remember Previous Lives: Past, Present, & Future Research J. B. Tucker
 Memory and Precognition J. Taylor
 AIDS, Cancer and Arthritis: A New Perspective N. Hodgkinson
 Online Historical Materials about Psychic Phenomena C. S. Alvarado
- 21:4 Synthesis of Biologically Important Precursors on Titan Sam H. Abbas/
 Is the Psychokinetic Effect as Found with Binary Random Number D. Schulze-
 Generators Suitable to Account for Mind–Brain Interaction? Makuch/
 Wolfgang Helfrich
 Explorations in Precognitive Dreaming Dale E. Graff
 Climate Change Reexamined Joel M. Kauffman
 Franklin Wolff's Mathematical Resolution of Existential Issues Imants Barušs
 From Healing to Religiosity Kevin W. Chen
- 22:1 Theme and Variations: The Life and Work of Ian Stevenson Emily Williams
 Kelly/
 Carlos S. Alvarado
 Ian Stevenson: Recollections Kerr L. White
 Reflections on the Life and Work of Ian Stevenson Alan Gauld
 Ian Stevenson and Cases of the Reincarnation Type Jim B. Tucker
 Ian Stevenson and the Modern Study of Spontaneous ESP Experiences Carlos S. Alvarado/
 Nancy L. Zingrone
 Ian Stevenson's Contributions to Near-Death Studies Bruce Greyson
 Ian Stevenson's Contributions to the Study of Mediumship Erlendur
 Haraldsson
 Where Science and Religion Intersect: The Work of Ian Stevenson Edward F. Kelly/
 Emily Williams
 Kelly
 The Gentle American Doctor M.M. Abu-Izzeddin
 Professor Ian Stevenson—Some Personal Reminiscences Mary Rose
 Barrington
 Ian Stevenson: A Recollection and Tribute Stephen E. Braude
 Ian Stevenson and His Impact on Foreign Shores Bernard Carr
 Ian Stevenson: Gentleman and Scholar Lisette Coly
 The Quest for Acceptance Stuart J. Edelstein
 Ian Stevenson: Founder of the Scientific Investigation of Human Reincarnation Doris Kuhlmann-
 Wilsdorf
 Remembering My Teacher L. David Leiter

Comments on Ian Stevenson, M.D., Director of the Division of Personality Studies and Pioneer of Reincarnation Research	Antonia Mills
Ian Stevenson: Reminiscences and Observations	John Palmer
Dr. Ian Stevenson: A Multifaceted Personality	Satwant K. Pasricha
A Good Question	Tom Shroder
The Fight for the Truth	John Smythies
Ian Stevenson: A Man from Whom We Should Learn	Rex Stanford
Ian Stevenson and the Society for Scientific Exploration	Peter A. Sturrock
Ian Stevenson's Early Years in Charlottesville	Ruth B. Weeks
Tribute to a Remarkable Scholar	Donald J. West
An Ian Stevenson Remembrance	Ray Westphal
22:2 Meditation on Consciousness	I. Ivztan
An Exploration of Degree of Meditation Attainment in Relation to Psychic Awareness with Tibetan Buddhists	S. M. Roney-Dougal/ J. Solfvin/J. Fox
Thematic Analysis of Research Mediums' Experiences of Discarnate Communication	A. J. Rock/J Beischel/ G. E. Schwartz
Change the Rules!	R. G. Jahn/ B. J. Dunne
Proposed Criteria for the Necessary Conditions for Shamanic Journeying Imagery	A. J. Rock/S. Krippner
"Scalar Wave Effects according to Tesla" & "Far Range Transponder" by K. Meyl	D. Kühlke
How to Reject Any Scientific Manuscript	D. Gernert
22:3 Unusual Atmospheric Phenomena Observed Near the Channel Islands, United Kingdom, 23 April 2007	J.-F. Baure/ D. Clarke/ P. Fuller/M. Shough
The GCP Event Experiment: Design, Analytical Methods, Results	P. Bancel/R. Nelson
New Insights into the Links between ESP and Geomagnetic Activity	Adrian Ryan
Phenomenology of N,N-Dimethyltryptamine Use: A Thematic Analysis	C. Cott/A. Rock
Altered Experience Mediates the Relationship between Schizotypy and Mood Disturbance during Shamanic-Like Journeying	A. Rock/G. Abbott/ N. Kambouropoulos
Persistence of Past-Life Memories: Study of Adults Who Claimed in Their Childhood To Remember a Past Life	E. Haraldsson
22:4 Energy, Entropy, and the Environment (How to Increase the First by Decreasing the Second to Save the Third)	D. P. Sheehan
Effects of Distant Intention on Water Crystal Formation: A Triple-Blind Replication	D. Radin/N. Lund/ M. Emoto/T. Kizu
Changes in Physical Strength During Nutritional Testing	C. F. Buhler/ P. R. Burgess/ E. VanWagoner
Investigating Scopesesthesia: Attentional Transitions, Controls and Error Rates in Repeated Tests	Rupert Sheldrake/ Pamela Smart
Shakespeare: The Authorship Question, A Bayesian Approach	P. A. Sturrock
An Anomalous Legal Decision	Richard Blasband
23:1 A New Experimental Approach to Weight Change Experiments at the Moment of Death with a Review of Lewis E. Hollander's Experiments on Sheep	Masayoshi Ishida
An Automated Test for Telepathy in Connection with Emails	R. Sheldrake/ L. Avraamides
Brain and Consciousness: The Ghost in the Machines	John Smythies

