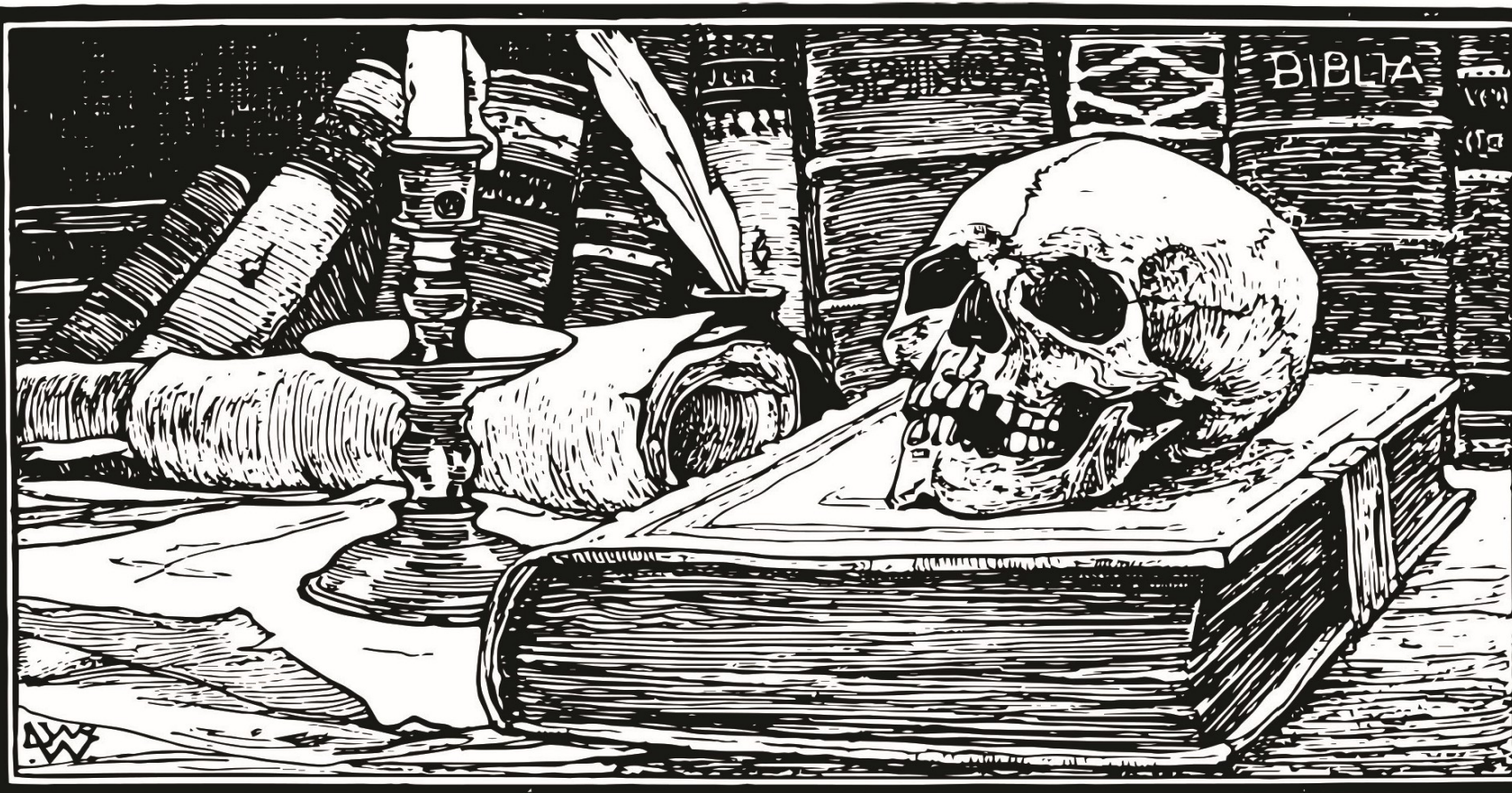
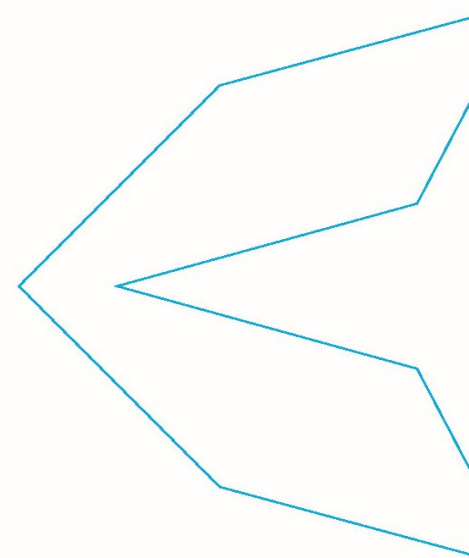


Journal of
**Scientific
Exploration**

Anomalistics
and
Frontier
Science



A Publication of the



**SOCIETY
FOR
SCIENTIFIC
EXPLORATION**

**VOLUME 38
ISSUE 2**

Summer 2024



Editor-in-Chief: James Houran, Editor@ScientificExploration.org

Managing Editor: Brian Laythe, Journal@ScientificExploration.org

Manuscript Submission: <http://journalofscientificexploration.org/index.php/jse/>

Published by the Society for Scientific Exploration (SSE)—<https://www.scientificexploration.org>

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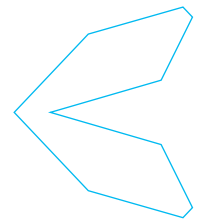
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EDITORIAL

‘Seven Deadly’ Author Sins that Subvert Scientific Progress



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<https://doi.org/10.31275/20243441>

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Imagine what more could be learned or achieved across science and industry if we substantially curtailed, if not eliminated, key barriers to the advancement and dissemination of new thinking and reliable research. This is easier said than done though as overt obstacles to progress abound, including (i) ideological bias in higher education (Magness & Waugh, 2022-2023), (ii) restricted data-sharing (Tedersoo et al., 2021), (iii) fluctuating levels of collaborations that promote research novelty (Shin et al., 2022), (iv) ongoing plagiarism of academic ideas or works (Masic, 2014), (v) experimenter fraud (Fanelli, 2009), (vi) editor resistance to correcting or retracting problematic articles (Friedman et al., 2020), (vii) lack of cumulative model-building or theory formation per insufficient literature reviews (Maggio et al., 2016), (viii) publication bias for confirmatory research (Dwan et al., 2008), (ix) inadequate funding for particular topics or fields (Wang et al., 2018), and (x) a general decline in academic freedom (Kinzelbach et al., 2023). But consider another obstacle that is often covert but no less troublesome — namely, *poor author etiquette* related to the preparation, submission, or revision of scientific works.

Peer review is arguably more art than science but always a ‘contact sport,’ with many approaches available like single- or double-blind, transparent, collaborative, and post-publication formats (Horbach & Halffman, 2018). Some academics have even discussed the idea of using machine learning (ML) or artificial intelligence (AI) for peer review rather than relying on bias-prone humans (cf. Nigam et al., 2021). But whatever the type, peer review aims to be a proactive and protective service to authors and the broader readership alike. It fundamentally helps authors to strengthen or sharpen their works by identifying gaps in logic, weak points of assumptions or arguments, or insufficient methodological details that would better contextualize the results or conclusions. Besides fostering a clearer understanding for readers, optimizing the clarity of papers is also critical for other researchers to reproduce or replicate an author’s methods and findings (National Academies of Science, Engineering, & Medicine et al., 2019). We appreciate the sentiment that “...the work of science has nothing whatever to do with consensus” (Crichton, 2003, p. 5), but this assertion is not strictly accurate. A type of consensus happens via the socialization and cumulative validation of knowledge over time. Such cross-checks are an inherent part of the scientific process, with peer review being a time-tested component.

Sadly, our editorial team has wrestled with an uptick in the frequency and severity of problematic behavior by prospective authors. We will delve into the specifics below, but this situation is perhaps exacerbated by increases in *JSE*’s number of submissions, the ideological diversity of its authors, and our platinum, open-access format that is more vulnerable to the spamming or trolling commonly encountered within online com-



munities (de Seta, 2018). Of course, grumbles about peer review procedures in the *Journal* are not a new development (see, e.g., Braude, 2010a, 2010b). All this might be the inevitable price of providing a popular platform to discuss inherently controversial and often hotly contested issues. Nevertheless, it is important to acknowledge and confront barriers to advancement whenever possible. Editorial teams are not merely administrative tacticians that produce journals but rather active *facilitators* of the scientific process. It is a never-ending job that would be made considerably easier with the benefit of author assistance versus resistance. And as we will see, this involves calibrating on rather simple and straightforward expectations of professional conduct.

FACING THE SEVEN DEADLY SINS

The scientific process requires collaboration among researchers, academic institutions, peer reviewers, journal editors, and readerships, all of whom forge a com-

plex process of quality control relative to the accuracy or meaning of published concepts and research findings (Rutherford & Ahlgren, 1991). Poor author etiquette can cause many unfortunate ripple effects that undercut various stages of knowledge advancement. Indeed, anything that squanders editorial teams' limited time and material resources interrupts, to an extent, the efficient operations of (a) peer review, (b) editorial evaluation, and (c) academic publishing—all of which collectively help to drive science.

The 'Seven Deadly Sins'—a philosophical concept with a fascinating history—can be construed as certain virtues taken to the extreme (Bloomfield, 1952; Newhauser & Ridyard, 2012; Tucker, 2015; for a lay-friendly overview, see McGowan, 2019). Also known as the capital vices or sins, the standard list includes *pride, greed, wrath, envy, lust, gluttony, and sloth*. An EBSQ online art exhibition featured a dramatic 2005 work by Valerie Meijer that depicted the seven deadly sins and included an eloquent description explaining how "Each

Table 1. Comparison of Editors' Averaged Incidence and Impact Rates of "Seven Deadly Author Sins."

Deadly Sin	Illustrative Behavior	JSE	JSE	Maverick Journals (n = 5)	Maverick Journals (n = 5)	Mainstream Journals (n = 5)	Mainstream Journals (n = 5)
		Frequency Rating ^a (1-4)	Severity Rating ^b (1-4)	Frequency Rating ^a (1-4)	Severity Rating ^b (1-4)	Frequency Rating ^a (1-4)	Severity Rating ^b (1-4)
Greed	Quickly or sloppily prepared submissions that do not match Aims & Scope or the format of the Journal.	4.0	3.5	3.2	2.4	3.6	2.4
Lust	Complaints about "overly long" review periods that seemingly stem from desire for instant gratification.	2.5	2.5	2	1.6	2.6	1.8
Pride	Downplaying or ignoring the feedback from peer-reviewers or even the revision requirements set by the editorial team.	3.0	3.5	2.8	2.8	2.6	2.6
Wrath	Emotional or irrational reactions to critical feedback from the peer reviewers or editorial team.	3.0	4.0	2.4	2.6	2.2	2.2
Gluttony	Overindulging in superfluous or duplicative information, including excessive citations.	2.5	2.5	2.4	2.2	2.0	1.8
Envy	Discourteous or self-inflated correspondence to the editorial team which holds presumed authority or prestige over necessary rules of publication.	3.0	3.5	2.0	1.8	2.0	1.2
Sloth	Untimely or superficial review of article proofs that delays production or introduces errors needing later correction.	2.5	2.5	2.6	2.4	2.2	2.0

Notes: ^a 1 = Never ; 2 = Rarely; 3 = Sometimes; 4 = Often ^b 1 = Not at all a problem ; 2 = Minor Problem; 3 = Moderate Problem; 4 = Serious Problem.