- In Defense of Intuition: Exploring the Physical Foundations of Spontaneous Apprehension Ervin Laszlo
- 23:2 Appraisal of Shawn Carlson's Renowned Astrology Tests
A Field-Theoretic View of Consciousness: Reply to Critics Suitbert Ertel
D.W. Orne-Johnson/
Robert M. Oates
Super-Psi and the Survivalist Interpretation of Mediumship
Michael Sudduth
Perspectival Awareness and Postmortem Survival Stephen E. Braude
- 23:3 Exploratory Evidence for Correlations between Entrained
Mental Coherence and Random Physical Systems Dean Radin/
F. Holmes Atwater
Scientific Research between Orthodoxy and Anomaly Harald Atmanspacher
- 23:4 Cold Fusion: Fact or Fantasy? M. E. Little/S. R.
Little
"Extraordinary Evidence" Replication Effort M. E. Little/S. R.
Little
Survey of the Observed Excess Energy and Emissions in Lattice-
Assisted Nuclear Reactions Mitchell R. Swartz
- 24:1 Rebuttal to Claimed Refutations of Duncan MacDougall's Experiment
on Human Weight Change at the Moment of Death Masayoshi Ishida
Unexpected Behavior of Matter in Conjunction with Human Consciousness Dong Shen
Randomized Expectancy-Enhanced Placebo-Controlled Trial of the Impact
of Quantum BioEnergetics and Mental Boundaries on Affect Adam J. Rock/
Fiona E. Permezel/
A Case of the Reincarnation Type in Turkey Suggesting Strong
Paranormal Information Involvements Jürgen Keil
Questions of the Reincarnation Type Jürgen Keil
How To Improve the Study and Documentation of Cases of the
Reincarnation Type? A Reappraisal of the Case of Kemal Atasoy Vitor Moura Visoni
- 24:2 Importance of a Psychosocial Approach for a Comprehensive
Understanding of Mediumship E. Maraldi/F. Ma-
chado/W. Zangari
Investigating Mental Mediums: Research Suggestions from the
Historical Literature Carlos S. Alvarado
Advantages of Being Multiplex Michael Grosso
Some Directions for Mediumship Research Emily W. Kelly
Parapsychology in France after May 1968: A History of GERP Renaud Evrard
Remy Chauvin (1913–2009) Renaud Evrard
- 24:3 Anomalous Magnetic Field Activity During a Bioenergy Healing
Experiment Margaret M. Moga/
William F. Bengston
Further Evidence of the Possibility of Exploiting Anticipatory Physiological
Signals To Assist Implicit Intuition of Random Events Patrizio E. Tressoldi/
M. Martinelli/
Laura Scartezzini/
Stefano Massaccesi
Fire in Copenhagen and Stockholm. Indridason's and Swedenborg's
"Remote Viewing" Experiences E. Haraldsson/
Johan L. F. Gerding
Soal's Target Digits: Statistical Links Back to the Source
He Reported After All Roderick Garton
Common Paranormal Belief Dimensions Neil Dagnall/
Andrew Parker/
Gary Munley/
K. Drinkwater/
Antonio Giuditta
- The 1907 Psychokinetic Experiments of Professor Filippo Bottazzi Antonio Giuditta