[sin] stems from the same beast. Pride is wrapped in its own world of self-admiration, Greed has a one-track mind on possessing whatever it can, while Envy eyeballs its goods. Wrath is completely consumed in fiery blindness, whereas Lust, Gluttony, and Sloth live like parasites and feed upon this beastly serpent” (ebsqart.com).

This concept of deadly sins has been used to frame various academic or industry discussions, ranging from research pitfalls (Picho & Artino, 2016) and issues with manuscript writing (Trail & James, 2016) to application challenges related to supply chain logistics (Stock, 2001) or clinical therapies (Loss et al., 2020). Similarly, it dawned on us that these deadly sins may also describe those author’s behaviors that frequently disrupt *JSE*’s daily operations. Table 1 outlines the behaviors in question and gives our joint ratings of their estimated prevalence and problematic nature via 4-point Likert scales. The metrics reported here represent not only our evaluations but also comparisons to the averaged ratings of a small but relevant group of journal editors who routinely deal with frontier science topics in their respective *niche* ($n = 5$) or *general* journals ($n = 5$). In particular, we crafted an online ‘Science Editor Survey’ for respondents to rate each ‘author sin’ on its relative incidence and impact according to their editorial observations. This confidential survey was sent to a larger sample of 13 fellow editors in frontier science that we compiled through a joint discussion about suitable journals.

TRENDS ACROSS SOME MAVERICK JOURNALS

The data in Table 1 represents a 71% response rate—a respectable result that suggests strong interest in the topic of author misbehavior. To reiterate, our findings reflect the editors’ insights from two distinct categories: (a) Five frontier science or maverick periodicals consisting of the *Australian Journal of Parapsychology*; *Journal of Anomalous Experience and Cognition*; *Journal of Parapsychology*; *Journal of the Society for Psychical Research*; and *Zeitschrift für Anomalistik*, as compared to (b) Five general outlets including *Consciousness and Cognition*; *International Journal of Transpersonal Studies*; *New Ideas in Psychology*; *Psychology of Consciousness: Theory, Research, and Practice*; and *Psychological Reports*. These are not a representative selection of periodicals, but they are highly relevant sources that can hint at important trends in author behavior. This is also enough information to draw some preliminary parallels between *JSE* and similar journals.

Our results suggest that we are not alone in dealing with certain author behaviors. Table 1 shows that both journal categories rated their most *common* problem as “Quickly or sloppily prepared submissions that do not

match the Aims & Scope or the format of the journal,” whereas the most *severely* rated problem was “Downplaying or ignoring the feedback from peer-reviewers or even the revision requirements set by the editorial team.” This latter finding partly harkens to prior observations that one of the top reasons for journal rejection is the failure to conduct a thorough, accurate, and up-to-date literature review that identifies an important problem and places the study in proper context (Artino et al., 2015; Bordage, 2001). But a wider view of the Seven Deadly Sins suggests that “Greed, Pride, and Sloth” are the prime culprits that taint submissions. Therefore, authors can substantively help maverick (or other) journals by heeding three critical calls to action—which might be simple in principle but more difficult in practice:

- *Carefully prepare* papers using a balanced array of background information to properly contextualize the topic in question.
- *Intentionally submit* works to journals that cater to the intended audience.
- *Thoughtfully revise* the original submissions per the feedback from peer reviewers and editors.

On the latter point, we also stress that critical parts of finalizing publications are *authors submitting reasonably polished manuscripts and correcting their article proofs promptly and meticulously*. This has become an ongoing problem for the *JSE* team. Our internal copyediting and proofing process regularly catches numerous obvious errors in each article that authors somehow missed during their corrections. Many of these mistakes can easily be remedied before submission by using editing software. Further, these mistakes often involve outdated or incomplete references, which requires even more editorial time and resources to cross-check and amend. No one (including us) are perfect proof-readers, but unreasonably poor attention-to-detail must be avoided as error-laden papers seriously undermine the reputations of both authors and journals. Consider the well-established ‘beauty bias’ in psychology whereby people equate ‘beauty’ with ‘goodness’ (and vice versa). Well, this effect likewise applies to evaluations of written material (Boland & Queen, 2016). We therefore urge readers to search online for “proofing problems in academic publishing” and consult suitable resources to improve their accuracy when correcting article proofs.

But taken all together, our most problematic experiences are with the most egregious of the seven deadly sins, namely, Wrath. The numerous cogs and wheels of

the *Journal*, which need to be tended to with each issue, never benefit from unprofessional conduct or behavior, particularly when the author's wrath is in rebellion to universal expectations of academic paper publishing. Appropriate citation, transparency in methods or mathematics, the need for clarity in writing for the general readership, or honest interpretation regarding the strength and practical significance of statistical inference testing are non-negotiable requirements of publishing a scientific article. Our encounters in these situations are always a 'rock and a hard place', as our foremost priority is the integrity and standard of the *Journal*. No one would want us to 'bend' these standards for special cases, regardless of the individual status of any given author. Wrath from the author when we enforce these standards helps neither the *Journal* nor, ultimately, the author's own standing in the academic community.

FUELING SCIENCE WITH PASSION, NOT PETULANCE

Further research on authors' attitudes and behaviors is a greenfield topic, which should be extremely helpful for refining or improving journal operations across all academic fields (see, e.g., McGlashan & Hadley, 2016). To be sure, editors have a solemn responsibility to help identify and disseminate reliable scientific information to the broader community (Friedman et al., 2020). Our informal Editor Survey thus could be repeated with larger and more diverse samples that rate our list (or an expanded set) of 'author misbehaviors.' It would also be interesting to compare the deadly sins of prospective authors who submit to general vs. niche journals, open access vs. print, or platinum vs. fee-based. The statistical modeling of large datasets in this context might reveal whether authors tend to progressively exhibit these behaviors in predictable ways, as well as if certain behaviors or combinations thereof are more disruptive to editorial teams than others. For sure, this simple exercise affirmed our concern that the accrued inconveniences or irritations of even minor offenses (inadvertently though they might be) can clog up the editorial works and thereby stymie the efficient reporting of scientific advancements.

Academic freedom is not synonymous with a license to deter, distract, or distress editorial teams. Likewise, no researcher or laboratory is above the procedural rules and behavioral expectations that govern peer review at the heart of the scientific process. *JSE* strives to support prospective authors with empathy and respect, but this does not imply a tolerance for excessively wasted time and resources, which are both sparse from the outset. So, what best explains 'author sins'? Many forces are likely

at work. For instance, one survey respondent privately put it this way, "Most universities put considerable pressure on authors to publish in the high profile Q1 journals that have high impact factors, etc. In my humble opinion, I think the kinds of authors that scramble to publish in top-line journals also happen to be career-focused, ambitious, pressured, very sure of themselves and their abilities or expertise, and they are stressed out as a result, and do not take kindly to criticism, especially when peers or editors make more work for them than they think is necessary" (personal communication to J. Houran, 28 August 2023). The devil might well be in the details when it comes to confronting authors' sins in systematic and effective ways across academia.

As with different forms of peer review, there are many publication options for authors who simply want to share their thoughts and ideas *swiftly* or *freely* outside the confines of the formal literature—e.g., books and monographs, personal blogs, *PsyArXiv* and other preprint repositories, as well as social media sites like Academia.edu, ResearchGate, or Substack. Some people also share video-recorded presentations of their past or latest work on forums such as Facebook, Instagram, Vimeo, or YouTube. There is nothing wrong with leveraging or consulting any of these or related outlets, as long as one understands that such content inherently has little to no quality control and thus only supplements formally peer-reviewed information. It could be said that science is as science does. Authors can unwittingly sabotage themselves by working against the submission and review process, so we encourage them always to be mindful and act in the most courteous ways that respect and support efficient scientific publishing and the advancement of knowledge that comes with it. To be fair, editors and peer reviewers themselves are far from perfection and must grapple with their own sins (e.g., Friedman et al., 2020; Seidel Malkinson et al., 2023; Smith, 2006); there are complaints and criticisms aplenty to go around. But ultimately, the focus here boils down to a familiar but important plea—please help us editors to help you authors. This concludes today's homily, so now go and sin no more. And please pass the collection plate on your way.

ACKNOWLEDGMENTS

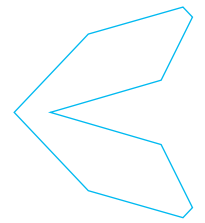
We thank those who kindly completed our Science Editor Survey—Etsel Cardeña, Glenn Hartelius, John G. Kruth, Stephen J. Lynn, Gerhard Mayer, Lance Storm, Malcolm B. Schofield, Bennett L. Schwartz, Cory Scherer, and Devin B. Terhune. Our appreciation also goes to Stephen Braude for comments on an earlier draft, and we happily report no complaints from him about our attitude or be-

havior during that review.

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RESEARCH
ARTICLE

Near-Death Experiences are Caused by the Separation of Consciousness from the Body: An NDE Scale Analysis

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SUBMITTED January 15, 2024

ACCEPTED March 16, 2024

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243317>

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HIGHLIGHTS

New analysis of survey data suggests that near-death experiences are profound subjective perceptions caused by the separation of a person's consciousness from their physical body.

ABSTRACT

Near-death experiences (NDEs) cannot be defined merely as a collection of phenomenal features. An accurate definition needs to describe what NDEs essentially are, that is, what *lies behind* the phenomenal features. The definition would describe what happens in the experience to account for the different features; this can only be fully described in the context of an *underlying theoretical framework*. In this paper, we propose the mind entity framework, which holds that a human being is a nonmaterial mind united with the physical body. In an NDE, the mind, or seat of consciousness, separates from the body and operates independently of it until the mind returns to and reunites with the body. From this framework, we identified the nine NDE features from the 16 features of the NDE Scale (Greyson, 1983) that specifically imply the separation of the mind from the body. The five most prevalent of these "separation" features accounted for 98.8% of NDEs in a sample of NDE accounts in the IANDES Experience Registry (N=565). The prevalence of these five "essential" NDE features was repeated in three other large NDE datasets published in the last 20 years. Therefore, an NDE can be defined as a profound subjective experience caused by a person's consciousness separating from their physical body.

KEYWORDS

Near-death experience definition; out-of-body experience; separation of consciousness from the body; near-death experience scale; near-death-like experience.

INTRODUCTION

What would you say to a journalist who wants a soundbite answer to "What is a near-death experience (NDE)?" Would you simply list the different NDE features? In our view, a phenomenon cannot be defined in terms of its phenomenal elements or features. The definition can be expressed only in terms of the phenomenon's *underlying framework*, that is, the conceptual structure that de-

scribes what *lies behind* the phenomenal features. What is happening during an NDE that gives rise to the NDEr's phenomenal experience? The phenomenal features that fit the framework are *essential*, while other features would be derivative or even incidental features. The collection of the *essential* features can be considered the archetype of the phenomenon.

In this paper, we present a theoretical framework that explains the phenomenon of near-death experiences

in terms of the *separation of consciousness from the physical body*. We then apply this framework to NDE data derived from NDE Scale results (Greyson, 1983). We propose that the “essential” and “derivative” features of NDEs confirm the validity of this framework as an explanation of the phenomenon.

The Problem of Defining NDEs

Throughout the initial years of NDE research, NDEs were described and analyzed based on their phenomenal features. The initial researchers created more or less formalized lists of NDE features.

Raymond Moody (1975, 1978): The Core Near-Death Experience

NDEs were first described by Raymond Moody in 1975 based on his interviews with approximately 150 subjects. Their cases fell into three categories (Moody, 1975, pp. 16–18):

- the experiences of persons who were resuscitated after having been adjudged or pronounced clinically dead by a doctor;
- the experiences of persons who came very close to physical death from an accident, a severe injury, or illness, or
- the experiences of persons who, as they died, told them to people who were present who later related the content of the death experience.

Moody focused his study on 50 first-hand reports in the first two categories. From these cases, he developed a list of 15 elements (pp. 25–107) which included:

- elements of the NDE *per se*: hearing the news, feelings of peace, the noise, the tunnel, out-of-body perceptions, meeting deceased persons or spiritual beings, the Being of Light, the life review, the border or limit, and coming back;
- elements representing aftereffects: ineffability, telling others, effects on the NDEr’s life, and new views of death; and
- the element of corroboration of perceptions during the NDE.

Three years later, Moody (1978, pp. 5–6) restated the “theoretically complete model experience” comprising these elements in a narrative form:

A man is dying, and as he reaches the point of greatest physical distress, he hears himself pronounced dead by his doctor. He begins to hear an uncomfortable noise, a loud ringing or buzzing,

and at the same time, he feels himself moving very rapidly through a long tunnel. After this, he suddenly finds himself outside of his own physical body but still in the immediate physical environment, and he sees his own body from a distance as though he is a spectator. He watches the resuscitation attempt from this unusual vantage point and is in a state of emotional upheaval.

After a while, he collects himself and becomes more accustomed to his odd condition. He notices that he still has a “body,” but one of a very different nature and with very different powers from the physical body he has left behind. Soon, other things begin to happen. Others come to meet and to help him. He glimpses the spirits of relatives and friends who have already died, and a loving, warm spirit of a kind he has never encountered before—a being of light—appears before him. This being asks him a question, non-verbally, to make him evaluate his life and helps him along by showing him a panoramic, instantaneous playback of the major events of his life. At some point he finds himself approaching some sort of barrier or border, apparently representing the limit between earthly life and the next life. Yet, he finds that he must go back to the Earth, that the time for his death has not yet come. At this point, he resists, for by now, he is taken up with his experiences in the afterlife and does not want to return. He is overwhelmed by intense feelings of joy, love, and peace. Despite his attitude, though, he somehow reunites with his physical body and lives.

Later, he tries to tell others, but he has trouble doing so. In the first place, he can find no human words adequate to describe these unearthly episodes. He also finds that others scoff, so he stops telling other people. Still, the experience affects his life profoundly, especially his views about death and its relationship to life.

In addition, Moody introduced four new elements: the vision of knowledge, cities of light, a realm of bewildered spirits, and spiritual rescues, bringing the total to nineteen (Moody, 1978, pp. 9–28).

Ken Ring (1980): The Weighted Core Experience Index (WCEI)

NDE researcher Ken Ring (1980, pp. 27–38) conducted the Connecticut Study in which 102 subjects were interviewed who had come close to death or been resusci-

Table 1. Components and Weights for the Core Experience Index

Component	Description	Weight
1	Subjective sense of being dead	1
2	Feeling of peace, painlessness, pleasantness	1 or 2 based on level of affect
3	Sense of bodily separation	1 or 2 based on level of affect
4	Sense of entering a dark region	1 or 2 based on level of affect
5	Encountering a presence/hearing a voice	3
6	Taking stock of one's life	3
7	Seeing, or being enveloped in, light	2
8	Seeing beautiful colors	1
9	Entering into the light	4
10	Encountering visible "spirits"	3

tated from clinical death as a result of a serious illness, accident, or suicide attempt and could subsequently be interviewed. The interviews included a series of probing questions designed to determine the presence or absence of the various components of the "core experience" described by Moody. Ring constructed a near-death experience index, which was essentially a weighted measure of the "depth" of the experience. The score for a particular element was weighted based on the degree Ring himself ascribed to that element's contribution to the overall "depth" of an NDE. This scale, the WCEI (Weighted Core Experience Index, pp. 32–33), is shown in Table 1.

The WCEI score can range from 0 to 29. Ring and two other researchers rated the taped recording of each subject's interview based on a detailed rating schedule (Ring, 1980, pp. 275–279). At least two of the three judges had to agree for a feature to be scored. If a person's score was *less than six*, the experience was adjudged as not qualifying as a "core experience." Scores *between six and nine* were designated "moderate experiences" and those *ten and above* as "deep experiences." Of the 102 subjects, 26% were deep experiencers, 22% were moderate experiencers, and 52% were non-experiencers. The range of WCEI scores from the Connecticut Study's 102 subjects was 0 to 24. Ring stated the motivation for having a scale for NDEs:

... If we are to progress in our understanding of these core experiences, beyond the descriptive and anecdotal level already available in Moody's and Kübler-Ross's writings, it will be necessary to bring some conceptual order and statistical comparisons to bear. (p. 38).

Bruce Greyson (1983): The NDE Scale

In 1983, Bruce Greyson introduced the NDE Scale to assist researchers' investigations into the mechanisms

and effects of NDEs and their features, who otherwise were impeded by the lack of quantitative measures of the NDE and its components. In his recent book, Greyson (2021) described the process in general terms:

I realized we needed a way to put [NDE researchers] on the same page when talking about near-death experiences. This was a challenge. In addition to the personal biases of different researchers, each of us was acting in relative isolation, unaware of who else might be studying NDEs or how others were defining the experience. I wanted to bring some logical order to the study of this experience.

To tackle this problem, I developed the NDE Scale in the early 1980s as a way to standardize what we mean by the term "near-death experience." I started with a list of the eighty features most often mentioned in the literature on NDEs, and sent this list to a large sample of experiencers. Then, through a series of repeated assessments by experiencers and other researchers, with the help of statistical analyses, whittled the scale down to a more manageable list of sixteen features (p. 54).

From Greyson's questionnaire results, representing 74 NDEs, the 33 features most commonly mentioned were selected and reworded into a preliminary 3-point scale questionnaire. The NDErs rated whether the feature was present, questionable/atypical, or definitely absent. Several statistical analyses based on prevalence and cross-correlations, plus further consolidations, reduced the 33 features to the present 16-item NDE Scale, grouped into four "components"—Cognitive, Affective, Paranormal, and Transcendental—each with four related features. Internal consistency and reliability of the resultant scale were confirmed with further statistical tests.

The NDE Scale thus has sixteen features, each rated as 0, 1, or 2 points, giving a total score between 0 and 32. The cut-off point of one standard deviation below the mean would require a score of 7 or higher to establish the presence of an NDE.

In 2004, the NDE Scale was formally validated as a scale using the Rasch statistical method (Lange et al., 2004). Greyson considered the NDE Scale scores helpful in comparing research across different investigators, assuring them that they are investigating the same experience (Greyson, 2021, p. 54).

Importantly for the present analysis, Greyson stated, "The scale may also be used as a dependent measure, to test hypotheses regarding causes and mechanisms of NDEs" (Greyson, 1983, p. 375).

Limitations of Defining NDEs in Terms of Elements or Features.

In 1999, Greyson pointed out that defining NDEs via a list of features or some measure derived from a scale based on those features is problematic. He stated, "Since we do not have a dichotomous diagnostic test for NDEs, researchers define NDEs by scales summing characteristic elements, a circular definition that uses intervening variables in place of NDEs themselves and begs questions of different elements' sensitivity and specificity for NDEs" (Greyson, 1999, abstract). Greyson concluded that a list of features or a scale derived from the list are not an adequate definition of NDEs.

Explanatory Models of NDEs

Once NDEs became well-known and characterized by their features, scientists and philosophers tried to provide an explanation for NDEs. These explanations focused on various psychological or physiological explanatory models (Greyson et al., 2009, pp. 213–234). Greyson et al. found that the physiological and psychological models all fail because they focus only on selected NDE features or aspects of NDE phenomena. They do not address *all* features and aspects of NDEs. In every case, Greyson and other researchers found clear counterexamples of NDEs that did not fit the explanatory model. Indeed, Greyson et al. acknowledged that NDEs occur even when the NDEr is not near death:

The major features associated with NDEs can occur in a wide variety of conditions in which the person is clearly *not* near death. However, despite the wide variety of physiological and psychological conditions under which NDEs occur, many such experiences clearly *do* occur when the

brain is severely impaired. (p. 214).

One explanatory model, for example, proposes that NDEs are caused by hypoxia (lowered oxygen levels) or anoxia because these conditions have produced hallucinations. However, NDEs occur *without* anoxia or hypoxia, as in non-life-threatening illnesses, falls, or other near-accidents. Furthermore, the experiential phenomena associated with hypoxia are only *superficially* similar to NDEs, and the *primary* symptoms of acceleration-induced hypoxia do not occur in NDEs. "Clearly, anoxia is neither a necessary nor a sufficient condition for NDEs to occur" (p. 218).

Greyson et al. concluded that these models were inadequate:

The real challenge of explanatory models of NDEs lies in examining how complex consciousness, including thinking, sensory perception, and memory, can occur under conditions in which current physiological models of mind deem it impossible (Kelly, Greyson, & Kelly, 2007). This conflict between neuroscientific orthodoxy and the occurrence of NDEs under conditions of general anesthesia or cardiac arrest is profound and inescapable. If scientific discourse on the mind-brain problem is to be intellectually responsible, it *must* take these data into account. Only when researchers approach the study of NDEs with this question firmly in mind will we progress in our understanding of NDEs beyond unsatisfactory neuroscientific conjectures. Similarly, only when neuroscientists examine current models of mind in light of NDEs will we progress in our understanding of consciousness and its relation to the brain. (Greyson et al., 2009, p. 234).

A Common Proximate Cause of All NDEs

We have argued elsewhere (Mays & Mays, 2015) that an explanation of NDEs must account for *all* aspects of anomalous NDE phenomena:

An adequate scientific explanation of the *cause* of NDEs needs to account for *all* cases, or *nearly all* cases, of NDEs. The explanation also needs to account for cases in which the cause is present, but no NDE occurs. ... Indeed, if NDEs can occur in cases with no identifiable, unique physiological or psychological antecedent but with equal intensity and content as NDEs occurring in the antecedent condition of clinical death, then the

cause of NDEs per se can't be any particular known physiological or psychological condition. The commonality of intensity and content in NDEs—feeling separated from the body, seeing or feeling surrounded by a brilliant light, entering an unearthly world, and so on—under a wide range of conditions suggests that a *common state of consciousness* occurs during NDEs. The common state of consciousness suggests that there is a common proximate or immediate cause of the experience. (pp. 130–131).