- 24:4 Psi in a Sceptic's Lab: A Successful Replication of Ertel's Ball Selection Test
Anticipatory Alarm Behavior in Bengalese Finches
The Daniel Experiment: Sitter Group Contributions
with Field RNG and MESA Recordings
- Field RNG Data Analysis, Based on Viewing the Japanese
Movie *Departures (Okuribito)*
- The Healing Connection: EEG Harmonics, Entrainment,
and Schumann's Resonances
- Laboratory Psi Effects May Be Put to Practical Use
- 25:1 Are There Stable Mean Values, and Relationships
between Them, in Statistical Parapsychology?
Exploring the Relationship between Tibetan
Meditation Attainment and Precognition
A Faulty PK Meta-Analysis
Karhunen-Loève Transform for Detecting Ionospheric
Total Electron Content (TEC) Anomalies
Prior to the 1999 Chi-Chi Earthquake, Taiwan
Eusapia Palladino: An Autobiographical Essay
Mental Health of Mediums and Differential Diagnosis between
Mediumship and Mental Disorders
- 25:2 Objective Analyses of Real-Time and Audio Instrumental
Transcommunication and Matched Control Sessions:
A Pilot Study
Measurement Controls in Anomalies Research
Hessdalen Lights and Piezoelectricity from Rock Strain
Retroactive Event Determination and the Interpretation
of Macroscopic Quantum Superposition States in
Consistent Histories and Relational Quantum Mechanics
Thoughts about Thought Bundles: A Commentary on Jürgen Keil's
Paper "Questions of the Reincarnation Type"
Reply to the Nahm and Hassler Commentary on Jürgen Keil's
Paper "Questions of the Reincarnation Type"
The Desire for the Development of Flight: A Recurrent Theme
for Advanced Civilizations?
- 25:3 Reflections on the Context of Near-Death Experiences
An Important Subject at the Institut Métapsychique International:
Jeanne LaPlace
A Baby Sea-Serpent No More: Reinterpreting Hagelund's
Juvenile "Cadborosaur" Report
Avian Formation on a South-Facing Slope Along the Northwest
Rim of the Argyre Basin
- Suitbert Ertel
Fernando Alvarez
Mike Wilson/
Bryan J. Williams/
Timothy M. Harte/
William J. Roll
Takeshi Shimizu/
Masato Ishikawa
Luke Hendricks/
William F. Bengston/
Jay Gunkelman
James Carpenter
- Wolfgang Helfrich
Serena Roney-
Dougal/Jerry Solfvín
Wilfried Kugel
- Jyh-Woei Lin
Carlos S. Alvarado
Adair Menezes Jr./
Alexander Moreira-Almeida
- Mark Boccuzzi/
Julie Beischel
- Walter E. Dibble Jr.
William A. Tiller
Gerson S. Paiva
C. A. Taft
Sky Nelson
- Michael Nahm
Dieter Hassler
Jürgen Keil
- B. Reiswig
D. Schulze-Makuch
- Michael Nahm
Guilio Caratelli
Maria Luisa Felici
M. A. Woodley
D. Naish
C. A. McCormick
Michael A. Dale
George J. Haas
James S. Miller
William R. Saunders
A. J. Cole
Susan Orosz
Joseph M. Friedlander