A study at the University of Liège, Belgium (Charland-Verville et al., 2014) compared NDE reports resulting from life-threatening events to NDE-like experiences occurring after non-life-threatening events, such as during sleep, fainting, meditation, drug or alcohol use, etc. Surprisingly, the results showed *no significant difference* in either NDE content or NDE intensity between the near-death-like experiencers (NDLErs) and the so-called “real” NDErs. The average NDE score in the study was comparable for both groups. The NDE content cannot distinguish whether the person—at that time—was perfectly healthy or in cardiac arrest: They are the *same experience*. The study results strongly suggest that NDEs are a common altered state of consciousness that can be triggered by *many different types* of prior conditions or may indeed have no apparent triggering event. In turn, the altered state of consciousness in all NDEs—feeling separated from the body, seeing a brilliant light, entering an unearthly world—suggests that there is a *common proximate or immediate cause* of the experience. For us, the common proximate cause is the separation of the NDEr's consciousness from the body. (Mays & Mays, 2021, pp. 25–26).

Given this evidence, *all* out-of-body experiences (OBEs) count as *near-death-like* experiences, provided the other features of the experience contribute to a score of 7 or greater on the NDE Scale.

Our Approach to Defining NDEs

Our approach is first to examine phenomenal consciousness *in detail* as manifested during NDEs. Consciousness is subjective awareness. So, which phenomenal features give clues about the NDEr's consciousness? How is the NDEr's consciousness different from ordinary consciousness?

From understanding the unusual aspects of the NDEr's experience of consciousness during an NDE, we can formulate a framework that explains the phenomenon as a whole. From the framework, we can then identify

the “essential” features in the NDE Scale, which can then be used to define NDEs.

A FRAMEWORK FROM THE NDEr'S PHENOMENAL CONSCIOUSNESS

The Apparent Separation of Consciousness from the Physical Body

Probably the foremost difference from ordinary consciousness is the NDEr's experience of apparent separation from the physical body, during which the center of awareness is outside the physical body. There are numerous reported cases during NDEs of verified, accurate (veridical) perceptions of the physical realm while out of the body, especially while the brain is nonfunctional (Holden, 2009). Over 80 cases of verified veridical perceptions are documented in Rivas et al. (2023, pp. 1–189). Here are three relevant cases:

The Case of Al Sullivan

Al Sullivan had emergency cardiac bypass surgery, during which his eyes were taped shut, and he was anesthetized. A surgical drape over his head blocked any possible physical perception of the surgeon, Dr. Takata. During the surgery, Sullivan experienced floating above his body and looking down at the surgery. He noticed that Takata seemed to be “flapping” his arms as if to fly. Immediately after he had recovered, Sullivan told his cardiologist, Dr. LaSala, of this unusual behavior. Takata had the habit of placing his hands on his chest to avoid contaminating them and pointing with his elbows when he needed to direct his surgical assistants. Both LaSala and Takata could not explain how Sullivan could have known of this behavior, with Sullivan being under deep anesthesia, with his physical eyesight blocked, and Takata's behavior involving no sound or touch—perceivable only through a visual process (Cook et al., 1998; Rivas et al., 2023, Case 1.5; see also a video re-enactment in NDEAccounts, n.d.).

In this case, Sullivan accurately described seeing Dr. Takata's idiosyncratic movements while he was under total anesthesia, with his eyes taped shut and his head behind a surgical drape. Sullivan immediately told cardiologist LaSala about Takata's unusual movements, whose response was, “Who told you that?” Sullivan responded that he *had seen it himself* from above his body in the operating room during his NDE. But Sullivan should not have been able to perceive the surgeon's movements. The doctors have no explanation for this. Takata said in an interview, “Frankly, I don't know how this case can be accounted for. But since this really happened, I have to accept it as a fact. I think we should always be humble to

accept the fact.” (Rivas et al., 2023, p. 11).

A skeptic can object to the case of Al Sullivan because Sullivan was “merely” under anesthesia, and there are cases of “anesthesia awareness” in which the patient is aware during surgery but cannot move or speak. In Sullivan’s case, Takata’s movements were unusual, *purely visual* events that could not be seen because Sullivan’s eyes were taped shut and were behind a surgical drape blocking the sight of the operating area. There was no way for Sullivan to perceive Takata’s flapping arms, even if Sullivan were completely awake with his eyes open, because his vision would have been blocked by the surgical drape. (Mays & Mays, 2021, p. 6).

The Case of Lloyd Rudy’s Patient

Skeptics can also object because Sullivan wasn’t close to death during the operation—his brain was still functioning, even though he was unconscious under anesthesia. They say there might be some currently unknown brain function that would support such perceptual abilities. However, there are dozens of cases of verified veridical perceptions during an NDE occurring *during cardiac arrest* when all brain function has ceased. Take the case of Lloyd Rudy’s patient:

Cardiac surgeon Lloyd Rudy operated on a patient to replace a heart valve. After the surgery, Rudy could not get the patient off the heart-lung machine and restart his heart. After numerous failed attempts to wean him off the machine, the patient was declared dead. The life-sustaining machines were turned off, except for the heart echo probe and other monitoring instruments. The patient had no heartbeat, no blood pressure, and no respiration for at least 20–25 minutes. During this time, Rudy and assistant surgeon Roberto Cattaneo stood in the OR doorway in their short-sleeve shirts, discussing how they might have done the procedure differently. The patient’s heart spontaneously started beating again and developing blood pressure. Rudy called the surgical team back, and they eventually resuscitated the patient, who remained in a coma for two days in the ICU. The patient recovered with no neurological deficit and later reported having an NDE and floating above the scene in the OR. He recounted several accurate veridical perceptions during this time. In particular, he reported seeing the two surgeons standing and talking in the OR doorway in their shirt sleeves, with their arms folded, and seeing Post-It notes stuck together

in a chain on a computer screen. The notes were telephone messages for the doctors that had been added after the surgery started.

Rudy commented, “He described the scene—things that there’s no way he could know. ... So what does that tell you? Was that his soul up there? ... It always makes me very emotional.” Cattaneo also commented, “The patient’s description of his experience is as Dr. Rudy described it word by word. People should interpret this according to their own beliefs, these are the facts.” In a later interview, Cattaneo remarked, “My role was that of assistant surgeon. I was in the case from beginning to end. I did witness the entire case and everything that my partner Dr. Rudy explained in the video. I do not have a rational scientific explanation to explain this phenomenon. I do know that this happened. This patient had close to 20 minutes or more of no life, no physiological life, no heartbeat, no blood pressure, no respiratory function whatsoever and then he came back to life and told us what you [hear] on the video. He recovered fully. ... This was not a hoax, no way, this was as real as it gets. ... One can believe what one wants to believe but this in my mind is a miracle unexplainable by current scientific knowledge” (Rivas et al., 2023, Case 3.11; see also the video of Dr. Rudy’s interview, American Academy for Oral Systemic Health, 2011).

The evidence is clear that Rudy’s patient had died. There was no heartbeat, no blood pressure, and no respiratory function for 20–25 minutes, as indicated by the monitors that had been left on. The doctors pronounced the patient dead and told his wife that he had died. The patient’s chest was closed up briefly and prepped for a postmortem exam.

When the heart stops, there is no blood flow to the brain. The brain’s electrical activity and brain function that are dependent on this blood flow cease after 10–20 seconds (Mays & Mays, 2008, pp. 9–10). Yet Lloyd Rudy’s patient experienced a vivid NDE while his heart had completely stopped. Although his eyes were taped shut, he later reported perceiving veridical details of the doctors and the OR, which were later verified by the two surgeons. The unusual, purely visual events the patient perceived included the two doctors standing in the OR doorway in their shirt sleeves, and the Post-It notes stuck to the computer screen. These perceptions occurred from a vantage point near the ceiling during the time there was no brain electrical activity.

How could a patient with no brain function have accurate perceptions from a location outside the physical body? This case and many others similar to it (Rivas et al., 2023) suggest that the perceptual, cognitive, and memory aspects of the mind can operate outside the body, independent of brain function. (Mays & Mays, 2021, pp. 6–7).

The Case of Laurin Bellg’s Patient, Howard

A skeptic can object that Dr. Rudy’s patient was in the same room as the two surgeons and may have had some perceptions from residual brain function, even after 20 minutes. However, there are numerous cases in which the NDEr perceives unusual objects and events at a distance from the physical body—in an adjacent room, down the hallway, on another floor of the building, or hundreds of miles away. Take the following case:

Critical care physician **Laurin Bellg’s patient Howard** suffered a cardiac arrest while recovering from surgery in the ICU. Bellg was the physician in charge during the resuscitation. Howard was completely unconscious but was resuscitated by several defibrillation shocks and was put on a ventilator.

Howard related that he shot out of the top of his head, “I’m looking down on my body and it feels like I’m bobbing and bouncing against the ceiling.” With the thought that maybe he was to go somewhere, “I felt myself rising up through the ceiling and it was like I was going through the structure of the building. I could feel the different densities of passing through insulation. I saw wiring, some pipes and then I was in this other room. It looked like a hospital but ... it was very quiet ... like there was no one there. There were [people in beds that] looked like mannequins and they had IVs hooked up to them but they didn’t look real. In the center was an open area that looked like a collection of workstations with computers.”

Right above his ICU room is a nurse-training center with simulated hospital rooms, with medical mannequins on some of the beds, and in the center, a collection of workspaces with computers. Dr. Bellg and the attending nurse were astonished at the accuracy of Howard’s description because the presence of the nurse training center was not generally known, even by non-nursing staff.

Howard continued, “I wasn’t there long before I got jerked back to my body with a jolt and

then floated up again. As I floated up this time, I heard someone say, ‘Turn up the juice’ and then ‘Okay, charge.’ ... Then I saw the things they put on your chest to shock you like you see on TV, and I saw my body jump right after someone said, ‘Everybody clear.’” These perceptions were all completely accurate. Howard was jerked back on the *first* defibrillation shock. As Bellg recounted, the *first* shock had not worked and “right away I said, ‘Let’s turn up the juice. ... Okay, charge.’”

Howard’s heart was finally brought back to normal rhythm. He was intubated and remained under sedation for several days after the resuscitation. When he was finally weaned off the ventilator, he was able to talk and related a number of additional veridical details of the resuscitation, for example, Bellg’s specific comments when putting the intubation tube in (Bellg, 2015, pp. 33–43; Rivas et al., 2023, Case 3.33).

Howard’s numerous veridical visual and auditory perceptions occurred during cardiac arrest and resuscitation while his heart was still stopped. They were verified immediately after his ventilator was removed, in his first telling, including accurate details of unusual objects—in the training center on the floor above the ICU—which were clearly out of his physical line of sight. Notably, Howard reports feeling “the different densities of passing through insulation.” NDErs frequently report easily floating above their physical body, bobbing against the ceiling, and easily moving through solid objects such as walls and ceilings, sometimes feeling a slight resistance or a change in density in the process. (Mays & Mays, 2008, pp. 21, 33; Mays & Mays, 2021, pp. 7–8).

What do These Cases Mean?

The evidence from these three cases—and many additional cases of veridical NDEr perceptions—support the idea that some part of the human being—the mind or spirit—has actually separated from the physical body and has perceived events in the physical realm from a vantage point outside the body while the brain was fully anesthetized or was completely inactive. The perceptions occur in real-time and are completely accurate. In these cases, no physical explanations hold up to scrutiny. (Mays & Mays, 2021, pp. 24–25).

The experiences in the NDE—the perceptions of the physical realm—*are real*—for the following reasons:

- The NDEr’s perceptions of the physical realm are *veridical*; that is, they are accurate and have been verified by a credible third party (Rivas et al., 2023).

- The veridical perceptions occur from the NDEr's reported *vantage point outside* the physical body, generally from above, near or bobbing against the ceiling. The NDEr can be distant from the NDEr's body: down the hall, on a different floor, or many miles away:

NDEr Tony Meo: During emergency open heart surgery while out of town some 1,250 miles from his home, Tony Meo's heart stopped for 30 minutes. During his OBE NDE, he thought about his wife and found himself in the surgical waiting room and saw her on the phone crying. Then "he thought he 'just wanted to go home to Florida' and suddenly he was there! While home in Florida he 'saw' all of the mail which had been taken in by the housesitter, strewn all over the dining room table." He saw a Danish office supply catalog lying there. In the transcendental part of his NDE, Tony had a life review and was asked if he wanted to go back. Tony said yes because his wife, Pat, and his family needed him. After he had recovered, Tony and Pat returned home. They found that Tony had "accurately described all of the letters, bills, junk mail, and magazines," including the Danish catalog, which they had never written away for (Rivas et al., 2023, Case 2.12; Rommer, 2000, pp. 5-7).

- The objects or events accurately perceived are unusual or idiosyncratic—Al Sullivan's doctor flapping his arms; Lloyd Rudy's patient seeing the two surgeons in their shirt sleeves in the OR doorway and the chain of Post-It notes; Howard examining the nurse-training center. The NDEr's description is frequently of a detailed, purely visual event or an unusual object. The events or objects are unfamiliar to the NDEr and are unlikely to be guessed or inferred from the circumstances.
- These purely visual perceptions could not have occurred by physical sight—they were beyond the reach of physical senses, either because physical sight was blocked (Al Sullivan's and Rudy's patient's eyes were taped shut; and Howard's training center was on the floor above), or the unusual events occurred while brain function had stopped (Rudy's patient and Howard were both in cardiac arrest).
- Often, the veridical perceptions are immediately disclosed by the NDEr, such that they could not have been told to the NDEr by someone else or a memory that the NDEr subconsciously fabricated from information acquired later.
- The timing of specific idiosyncratic events reported by

the NDEr can establish what the NDEr's level of brain function was. In some cases, it is clear—beyond a reasonable doubt—that the perceptions could not have been produced by the brain, yet the NDEr correctly identified the sequence and details of the unfolding event. For example, several NDErs have been able to accurately describe the *start* of their resuscitation procedure after cardiac arrest; Lloyd Rudy's patient accurately described the two doctors standing in the OR doorway after he had been declared dead for at least 20 minutes and before his resuscitation had started.

Because the NDEr's perceptions are verified as accurate, the NDEr's experiences in the physical realm are real. The fact that the NDEr's perceptual viewpoint—the line of sight—is reported outside the physical body strongly suggests that the NDEr's mind (subjective awareness) or consciousness has somehow separated from the body during the NDE and is in a different location. The fact that NDErs have accurate perceptions without the mediation of the brain suggests that the mind operates independent of the body. (Mays & Mays, 2021, pp. 8-9).

Consciousness is a Separate Aspect of the Person Independent of the Body, a Mind Entity

Numerous aspects of an NDE show *how the NDEr's consciousness functions* independently of the physical body as a separate entity.

During an NDE, the NDEr's Awareness Functions as a Cohesive Unit, an Entity

There are definite perceptions of *leaving the body*, which are frequently accompanied by a hissing, whirring, or whooshing sound and occasionally by tingling throughout the body (Mays & Mays, 2008, p. 18). At the beginning of his NDE, Tibor Putnoki was in intensive care for heart problems. He felt gradually intensifying pain and constriction in his head and chest. With a sharp crack, he suddenly felt weightless and free of pain (Putnoki, 2016, pp. 77-78).

The mind appears to be a *cohesive unit* during an NDE. NDErs' reports indicate that *all* of their normal cognitive faculties are active during the NDE. NDEr perceptions include all normal *sense faculties*: sight, hearing, and, less frequently, touch, smell, and taste. Perceptions of physical objects and events are accurate. NDErs are fully *self-aware* and retain all of their prior knowledge. Their *thoughts* are clear and reasoned (e.g., Howard wondered whether maybe he should "go somewhere"). NDErs exhibit the normal range of *feelings* (e.g., peace, love, joy, wonder, bewilderment, fear, frustration, irritation). Their

intentions are immediately fulfilled (e.g., Tony Meo “just wanted to go home” and suddenly he was back in Florida). During their NDE, NDErs nearly always recall *existing memories* of prior life events; and during their NDE, new vivid memories of *their NDE* are formed. The NDEr’s self separates and reunites with the physical body as a unit. (Mays & Mays, 2021, pp. 9–10).

There is Continuity of Consciousness Through Separation and Return, Including Repeated Separations and Returns.

The NDEr’s self-conscious awareness remains intact while out-of-body. NDErs feel themselves to be the same person throughout the experience. The continuity of self-conscious awareness is demonstrated in cases in which the NDEr shifts from out-of-body to in-body repeatedly, like a yo-yo. Here are two cases:

NDEr Joe McMoneagle reported that during his NDE from convulsions, he was out of his body observing his friend trying to revive him. Finding no pulse, his friend struck him in the chest periodically—not as in CPR, which was not widely practiced at the time, in 1970.

Not finding [a pulse, my friend] began to violently strike me in the chest, cursing me to breathe with each punch. The interesting thing I experienced through all of this was that every time he struck me in the center of the chest, I would feel a *click* and find myself looking up through my physical eyes into his. This would immediately be followed by another distinct *click*, and once more I would be out of my body and looking down at him from above. After 10 minutes of this, I was beginning to feel like a yo-yo. *Click—pain, click—no pain, click—pain, click—no pain, click ...* and so forth and so on. As he continued striking me in the chest, I began screaming at him with my mind while in the out-of-body state to *stop this nonsense, can’t you see I’m dead, leave me alone!* Until eventually he did stop and I remained outside of my body (McMoneagle, 1997, pp. 30–31).

Orthopedist Mary Neal drowned in a river during a kayaking trip. Her body was severely injured as the force of the water ripped her out of the kayak. Her kayaking friends retrieved her body—after 30 minutes underwater—and started CPR. In her NDE, she rose out of her body and was greeted by deceased relatives and other spiritual companions. As she proceeded on a path to heaven, she could look down on her kayaking friends trying to resuscitate her body on the riverbank.

My body looked like the shell of a comfortable old friend, and I felt warm compassion and gratitude for its use. ... I heard [my friends] call to me and beg me to take a breath. I loved them and did not want them to be sad, so I asked my heavenly companions to wait while I returned to my body, lay down, and took a breath. Thinking that this would be satisfactory, I then left my body and resumed my journey home. [Her kayaking friends kept beckoning to her to come back and take a breath.] Each time ... I felt compelled to return to my body and take another breath before returning on my journey. This became tiresome and I grew quite irritated with their repeated calling. ... Before we could go inside [the hall, my spiritual companions] ... turned to me and explained that it was not my time to enter the hall; I had not completed my journey on Earth, had more work to do, and must return to my body. ... [T]hey returned me to the river bank. I sat down in my body and gave these heavenly beings, these people who had come to guide, protect, and cheer for me, one last, longing glance before I lay down and was reunited with my body. I became aware of my body and opened my eyes to see the faces of [my friends] looking down at me (Neal, 2012, pp. 72–75).

It is important to note that the transitions in and out of the body were triggered by *repeated external events*. Joe McMoneagle was repeatedly catapulted back to his body each time his friend violently struck him in the center of his chest. Mary Neal was drawn back to her body by the compassion she felt for her friends when they repeatedly pleaded with her to take a breath.

We can infer that the momentary resumption of the heartbeat can compel the NDEr back to their body. Joe McMoneagle briefly reunited with his body when he was struck in the chest. Laurin Bellg’s patient Howard “got jerked back to [his] body with a jolt” on the first defibrillation shock and then floated up again. Other NDErs appear to be drawn to return to the body out of the ties of love and compassion for others—Mary Neal for her kayaking friends and Tony Meo for his wife and his family.

Throughout these cases, the NDEr experiences a continuity of consciousness, but their perspective changes from out-of-body to in-body. The body momentarily starts to function again: Joe was briefly looking up through his physical eyes and Mary was able to lay down in her body, take a breath, and then resume her heavenly journey.

Throughout the NDEr’s experience of the separation

of their mind from the body and its return to the body, the mind holds a continuity of *wakeful self-awareness*. The unity of the mind is demonstrated most clearly in these cases of *repeated* transitions in and out of the body. Because there is a seamless transition of consciousness in leaving the body and then returning, it is evident that mediation by the brain does not alter the identity or unity of the mind. (Mays & Mays, 2021, pp. 10–11).

The NDEr's Out-of-Body Awareness Contrasts to the Person's in-Body Awareness in Ordinary Consciousness

There is a stark contrast between one's experience of the "out-of-body mind" in an NDE and the "in-body mind" in ordinary consciousness (Mays & Mays, 2008, pp. 28–31).

Loss of physical pain and disabilities. In the out-of-body state, NDErs feel *no bodily pain*, even when painful medical procedures are being performed on their physical body. Prior *physical defects or disabilities* such as blindness, deafness, lameness, or missing limbs are absent in most NDErs. NDErs who are blind or visually impaired, including those blind from birth, reported being able to see while out-of-body during their NDEs, and in some cases, their perceptions were independently corroborated (Ring & Cooper, 1999, pp. 97–120).

So, in the NDEr's experience, the mind appears to operate as if it has been freed from the normal constraints of the physical body, with loss of pain and disabilities, feelings of weightlessness, sharpness of perceptions, clarity of thought, and instantaneous response to volition, as with NDEr Tony Meo traveling 1,250 miles back to this home.

Enhanced perceptions and memory, a heightened sense of reality. When out-of-body, NDErs also experience *enhanced visual perceptions, enhanced memory formation, and a heightened sense of reality*:

- During the out-of-body state, vision appears to be a *special form of perception*. NDErs report a kind of "wraparound" vision involving *simultaneous 360°* vision on all sides of an object, *through* it, and *within* it, or "vision from everywhere." NDE researcher **Jean-Pierre Jourdan** cited the account of French NDEr J.M.:

I was surprised that I could see at a 360° angle: I could see in front and behind me, I could see underneath, I could see far away, I could see up close and also transparently. I remember seeing a stick of lipstick in one of the nurses' pockets. If I wanted to see inside the lamp which illuminated the room, I'd manage to do so, and all of this instantly, as soon as I wanted to. ... I could see, *all*

at once, a green plaque with white letters saying, 'Manufacture de Saint Etienne [a city in France].' *The plaque was under the edge of the operating table, covered up by the drape I was lying on. I could see with multiple axes of vision, from many places at once. This is the reason why I saw this plaque under the operating table, from a completely different angle, since I was up there by the ceiling and I still managed to see this plaque located under the table, itself covered by a sheet. When I wanted to check this, the surgeon and I realized the plaque was actually there and read 'Manufacture d'armes de Saint Etienne'* (Jourdan & Smythies, 2019, p. 83).