- Guest Editorial: On Wolverines and Epistemological Totalitarianism Etzel Cardeña
- 25:4 Revisiting the Ganzfeld Debate: A Basic Review and Assessment Bryan J. Williams/
The Global Consciousness Project: Identifying the Source of Psi Edwin C. May/S.
James P. Spottiswoode
- Reply to May and Spottiswoode's on Experimenter Effect as the Roger Nelson
Explanation for GCP Results
- Reply to May and Spottiswoode's "The Global Consciousness Project: Peter Bancel
Identifying the Source of Psi" Edwin C. May/S.
James P. Spottiswoode
- The Global Consciousness Project, Identifying the Source of Psi: Neil Dagnell/
A Response to Nelson and Bancel Kenneth Drinkwater/
Andrew Parker
- Alien Visitation, Extra-Terrestrial Life, and Paranormal Beliefs
- Anomalous Switching of the Bi-Stable Percept of a Necker Cube: Dick J. Bierman
A Preliminary Study Gerson S. Paiva/
Carlton A. Taft
- Color Distribution of Light Balls in the Hessdalen Lights Phenomenon
- On Elephants and Matters Epistemological: Reply to Etzel Cardeña's Neal Grossman
Guest Editorial "On Wolverines and Epistemological Totalitarianism"
- Response to Neal Grossman's Reply "On Elephants and Matters Epistemological" Etzel Cardeña
- Ernesto Bozzano: An Italian Spiritualist and Psychical Researcher Luca Gasperini
Obituary: In Memory of William Corliss Patrick Huyghe
Letter: Pipefish or Pipe dream? Ed L. Bousfield/
Paul H. LeBlond
- 26:1 A Review of Sir William Crooke's Papers on Psychic Force with Masayoshi Ishida
Some Additional Remarks on Psychic Phenomena
- The Implications of Near-Death Experiences for Research into David Rousseau
the Survival of Consciousness Courtney Brown
- Remote Viewing the Future with a Tasking Temporal Outbounder Graeme D. Montgomery
Relativistic Variations in the Permittivity and Permeability of Carlos S. Alvarado/
Free Space = Gravitation Renaud Evrard
- Historical Perspective: The Psychic Sciences in France: Historical Thomas E. Bullard
Notes on the *Annales des Science Psychiques* Michael Woodley/
Obituary: Dr. Stuart Appelle: 1946–2011 Cameron McCormick/
Letter: Response to Bousfield and LeBlond: Shooting Pipefish Darren Naish
in a Barrel; or, Sauropterygian Mega-Serpents and
Occam's Razor
- 26:2 A PK Experiment with Zebra Finches and a Virtual Predator Fernando Alvarez
Revisiting the Alexander UFO Religious Crisis Survey (AUFORCS): Jeff Levin
Is There Really a Crisis? Grzegorz Juszcak
- Hallucinatory Telepathic Experiences Induced by *Salvia divinorum* Adam Crabtree
- Hypnosis Reconsidered, Resituated, and Redefined Etzel Cardeña/
Commentary: A Proposal That Does Not Advance Our Understanding Devin P. Terhune
of Hypnosis
- Commentary: Comments on Crabtree's "Hypnosis Reconsidered, Charles T. Tart
Resituated, and Redefined"
- Commentary: Regarding "Hypnosis Reconsidered, Resituated, and Don Beere
Redefined": A Commentary on Crabtree
- Reply to Three Commenters on "Hypnosis Reconsidered, Resituated, Adam Crabtree
and Redefined"

- Historical Perspective: The Sorcerer of Cobenzl and His Legacy: The Life
of Baron Karl Ludwig von Reichenbach, His Work and Its Aftermath Michael Nahm
Obituary: William Roll Loyd Auerbach
Letter to the Editor: Erroneous Expert Judgments Henry H. Bauer
- 26:3 Earthquake Triggering: Verification of Insights Obtained by Intuitive
Consensus William H. Kautz
Audience Size Effects in Field RNG Experiments: The Case of
Japanese Professional Baseball Games Takeshi Shimizu/
Masato Ishikawa
Panic Healing: Documenting Use, Expectations, and Perceived
Benefits of a Little-Known Therapy in the United States Maritza Jauregui/
Tonya L. Schuster/
Mary D. Clark/
Joie P. Jones
Andrew Paquette
Carlos S. Alvarado
J. Alexander de Ru/
John C.M.J. de Groot/
Jan-Willem M. Elshof
- A New Approach to Veridicality in Dream Psi Studies Andrew Paquette
Historical Perspective: Distortions of the Past Carlos S. Alvarado
Essay: The Review Reviewed: Stop Publication Bias J. Alexander de Ru/
John C.M.J. de Groot/
Jan-Willem M. Elshof
- 26:4 The Bell Inequality and Nonlocal Causality Charles W. Lear
Magnetic Anomalies and the Paranormal John Ralphs
NDE Implications from a Group of Spontaneous Long-Distance
Veridical OBEs Andrew Paquette
Gerhard Mayer/
Martin Garms
Resonance between Birth Charts of Friends: The Development of a
New Astrological Tool on the Basis of an Investigation into
Astrological Synastry Carlos S. Alvarado
Historical Perspective: Notes on Early Mediumship Henry H. Bauer
Essay: Seeking Immortality? Challenging the Drug-Based Medical
Paradigm. SSE Dinsdale Award Address James S. Ferris
Letter to the Editor: Identity of Shakespeare
- 27:1 Longitudinal Electromagnetic Waves? The Monstein-Wesley
Experiment Reconstructed Edward Butterworth/
Charles B. Allison/
Daniel Cavazos/
Frank M. Mullen
Ted Davis/
Don C. Donderi/
Budd Hopkins
Francis Beauvais
Serge Kernbach
Carlos S. Alvarado
Tricia Robertson
Caroline Watt
Adrian Ryan
John D. Ralphs
- The UFO Abduction Syndrome
- Description of Benveniste's Experiments Using Quantum-Like Probabilities Francis Beauvais
Replication Attempt: Measuring Water Conductivity with Polarized Electrodes Serge Kernbach
Commentary: The Influence of Reichenbach's Concept of Od Carlos S. Alvarado
Obituary: Archie E. Roy Dies at 88 Tricia Robertson
Letter to the Editor: Registering Parapsychological Experimentss Caroline Watt
Letter to the Editor: Magnetic Anomalies and the Paranormal Adrian Ryan
Letter to the Editor: Response to Adrian Ryan John D. Ralphs
- 27:2 Use of a Torsion Pendulum Balance to Detect and Characterize What
May Become a Human Energy Field J. Norman Hansen/
Joshua A. Lieberman
Geometry of an Intense Auroral Column as Recorded in Rock Art M. A. van der Sluijs/
Robert J. Johnson
David Deming
Did Modern Humans Originate in the Americas? A Retrospective on
the Holloman Gravel Pit in Oklahoma
Experimental Birthmarks: New Cases of an Asian Practice Jim B. Tucker/
H. H. Jürgen Keil