Jourdan proposed that the unusual qualities of visual perception in NDEs suggest that the NDEr perceives the physical world "from a point located in an additional dimension—and therefore *external to normal human space-time*. ... [A] distinctive five-dimensional *spatiotemporal* perspective seems to be the case in NDEs." (Jourdan & Smythies, 2019, p. 86).

- NDErs' *memories of the events of their NDEs* are very vivid and are indelible upon returning to the body. Their accounts don't fade and are not embellished over time, even after decades (Greyson, 2007). Three separate studies of NDEr memories (Moore & Greyson, 2017; Palmieri et al., 2014; Thonnard et al., 2013) showed that NDErs remember being actively involved in the events and actually perceiving the phenomena. When recalling their NDE, the NDEr "relives" the experience. The memories formed of the NDE are more vivid—more real—than memories of real events.
- Finally, the general consensus among NDErs is that their experiences while out-of-body are *much more real than experiences of ordinary reality*:

A man who rolled his car over at the age of 21 said, 'I have no doubt that this experience was real. It was vastly more real than anything we experience here.' A woman who attempted suicide at the age of 31 said, 'This was more real than anything on Earth. By comparison, my life in my body had been a dream.' And a woman who, at the age of 25, bled out during a surgical procedure when the surgeon accidentally cut an artery noted: 'What happens during an NDE happens in the realm of truth, in the true reality, and what happens here on Earth is just a dream' (Moore & Greyson, 2017, pp. 121–122).

These enhanced capabilities evidently occur when

the NDEr's out-of-body mind is not constrained by brain function. The enhanced vision—seeing accurately from all directions at once and seeing *through* objects—is certainly not possible with physical vision. In the referenced studies, the characteristics of the memories formed in NDEs were found to be amplified compared to memories formed in ordinary consciousness of real events, which suggests that the NDE memory *formation* was not tied to brain function.

An adult mind in a child's body. A surprising number of people who had their NDEs during infancy or early childhood report that they were “adults” during their NDEs (Mays & Mays, 2008, p. 19). Most people reporting an NDE or NDE-like experience from this early age describe the experience from an adult perspective, similar to having an adult mind in a child's body. For example, NDE investigator P. M. H. Atwater quotes from the case of Vicky:

I remember being able to leave my body, fly around the room, and being pulled back into my body. ... [My dad would] tickle me under my chin. It made me laugh so hard I would fly up through the top of my head and out of my body. From the ceiling I'd look back at my little body on the couch. ... I could see my mom in the kitchen ironing something on the ironing board. I could see the whole house while soaring around. ... While I was out I wanted to stay out, but something always pulled me back. It was as if there were two parts of me. One aspect was me as the baby. And the other aspect was me with an adult mind. While I was out of my body I was me—but older, wiser, much more knowledgeable. When I returned to my baby body, it was as if I forgot that other aspect of myself (Atwater, 2019, pp. 35–36).

NDE-like experiences such as Vicky's can occur even when the person is not near death but scores on the NDE Scale as valid NDE. In Vicky's case, she described being out-of-body, having perceptions out of the line of physical sight, and being forced to return to her body. Most significantly, she described her out-of-body mind as being a fully mature, adult mind that was an older, wiser, and more knowledgeable version of herself. These qualities were lost when returning to her body. Vicky's in-and-out experience is reminiscent of Joe McMoneagle's yo-yo-like experience.

That physical body wasn't me! When NDErs report seeing *their own physical body*, they view it differently: Their body is not part of who they are. They typically view

their body with disinterest, disdain, or even disgust. Their physical body generally appears as an empty shell, like an old discarded coat. For Mary Neal, her body “looked like the shell of a comfortable old friend.”

When NDErs experience their *return to the physical body*, the contrast between their expanded out-of-body mind and the coarse physical body becomes even more obvious. Their expanded mind needs to be squeezed back into the body. Consider NDEr Erica McKenzie's experience as her out-of-body mind rejoined her physical body:

It was my body but I also knew the real me was not attached to that body. I honestly didn't think I could shove myself back into what had once felt so familiar, but now I identified as foreign. I knew reintegrating was going to be overwhelming and painful. That body wasn't me! ... It was too confining and claustrophobic to even consider trying to stuff myself inside it. There must be another solution, but I couldn't think of one. ... In a split second, I was shoved back into my limp body like a hand in a glove, only the glove was too small. Each part of my spiritual body squeezed its way into my physical counterpart. I could feel my spiritual big toe fit back into the spot of my physical big toe along with each one of my fingers, my hands, feet, arms and legs. My body felt heavy and confined as if I'd been zipped inside a jacket two sizes too small. All the feelings attached to my sick and exhausted body assaulted my spiritual one. My chest hurt along with the rest of me. This was an enormous letdown from the light-filled vastness of Spirit I had just experienced. It wasn't me at all! I had lived as a multidimensional being, basking in the love of God's presence only to be forced back into the stark reality of a 3-dimensional body. How could I possibly go back to that? (McKenzie, 2015, pp. 98–100).

When NDErs experience being reunited with the physical body, pain returns. *Each time* Joe McMoneagle was reunited with his body, he felt tremendous pain, but he felt no pain while out-of-body. Any prior physical disabilities also return.

On return to the body, the NDEr typically feels heaviness, fatigue, and physical sluggishness. Compared to experiences during an NDE, the physical body evidently dampens and dulls thinking and perceptions and constrains movement. Erica McKenzie's body felt heavy and confined, and her pain returned when her “spiritual body” was shoved back into and reintegrated with her “3-dimensional body.” So, the NDEr experiences their con-

sciousness—their mind—coming back to the limitations of their physical body. (Mays & Mays, 2021, pp. 11–13).

The Mind Appears to be a Separate Entity From the Physical Body and Appears to be the Essence of the Person.

NDErs experience that their *entire being* separates from the physical body and then returns to the body. During their experience, they view their physical body as *separate from themselves*—like an empty shell, and yet their *identity—their mind or self-awareness*—continues *intact* before, during, and after the NDE.

During an NDE, the NDEr’s sense of “self” derives from various aspects of the experience:

1. They know they exist with all of their cognitive faculties, without the physical body.
2. They know they are the same person who lives in or out of the physical body.
3. They know they are the agent of their actions, feelings, and thoughts. During the NDE, they can choose, and their intentions are immediately fulfilled.

All aspects of their mind or self are still consciously present to them *throughout* their NDE—their senses, thoughts, feelings, intentions, and memories. Thus, NDErs experience their mind as the *essence* of their being, *independent* of the physical body. “That physical body wasn’t me at all!” (Mays & Mays, 2021, p. 14).

Summarizing the Evidence of the Mind as a Separate Entity

The experiences of NDErs strongly suggest that a person’s mind is a *separate entity* that is independent of the physical body and separates from the body during an NDE.

- NDErs experience that their *entire being* separates from the physical body. All aspects of their mind act as a *cohesive unit* and are consciously present to them throughout their NDE—their senses, thoughts, feelings, intentions, and memories.
- Throughout the NDEr’s separation of their mind from the body and its return to the body, their mind is continuously *self-aware*. This continuity of the mind is particularly clear in cases of *repeated* transitions in and out of the body.
- The stark contrast between the “out-of-body mind” in an NDE and the “in-body mind” includes a sense of freedom from physical constraints, the loss of physical pain and disabilities, feelings of weightlessness, sharpness of perceptions, clarity of thought, and instantaneous response to volition. There are enhanced

capabilities of perception and memory formation and the view that their physical body is not their real self. During some infant and early childhood NDEs, NDErs later report their out-of-body experience was from an adult perspective.

The contrast with the out-of-body mind becomes clearer with the return to the body: the NDEr feels squeezed painfully back into the physical body, with the return of heaviness, fatigue, pain, and disabilities, as well as dulled thinking, perception, and volition.

- NDErs experience their mind as the *essence* of their being, independent of the physical body. They are the *same person* when out-of-body as within their physical body. (Mays & Mays, 2021, pp. 14).

The Separate Mind Entity is Objectively Real

Still, skeptics can object to the fact that all of this evidence is from the NDErs’ *subjective* experiences. We can’t see the NDEr’s out-of-body mind, and the mind appears to be nonmaterial—it easily passes through solid objects, like ceilings and walls. So, is the subjective experience of the nonmaterial mind *objectively* real? Is there *objective evidence* of the existence of the nonmaterial mind entity?

We can take a subjective phenomenon to be *objectively real* if it can be observed by others. There are several lines of evidence from NDEs that the nonmaterial mind is objectively real.

The NDEr Can be Seen by Animals

The NDEr’s out-of-body “body” can evidently be seen by animals. Here is an archetypal case:

The Case of Jerry Casebolt. Jerry Casebolt experienced an NDE at age seven. He died during surgery, left his body, and was met by a “Light Being.” Toward the end of his NDE, he floated over a school playground located just north of the hospital. There were lots of children playing outside there. Jerry recounts his NDE in the third person as a boy named Gary Caldwell:

A German Shepherd dog was playing with the children. Gary [i.e., Jerry] floated down to investigate. The dog sensed his presence and playfully barked at him. ... Gary floated down and positioned himself just a few inches above where the dog could jump. He teased the animal by staying just out of reach. The dog barked and jumped up at Gary. As the dog became more excited, the children took notice. One small girl began to cry. ... The dog continued to wag his tail excitedly, barking and jumping crazily up at Gary. Gary laughed. He was having a good time

like any seven-year-old kid should. The Light Being did not share in the humor of the moment. It stopped this 'childish' diversion and hauled Gary back to the top of the hospital roof as it transmitted, 'You are causing the other children to be frightened' (Corcoran, 1996, p. 81).

In a personal communication, Jerry told us that he and the dog "looked into each other's eyes; I was moving up, down and to the sides; we moved together like a dance."

The NDEr Can be Seen by Other People

An "apparitional" NDE is a particular event in an NDE in which the out-of-body NDEr visits and communicates in some way with a living person, and *both* accounts of the encounter are subsequently verified to be *consistent* with one another.

The Case of Olga Gearhardt. In 1989, Olga Gearhardt underwent heart transplant surgery. All of her family came to the hospital to await the outcome, except her son-in-law, who could not be at the hospital. The heart transplant was successful, but at 2:15 a.m., her new heart stopped beating, and it took 4 hours to resuscitate her heart and then longer still for her to recover consciousness. The son-in-law, who was sleeping at home, awoke at exactly 2:15 a.m., and Olga was standing at his bedside. At first, the son-in-law thought the operation simply had not taken place, and she had somehow come to his house instead. "It was as though she was standing right there," he later reported. He asked her how she was. She replied, "I am fine. I'm going to be all right. There is nothing for any of you to worry about." She asked him to tell her daughter (his wife), and then she disappeared as suddenly as she had appeared. The son-in-law wrote down the time and exactly what was said, and he went back to sleep. Much later, when Olga regained consciousness, her first words were, "Did you get the message?" Olga later reported that she had left her body and had tried but was unable to communicate with the family members, who were all asleep in the hospital waiting room, so she went to the son-in-law, with whom she succeeded in communicating. NDE researchers Melvin Morse and Paul Perry thoroughly verified these details, including the note the son-in-law had scribbled (Rivas et al., 2023, Case 7.3).

In apparitional NDEs, the in-body person typically perceives the NDEr as physically present. Olga's son-in-law thought that Olga was physically present in his bedroom; he assumed the surgery had been postponed.