- Commentary: A Critical Response to David Lund's Argument for Postmortem Survival Michael Sudduth
- Obituary: Jack Houck (1939–2013) John Alexander
- Obituary: Ted Rockwell (1922–2013) John Alexander
- 27:3 Psi Effects or Sensory Leakage: Scrutinizing the Bell Selection Test Suitbert Ertel
The Sheep–Goat Effect as a Matter of Compliance vs. Noncompliance: Lance Storm/
The Effect of Reactance in a Forced-Choice Ball Selection Test S. Ertel/Adam Rock
Unidentified Aerial Phenomena (UAP): A New Hypothesis Toward Daniel M. Gross
The Explanation
- Building Alien Worlds—The Neuropsychology and Evolutionary Implications of the Astonishing Psychoactive Effects of Andrew R. Gallimore
N,N-Dimethyltryptamine (DMT)
- Historical Perspective: Three Stages of Modern Science Henry H. Bauer
- 27:4 Hum and Otoacoustic Emissions May Arise Out of the Same Mechanisms Franz G. Frosch
A Case of a Japanese Child with Past-Life Memories Masayuki Ohkado
Unidentified Aerial Phenomena: The VASP-169 Flight Brazilian Episode Luiz Augusto daSilva
Revisited
- Historical Perspective: Nineteenth Century Psychical Research in Mainstream Journals: *The Revue Philosophique de la France et de l'Étranger* Carlos s. Alvarado/
Renaud Evrard
- 28:1 Stock Market Prediction Using Associative Remote Viewing by Christopher Carson Smith/
Inexperienced Remote Viewers Darrell Laham/
Garret Moddel
- An Experimental Study for Reproduction of Biological Anomalies Reported in the Hoeven 1999 Crop Circle Eltjo H. Haselhoff/
Robert J. Boerman/
Jan-Willem Bobbink
Stephen C. Jett
- Pre-Columbian Transoceanic Influences: Far-Out Fantasy, Unproven Possibility, or Undeniable Reality? Stephen C. Jett
- G. Stanley Hall on "Mystic or Borderline Phenomena" Carlos S. Alvarado
Anomalistics, Pseudo-Science, Junk Science, Denialism: Henry H. Bauer
Corollaries of the Role of Science in Society
- Letter to the Editor: Exaggerated Emphasis Peter A. McCue
- 28:2 The Development and Phenomena of a Circle for Physical Mediumship Michael Nahm
Investigations of the Felix Experimental Group: 2011–2013 Stephen E. Braude
Commentary: On the Essay Review "William Jackson Crawford on the Goligher Circle" by Michael Tymn Michael Nahm
Commentary: On W. J. Crawford's Studies of Physical Mediumship Carlos S. Alvarado
Obituary: Halton Christian "Chip" Arp, 1927–2013 Peter A. Sturrock
- 28:3 Anomalous 'Retrosausal' Effects on Performances in a Go/NoGo Task Dick J. Bierman
& Aron Bijl
- An Investigation of Solar Features, Test Environment, and Gender Related to Consciousness-Related Deviations in a Random Physical System Joey M. Caswell/
Lyndon M. Juden-Kelly/
David A. E. Vares/
Michael A. Persinger
Ohkado Masayuki
& Ikegawa Akira
- Children with Life-between-Life Memories Henry H. Bauer
- Essay: Shasmans of Scientism: Conjuring Certainty Where There Is None Carlos S. Alvarado
Obituary: Eileen Coly (1916-2013) & Nancy Zingrone

- 28:4 Psychological Evaluation of American Children Who Report Memories of Previous Lives Jim B. Tucker & F. Don Nidiffer
- Facial Features of Burmese with Past-Life Memories as Japanese Soldiers Ohkado Masayuki
- Parapsychological Phenomena as Examples of Generalized Nonlocal Correlations—A Theoretical Framework Harald Walach/Walter von Lucadou/Hartmann Römer
- Aberrant Salience and Motivation as Factors in the Formation of Beliefs in Scientifically Unacceptable Phenomena Harvey J. Irwin
- Historical Perspective: Does a Cosmic Ether Exist? Evidence from Dayton Miller and Others James DeMeo
- Obituary: John O'M. Bockris, 1923–2013
- Edmund Storms
- Review: *Crimes of Reason* by Stephen Braude Stan McDaniel
- Review: *Las Alas de Psique* [The Wings of Psyche] by Alejandro Parra Carlos A. Alvarado
- Review: *The Spiritualist Movement* edited by Christopher Moreman Alan Gauld
- Review: *One Mind* by Larry Dossey Roger Nelson
- Review: *Bava's Gift* by Michael Urheber Bob Ginsberg
- 29:1 Twitter Followers Biased to Astrological Charts of Celebrities Renay Oshop & Andrew Foss
- The Human Bioenergy Field Detected by a Torson Pendulum? The Effect of Shielding and a Possible Conventional Explanation Willem H. van den Berg/William G. van der Sluys
- Commentary: Reply to van den Berg and van der Sluys: Effects Resembling a Biofield on a Torsion Pendulum Cannot Be Caused by the Subject John Norman Hansen/Joshua A. Lieberman
- Commentary: Response to Hansen and Lieberman Willem H. van den Berg/William G. van der Sluys
- Introduction to Honorton Article and Pilkington Interview with Parise Stephen E. Braude
- Commentary: A Moving Experience [reprinted from JASPR] Charles Honorton
- Commentary: Interview with Felicia Parise, August 6, 2013 Rosemarie Pilkington
- Historical Perspective: Note on an Early Physiological Index of ESP John Purdon's Observations of Synchronous Pulse Rates Carlos S. Alvarado
- 29:2 Modeling the Law of Times Julio Plaza del Olmo
- Can Solar Activity Influence the Occurrence of Economic Recessions? Mikhail Gorbanev
- A Correlation Study between Human Intention and the Output of a Binary Random Event Generator H. Grote
- Commentary on "Does a Cosmic Ether Exist? Evidence from Dayton Miller and Others" Robert D. Klauber
- Commentary: The Ether and Psychic Phenomena: Some Old Speculations Carlos S. Alvarado
- Commentary: The Importance of Retractions and the Need to Correct the Downstream Literature Jaime A. Teixeira da Silva
- Essay: Essay Review of *The Survival Hypothesis* Alan Gauld
- 29:3 Can Death-Related Dreams Predict Future Deaths? Evidence from a Dream Journal Comprising Nearly 12,000 Dreams Andrew Paquette
- A Review on the Relation between Population Density and UFO Sightings Julio Plaza del Olmo
- Multivariate Entropy Analysis of Oxidative Stress Biomarkers Following Mobile Phone Exposure of Human Volunteers: A Pilot Study Anthony Marconi
- Albert Tasteyre
- René de Sèze, Paul Fogel
- Guy Simoneau, Marc Conti
- Christian Sarbach
- S. Stanley Young
- Jean-Emmanuel Gilbert
- Yolène Thomas
- Historical Perspective: Telepathic Emissions: Edwin J. Houston on "Cerebral Radiation" Carlos S. Alvarado
- Letter to the Editor: Quality in Parapsychological Meta-Analyses Dick J. Bierman

29:4 Testing Telepathy in the Medium/Proxy-Sitter Dyad: A Protocol Focusing on the Source-of-Psi Problem	Adam J. Rock & Lance Storm
Shortage of Rabbits or Insufficient Traps? Table-Turning and the Discovery of a Presumably PK-Gifted person in Argentina	Juan Gimeno
Essay: The Unbearable Fear of Psi: On Scientific Suppression in the 21st Century	Etzel Cardeña
Appendix 1: Introduction to <i>Non-Ordinary Mental Expressions</i>	Etzel Cardeña & Enrico Facco
Essay Review: Climate Change Science or Climate-Change Propaganda? <i>Climate Change: Evidence & Causes—An Overview from the Royal Society and the U.S. National Academy of Sciences</i>	Henry H. Bauer
Commentary: Professor Bauer Has It Backwards	Peter A. Bancel
Commentary: Notes on the Essay Review of <i>Climate Change: Evidence and Causes</i> , by Henry Bauer	Andrew Foss
Commentary: Response to Commentaries by Peter Bancel and Andrew Foss	Henry H. Bauer
Letter to the Editor: Is Consensus in Science Good?	Ron Westrum