The NDEr Can be Seen by Other NDErs

In cases of *multiple simultaneous NDEs*, two or more people have an NDE at the same time. The NDErs see each other out-of-body and can converse with one another.

The case of the Hotshot firefighters. One case of multiple NDEs happened to an elite 20-person fire-fighting group called Hotshot, who were battling a wilderness fire on a steep slope at the top of a mountain in 1989. The group was caught by shifting winds, and they were quickly engulfed in an inferno of flames.

One by one the men and women fell to the Earth suffocating from lack of oxygen. They were reduced to crawling on their hands and knees while they attempted to get back up the hill to a safer area. ... Jake [(John Hernandez), the crew boss,] found himself looking down on his body which was lying in a trench. ... Jake felt completely at peace. As he looked around Jake saw other fire-fighters standing above their bodies in the air. One of Jake's crew members had a defective foot which he had been born with. As he came out of his body Jake looked at him and said: 'Look, Jose, your foot is straight.' ... All of the crew escaped and the only visual evidence on them of what they had been through was a few singed hairs. Jake said that in comparing accounts of their different episodes the men and women were astonished that they had each undergone some type of near-death experience (Gibson, 1999, pp. 128–131).

The case of May Eulitt and her two friends. Another case of multiple simultaneous NDEs is described by May Eulitt from Oklahoma. In the late afternoon, May and her two close friends, James and Rashad, were chopping corn stalks for fodder. A rainstorm started, and the three hurried to finish the last wagon load. When they reached the metal gate, James opened the gate, and May leaned over from the wagon to pull him up but slipped. In the wagon, Rashad grabbed May's other arm just as a bolt of lightning struck the gate.

[I]t exploded around us with a such an incredible brightness that it felt as if we were being sucked directly into the sun. The next thing we knew, all of that was gone, and we were all in a large room or hall made of dark stone. ... I just felt peaceful, floating along there in the gloom with my two friends in the great, dark hall. The stately walls of this place loomed above us ... I remember thinking that it would have suited King Arthur. It was at that point that I realized that the three of us were united in thought and body. We were holding hands just as we had been when the lightning struck, but our minds were connected as well. Images of Arthur came

to me from James and Rashad and I could see the same images that they were seeing (Eulitt & Hoyer, 2001, p. 108).

In both of these cases of simultaneous NDEs, the NDErs could see and interact with one another. During the NDE, Jake saw Jose's foot and remarked to him that his defective foot was now straight. May, James, and Rashad saw each other and could experience what each of the others was experiencing. Each NDEr's out-of-body "body" was objectively visible to the other NDErs. (Mays & Mays, 2021, pp. 14–17).

What do These Cases Mean?

Jerry Casebolt's nonmaterial body was seen by the German shepherd, who jumped up and followed Jerry's movements as he playfully taunted him. Olga Gearhardt's son-in-law saw her nonmaterial body as though she was standing right there. The 20-person Hotshot team saw each other standing above their physical body during their simultaneous NDEs. Jake remarked that Jose's defective foot looked straight. May Eulitt and her two friends saw and communicated with each other during their experiences together in another realm.

- In each of these cases, the NDEr's out-of-body mind was objectively present to others.
- In the apparitional NDEs, the NDEr appeared to the other person with a normal physical body. There are a total of eight apparitional cases in Rivas et al. (2023, pp. 233–246).
- The NDEr's "body" has a location in space and a perspective. The NDEr appears to the NDEr himself and to others to be 3-dimensional.

The NDErs' vivid subjective experiences while out-of-body, coupled with the corresponding objective corroboration of their out-of-body "body" by others, demonstrate that the NDEr mind entity is a real thing, a real being. The separate mind entity really exists.

THE SEPARATION OF CONSCIOUSNESS AS A POSSIBLE DEFINITION OF NDES

Given the foregoing theoretical framework and NDE evidence, a fundamental feature of an NDE is the *separation of the person's consciousness as an entity from the physical body*. To validate this feature as the essential NDE feature that defines an NDE, we analyzed the 16 NDE features contained in the Greyson (1983) NDE Scale in the following steps:

1. From the phenomenology of NDEs outlined in the previous sections, we selected the 16 NDE Scale features

that directly or indirectly imply the separation of the NDEr's consciousness from the physical body. This process divides the scale features into "separation" features and "incidental" features in the NDE that are likely to occur in other paranormal experiences as well as in NDEs.

2. Order the selected "separation" features by *prevalence* based on a large sample of NDE scores.
3. Determine empirically the minimum set of the separation-related features that are present in all, or nearly all, of the NDE cases. This process divides the separation-related features into the "essential" features, at least one of which must be present for the NDE to satisfy the proposed definition, and non-essential "derivative" features which may also occur in NDEs. The presence of any one of the *essential* elements should be sufficient to classify the experience as an NDE.
4. Validate the separation-related features by calculating the *pairwise prevalence* of these features with one another, that is, how often the two features are reported together in NDEs. This process provides a measure of the *coherence* among the separation-related features.
5. Further, validate the essential and derivative separation-related features by comparing the *rank prevalence order* of these features with NDE Scale datasets published in other studies. This process provides a level of confidence that the separation-related features are reasonably consistent across other NDE Scale results, particularly where the NDE Scale has been translated into other languages and used in other countries and cultures.

APPLYING NDE PHENOMENA TO THE NDE SCALE FEATURES

Step 1: Select NDE Scale Features Implying Separation of Consciousness From the Body

Many phenomenological aspects of NDEs indicate that the NDEr's center of awareness has separated from the physical body.

Selecting the "Separation" Features

Based on the fundamental NDE Scale feature of the separation of consciousness from the body (N12), we selected the following nine phenomenological features that, in combination with N12 and other features in the list, imply the separation of consciousness from the body. All of these features occur together with other NDE features. If a feature does not directly imply a separation of consciousness from the body (e.g., N3 Life review or N11 Life preview), it almost invariably occurs with other fea-

tures that do (e.g., N12 Separation from the body or N15 Encounter deceased or religious spirits). The entire set of NDE features should be considered as a whole to determine if the experience occurred while out of body.

- N12. Did you feel separated from your body? (Out-of-body experience). This is the basic NDE feature related to consciousness separation.
- N10. Did you seem to be aware of things going on elsewhere, as if by extrasensory perception (ESP)? (Veridical out-of-body perceptions). This feature occurs when the NDEr is aware of events in the physical environment that could not be perceived with their ordinary senses, indicating that the NDEr's consciousness is out-of-body.
- N13. Did you seem to enter some other, unearthly world? (Transmaterial realm). This feature occurs during or after a transition of awareness beyond the immediate physical environment, for example, through a tunnel or into outer space, and implies being out-of-body.
- N8. Did you see or feel surrounded by a brilliant light? (Transmaterial entity or realm). Being surrounded by or seeing a brilliant light of mystical or other-worldly origin implies the NDEr's awareness is either beyond the physical environment or is out of body in the presence of a Being of Light.
- N14. Did you seem to encounter a mystical being or presence, or hear an unidentifiable voice? (Transmaterial entity). Similar to N8, this feature implies the NDEr heard a voice clearly of mystical or unearthly origin or encountered a mystical being while out of body.
- N15. Did you see deceased or religious spirits? (Transmaterial entities). Seeing deceased or religious spirits during an NDE usually occurs in conjunction with other of the NDE features in this list, which do imply being out of the body.
- N3. Did scenes from your past come back to you? (Life review). A life review usually occurs in conjunction with other of the NDE features in this list, which do imply being out of body.
- N11. Did scenes from the future come to you? (Life preview). A life preview usually occurs in conjunction with other of the NDE features in this list, which do imply being out of the body.
- N16. Did you come to a border or point of no return? (Returning from the Transmaterial realm). Encountering a border, or point of no return, or being "sent back" implies that the NDEr's awareness has been out of body.

Examining the Non-Separation or "Incidental" Features

We propose that the remaining seven phenomenological features of the NDE Scale are *incidental* elements; they are subjective aspects of the experience and serve to reinforce the assessment of the experience being an NDE but are not essential in themselves. These incidental features appear to involve perceptions related to oneself and the sense of one's personal continuity of consciousness.

- N1. Did time seem to speed up or slow down?
- N2. Were your thoughts speeded up?
- N4. Did you suddenly seem to understand everything?
- N5. Did you have a feeling of peace or pleasantness?
- N6. Did you have a feeling of joy?
- N7. Did you feel a sense of harmony or unity with the universe?
- N9. Were your senses more vivid than usual?

These features can occur *alone*, under circumstances of paranormal experiences with *no separation-related features*, for example, in some cases of dreams, mind-altering drugs, deathbed visions, cortical electrical stimulation, kundalini experiences, meditation, or enlightenment experiences, so they do not help to differentiate NDEs from other paranormal experiences. If separation-related features occur during another kind of paranormal experience, such as seeing deceased relatives, the occurrence is usually in the context of the process of dying or in the presence of a person who is dying. Such experiences may thus qualify as an NDE or as a related experience like a shared death experience. An OBE with *no other* separation-related features counts as an NDE, provided the other features of the experience contribute to a score of 7 or greater on the NDE Scale.

"Essential" and "Derivative" Features

Many of the nine NDE features that we selected based on our conceptual framework occur together. Some sets of these features are "essential." The rest of the features among the nine can also be considered "derivative," that is, if the experience includes an essential feature, it will most likely include one or more of the other features. For example, N12 (separation from the body) is probably "essential," because it appears in about 82% of NDEs in our NDE dataset (described in the next section), whereas N3 (life review) appears in only 27% of NDEs and thus is derivative. In other words, a life review is not likely to occur in an NDE by itself without at least one of the essential features.

Because NDEs are a coherent experience among people of all national and ethnic backgrounds, we propose that there is a *minimum set of essential features* that define

all NDEs in general, regardless of the NDEr’s national or ethnic background.

Step 2: Order the Separation-Related Features by Prevalence

If our conceptual framework is correct, the essential features will be among the nine NDE features that fit the framework (N3, N8, and N10 to N16). Furthermore, the essential features will be the most prevalent features in any set of NDE Scale results and will include all, or nearly all, NDE cases in the set.

Therefore, the set of essential features can be found empirically from a sufficiently large set of NDE Scale results by considering the most prevalent features in descending order until nearly all the NDEs are included. As the next most prevalent feature is added, the combined set will have a cumulative prevalence encompassing a greater percentage of the NDE cases. Ultimately, nearly all NDEs will be included. The remaining NDE cases that were not yet included in this process can then be examined individually.

We used a dataset of 565 NDE Scale results from the IANDS Experience Registry (IANDS, 2023) collected from 2016 to the present (N=565; 351 females [62%]; age at NDE 30 ± 16 years; time since NDE 20 ± 18 years). The NDE scores ranged from 7 to 31.

Table 2 lists the nine NDE features that fit our conceptual framework of an NDE, such as the separation of

the mind entity from the body, listed in decreasing order of individual prevalence. Starting with the first feature, N12 appeared in 460 accounts with a prevalence of 81.4%. We then calculated the number of additional accounts that were added to the cumulative list. For example, by adding N14 accounts, an additional 76 accounts were added to the cumulative total. Together, the two features have a cumulative prevalence of 94.9%. This process was repeated seven more times to complete the table.