JOURNAL OF SCIENTIFIC EXPLORATION

ORDER FORM FOR 2008 – current PRINT ISSUES

JSE Volumes 1–21 are available FREE at scientificexploration.org
 (JSE Vol. 22–25 are free to SSE members at <http://journalofscientificexploration.org/index.php/jse/login>)
 JSE Print Volumes 22–28 (2008–current) are available for \$20/issue; use form below.

Year	Volume	Issue	Price	×	Quantity	= Amount
			\$20			

Postage is included in the fee.					
---------------------------------	--	--	--	--	--

					ENCLOSED	
--	--	--	--	--	----------	--

Name			Send to: SSE 230 Sandford Avenue North Plainfield NJ 07060-4329 ssemembership@gmail.com Phone (1) (609) 349-8059		
Address					
Phone/Fax					

<input type="checkbox"/>	I am enclosing a check or money order
--------------------------	---------------------------------------

<input type="checkbox"/>	Please charge my credit card as follows: <input type="checkbox"/> VISA <input type="checkbox"/> MASTERCARD
--------------------------	--

Card Number	Expiration
-------------	------------

Signature

<input type="checkbox"/> Send me information on the Society for Scientific Exploration
--



GIFT JSE ISSUES AND GIFT SSE MEMBERSHIPS

Single Issue: A single copy of this issue can be purchased.
For back issues, see order form on previous page and Index.
Price: \$20.00

Subscription: To send a gift subscription, fill out the form below.
Price: \$85 (online)/\$145(print & online) for an individual
\$165/\$225 (online only/print) for library/institution/business

Gift Recipient Name _____

Gift Recipient Address _____

Email Address of Recipient for publications _____

- I wish to purchase a single copy of the current JSE issue.
- I wish to remain anonymous to the gift recipient.
- I wish to give a gift subscription to a library chosen by SSE.
- I wish to give myself a subscription.
- I wish to join SSE as an Associate Member for \$85/yr or \$145/yr (print), and receive this quarterly journal (plus the EdgeScience magazine and The Explorer newsletter).

Your Name _____

Your Address _____

Send this form to: *Journal of Scientific Exploration*
Society for Scientific Exploration
230 Sandford Avenue
North Plainfield NJ 07060-4329

ssemembership@gmail.com
Phone (1) (609) 349-8059

For more information about the Journal and the Society, go to
<http://www.scientificexploration.org>



JOIN THE SOCIETY AS A MEMBER

The Society for Scientific Exploration has four member types:

Associate Member (\$85/year with online Journal; \$145 includes print Journal): Anyone who supports the goals of the Society is welcome. No application material is required.

Student Member (\$40/year includes online Journal; \$100/year includes print Journal): Send proof of enrollment in an accredited educational institution.

Full Member (\$125/year for online Journal; \$185/year includes Print Journal): Full Members may vote in SSE elections, hold office in SSE, and present papers at annual conferences. Full Members are scientists or other scholars who have an established reputation in their field of study. Most Full Members have: a) doctoral degree or equivalent; b) appointment at a university, college, or other research institution; and c) a record of publication in the traditional scholarly literature. Application material required: 1) Your curriculum vitae; 2) Bibliography of your publications; 2) Supporting statement by a Full SSE member; or the name of Full SSE member we may contact for support of your application. Send application materials to SSE Secretary Mark Urban-Lurain, urban@msu.edu

Emeritus Member (\$85/year with online Journal; \$145/year includes print Journal): Full Members who are now retired persons may apply for Emeritus Status. Please send birth year, retirement year, and institution/company retired from.

All SSE members receive: online quarterly *Journal of Scientific Exploration (JSE)*, *EdgeScience* online magazine, *The Explorer* online newsletter, notices of conferences, access to SSE online services, searchable recent *Journal* articles from 2008–current on the JSE site by member password, and for all 25 years of previous articles on the SSE site. For additional new benefits, see World Institute for Scientific Exploration, instituteforscientificexploration.org

Your Name _____

Email _____

Phone _____ Fax _____

Payment of _____ enclosed, or

Charge My VISA Mastercard

Card Number _____ Expiration _____

Send this form to:
Society for Scientific Exploration
230 Sandford Avenue
North Plainfield NJ 07060-4329 USA
ssemembership@gmail.com
Phone (1) (609) 349-8059

For more information about the Journal and the Society, go to
<http://www.scientificexploration.org>



Instructions to Authors (Revised February 2013)

Please submit all manuscripts at <http://journalofscientificexploration.org/index.php/jse/login> (please note that “www” is NOT used in this address). This website provides directions for author registration and online submission of manuscripts. Full Author Instructions are posted on the Society for Scientific Exploration’s website at http://www.scientificexploration.org/documents/instructions_for_authors.pdf for submission of items for publication in the *Journal of Scientific Exploration* (including “Writing the Empirical Journal Article.” Before you submit a paper, please familiarize yourself with the *Journal* by reading JSE articles. (Back issues can be browsed in electronic form with SSE membership login at <http://journalofscientificexploration.org>, click on Archive link; issues before 2008 are freely accessible at <http://www.scientificexploration.org/journal/articles.html>) Electronic files of text, tables, and figures at resolution of a minimum of 300 dpi (TIF or PDF preferred) will be required for online submission. You will also need to attest to a statement online that the article has not been previously published and is not submitted elsewhere. *JSE* Managing Editor, EricksonEditorial@gmail.com.

AIMS AND SCOPE: The *Journal of Scientific Exploration* publishes material consistent with the Society’s mission: to provide a professional forum for critical discussion of topics that are for various reasons ignored or studied inadequately within mainstream science, and to promote improved understanding of social and intellectual factors that limit the scope of scientific inquiry. Topics of interest cover a wide spectrum, ranging from apparent anomalies in well-established disciplines to paradoxical phenomena that seem to belong to no established discipline, as well as philosophical issues about the connections among disciplines. The *Journal* publishes research articles, review articles, essays, book reviews, and letters or commentaries pertaining to previously published material.

REFEREEING: Manuscripts will be sent to one or more referees at the discretion of the Editor-in-Chief. Reviewers are given the option of providing an anonymous report or a signed report.

In established disciplines, concordance with accepted disciplinary paradigms is the chief guide in evaluating material for scholarly publication. On many of the matters of interest to the Society for Scientific Exploration, however, consensus does not prevail. Therefore the *Journal of Scientific Exploration* necessarily publishes claimed observations and proffered explanations that will seem more speculative or less plausible than those appearing in some mainstream disciplinary journals. Nevertheless, those observations and explanations must conform to rigorous standards of observational techniques and logical argument.

If publication is deemed warranted but there remain points of disagreement between authors and referee(s), the reviewer(s) may be given the option of having their opinion(s) published along with the article, subject to the Editor-in-Chief’s judgment as to length, wording, and the like. The publication of such critical reviews is intended to encourage debate and discussion of controversial issues, since such debate and discussion offer the only path toward eventual resolution and consensus.

LETTERS TO THE EDITOR intended for publication should be clearly identified as such. They should be directed strictly to the point at issue, as concisely as possible, and will be published, possibly in edited form, at the discretion of the Editor-in-Chief.

PROOFS AND AUTHOR COPIES: Authors will receipt copyedited, typeset page proofs for review. Print copies of the published *Journal* will be sent to all named authors.

COPYRIGHT: Authors retain copyright to their writings. However, when an article has been submitted to the *Journal of Scientific Exploration* for consideration, the *Journal* holds first serial (periodical) publication rights. Additionally, after acceptance and publication, the Society has the right to post the article on the Internet and to make it available via electronic as well as print subscription. The material must not appear anywhere else (including on an Internet website) until it has been published by the *Journal* (or rejected for publication). After publication in the *Journal*, authors may use the material as they wish but should make appropriate reference to the prior publication in the *Journal*. For example: “Reprinted from [or From] “[title of article]”, *Journal of Scientific Exploration*, vol. [xx], no. [xx], pp. [xx], published by the Society for Scientific Exploration, <http://www.scientificexploration.org>.”

DISCLAIMER: While every effort is made by the Publisher, Editors, and Editorial Board to see that no inaccurate or misleading data, opinion, or statement appears in this *Journal*, they wish to point out that the data and opinions appearing in the articles and announcements herein are the sole responsibility of the contributor concerned. The Publisher, Editors, Editorial Board, and their respective employees, officers, and agents accept no responsibility or liability for the consequences of any such inaccurate or misleading data, opinion, or statement.