Step 3: Select the “Essential” and “Derivative” Separation-Related Features

The top five NDE features, ending with N16, accounted for 558 of the 565 NDEs (98.8% prevalence). After N16, the next two features, N15 and N10, did not add any additional accounts to the cumulative total. This result means that all the accounts containing these features were already included in the prior tallies. Because these features occurred with one or more of the five most-prevalent features, these less-prevalent features generally occur only in combination with at least one of the most-prevalent features.

We also noted that the less-prevalent features had a prevalence at or under 50%. Thus, the top five features can be considered the essential features of an NDE. Some combination of these five features accounted for all but seven NDEs (1.2% of the dataset).

Table 2. Prevalence of Separation-Related NDE Scale Items (N=565)

Scale Item	Scale Question	Accts with this Item	Individual Prevalence	-----Cumulative Prevalence-----		Added to Total	Cumulative Accounts	Remaining Accounts	Feature Partition
N12	Separated from your body? Encounter a	460	81.4%	81.4%	N12 only	460	460	105	
N14	mystical being or presence?	420	74.3%	94.9%	N12+N14	76	536	29	Prevalent features
N13	Enter some other, unearthly world?	418	74.0%	97.2%	N12+N14+N13	13	549	16	(Essential)
N8	Surrounded by a brilliant light?	387	68.5%	98.4%	N12+N14+N13+N8	7	556	9	
N16	Border or point of no return?	334	59.1%	98.8%	N12+N14+N13+N8+N16	2	558	7	
N15	Deceased or religious spirits? Aware of things	284	50.3%	98.8%	N12+N14+N13+N8+N16+N15	0	558	7	Rarer
N10	going on elsewhere (ESP)?	196	34.7%	98.8%	N12+N14+N13+N8+N16+N15+N10	0	558	7	derivative features
N3	Scenes from your past?	152	26.9%	99.1%	N12+N14+N13+N8+N16+N15+N10+N3	2	560	5	(Not essential)
N11	Scenes from the future?	146	25.8%	99.3%	N12+N14+N13+N8+N16+N15+N10+N3+N11	1	561	4	



The final two features—dealing with scenes from past and future events (N3 and N11)—accounted for three additional NDE accounts. That left four remaining NDEs, which had NDE scores ranging from 8 to 12. Two of the four accounts were not actually NDEs—one was a shared death experience, and one was a dream of a deceased relative at the time of the relative’s passing. The other two accounts were unclear (an experience of euphoria after a serious injury and two brief out-of-body perceptions during a coma).

Step 4: Validate the Separation-Related Features by Calculating Their Pairwise Prevalences

We calculated the prevalence of pairs of the nine NDE separation-related features (Table 3) to determine the degree to which features appear together in NDEs. The five essential features appear together with one another between 64% and 46% of the time in NDE accounts. For example, N12 (separated from the body) appears together with N14 (encountered a mystical being) in about 61% of the NDEs in the dataset (344 accounts). The five essential features are typically strung together in the NDE narrative in a logical sequence (e.g., “I floated out of my body and saw my lifeless body below me. An angelic being next to me took me to a great hall where I saw a panoramic review of the events of my life.”).

The essential features are also paired with the four less common NDE features from 48% to 18% of the time. While these features are not “essential” *per se*, they demonstrate the richness, variety, and nuance of the experiences (e.g., “I saw my sister in her kitchen wearing a bright red sweater. That was unusual for her. She later confirmed that she wore that sweater the afternoon of my accident.”).

The Table 3 results validate our original assertion that these features each occur together with other NDE features and that if a feature does not directly imply separation of consciousness from the body (e.g., N3 Life review or N11 Life preview), it almost invariably occurs with other features that do.

Step 5: Validate the Separation-Related Features by Comparing the Rank Prevalence Order From Other Studies

To validate our analysis, we compared the IANDS Registry dataset results with three other published NDE Scale datasets (Table 4) taken from Lange et al. (2004), Charland-Verville et al. (2014), and Martial et al. (2020). We compared the *rank prevalence orders* of the nine selected NDE features of each of these datasets. Each feature in an NDE dataset is given a rank based on the prevalence of that feature in the dataset—the most prevalent feature is assigned rank 1; the next most prevalent feature is assigned rank 2; and so on.

All four datasets show remarkable consistencies with each other:

- N12 (separated from the body) is ranked 1 in all four datasets.
- The four least prevalent, “non-essential” features (N15, N10, N3, and N11) are ranked 6, 7, 8, and 9 respectively in all four datasets.
- N16 (border or point of no return) is also reasonably consistent among all four datasets with a rank of 4 or 5.
- The remaining features (N14, N13, and N8) have a mixture of different ranks, mostly ranks 2, 3, and 4.

Table 3. Pairwise Prevalence of NDE Separation-Related Features

Scale Item	Scale Question	Prevalence with N12	Prevalence with N14	Prevalence with N13	Prevalence with N8	Prevalence with N16	Feature Partition
N12	Separated from your body?	100.0%	60.9%	63.5%	57.9%	52.0%	Prevalent features (Essential)
N14	Encounter a mystical being or presence?		100.0%	58.8%	56.5%	48.5%	
N13	Enter some other, unearthly world?			100.0%	55.0%	48.3%	
N8	Surrounded by a brilliant light?				100.0%	46.2%	
N16	Border or point of no return?					100.0%	
N15	Deceased or religious spirits?	41.8%	44.6%	48.3%	39.1%	34.9%	Rarer derivative features (Not essential)
N10	Aware of things going on elsewhere (ESP)?	30.3%	29.4%	27.6%	26.2%	25.1%	
N3	Scenes from your past?	24.6%	23.0%	21.9%	21.4%	19.5%	
N11	Scenes from the future?	22.8%	22.3%	20.9%	20.9%	17.5%	

Table 4. Comparison of Rank Prevalence Order of Related Scale Items From Three Other Studies

Scale Item	Scale Question	IANDS Exp. Reg. N=565	Lange et al. N=203	Charland-Verville et al. N=190	Martial et al. N=403	Feature Partition
N12	Separated from your body?	1	1	1	1	
N14	Encounter a mystical being or presence?	2	4	5	5	Prevalent features (Essential)
N13	Enter some other, unearthly world?	3	2	3	2	
N8	Surrounded by a brilliant light?	4	3	2	3	
N16	Border or point of no return?	5	5	4	4	
N15	Deceased or religious spirits?	6	6	6	6	Rarer derivative features (Not essential)
N10	Aware of things going on elsewhere (ESP)?	7	7	7	7	
N3	Scenes from your past?	8	8	8	8	
N11	Scenes from the future?	9	9	9	9	

This variation in the rank order of individual features, particularly in the middle range of prevalences, is not uncommon when comparing different samples of NDEs. Among features with nearly identical prevalences, the rank order can depend on the specific *sample* of NDEs in a dataset. For example, in the IANDS Registry dataset, N14 and N13 have 420 and 418 accounts, respectively. A slightly different sample of NDEs in the dataset could flip the rank order of those two features. Large shifts in rank order when comparing different datasets may be due to factors other than sampling differences, such as nuances in the meaning of a feature when it is translated into another language.

DISCUSSION

Incidental NDE Features

Our analysis establishes two partitions of the NDE Scale items into “essential” features, comprising the most prevalent scale items that fit the conceptual framework of the separation of the mind from the body and the less prevalent or “derivative” features fitting the framework. The remaining seven scale items form a third class or partition of NDE features (Table 5) that are prevalent but incidental to the conceptual framework.

These features describe feelings the NDEr had (peace, joy, and harmony/unity), the qualities of their senses (vivid senses, time sped up, and thoughts sped up), and the experience of epiphany (a sudden understanding of everything). All of these features can occur in ordinary consciousness, but NDErs state that these incidental features are many times more intense than in ordinary consciousness: the reality experienced in an NDE is “realer than ordinary waking experience.”

While these incidental features are generally very prevalent in NDEs, they do not serve to differentiate

NDEs from other types of paranormal experiences, which may have some or many of these features—also with heightened intensity—for example, occurring with dreams, mind-altering drugs, deathbed visions, mystical experiences, etc.

Validation of NDE Scale Translations

The rank order of the NDE features can be helpful in comparing different datasets to identify differences in NDEs in different nationalities and cultures. However, we propose that it would be important *first* to validate the NDE Scale when it is translated into another language. We suspect that differences that may appear between, say, English-speaking NDErs and French-speaking or Chinese-speaking NDErs may be due more to *subtle nuances in the translation* of the scale questions than in the actual differences in the NDE experience itself.

For example, we noted that the rank order of scale item N14 (Encounter a mystical being or presence?) is much lower in the two French-language NDE Scale re-

Table 5. Prevalent but Incidental NDE Features

Scale Item	Scale Question	Accounts with this Item (N=565)	Individual Prevalence	Feature Partition
N5	Feeling of peace or pleasantness?	484	85.7%	
N1	Time speed up or slow down?	476	84.2%	
N9	Senses more vivid than usual?	446	78.9%	Prevalent features (Incidental)
N7	Harmony or unity with the universe?	428	75.8%	
N6	Feeling of joy?	426	75.4%	
N4	Suddenly seem to understand everything?	355	62.8%	
N2	Thoughts speeded up?	238	42.1%	



Table 6. Comparison of Rank Prevalence of a Dataset Using a Chinese NDE Scale Translation

Scale Item	Scale Question	Lai et al. N=51 count	Lai et al. N=51 prevalence	Lai et al. N=51 rank	IANDS Exp. Reg. N=565 rank	Lange et al. N=203 rank	Feature Partition
N12	Separated from your body?	37	72.5%	2	1	1	
N14	Encounter a mystical being or presence?	17	33.3%	6	2	4	Prevalent features (Essential)
N13	Enter some other, unearthly world?	34	66.7%	3	3	2	
N8	Surrounded by a brilliant light?	21	41.2%	5	4	3	
N16	Border or point of no return?	32	62.7%	4	5	5	
N15	Deceased or religious spirits?	38	74.5%	1	6	6	Rarer derivative features (Not essential)
N10	Aware of things going on elsewhere (ESP)?	9	17.6%	8	7	7	
N3	Scenes from your past?	10	19.6%	7	8	8	
N11	Scenes from the future?	2	3.9%	9	9	9	

sults compared to the two English-language results in Table 4 (rank 5 versus rank 2 and 4). The full versions of the N14 question are:

- English: Did you seem to encounter a mystical being or presence, or hear an unidentifiable voice?
 - 1 = I heard a voice I could not identify.
 - 2 = I encountered a definite being or a voice clearly of mystical or unearthly origin.
- French: Vous a-t-il semblé rencontrer une présence ou un être mystique, ou entendre une voix non identifiable?
 - 1 = J’ai entendu une voix que je ne pouvais identifier.
 - 2 = J’ai rencontré un être ou une voix manifestement mystique ou d’origine immatérielle.

In the IANDS Experience Registry dataset, the 420 answers to N14 were 85% answered “2,” that is, highly skewed to the second answer. So, we would expect any difference in the *meaning* of the N14 “2” wording might account for a different ranking between English and French NDErs for the same feature of their experiences. Most French-speaking NDErs seemed to have interpreted the *meaning* of N14 differently from English-speaking NDErs, scoring it a “2” much less frequently.

For those who are reasonably familiar with both English and French, one possible difference in meaning may come with the translation of “unearthly origin” as “origine immatérielle.” In English, *especially in the context of NDEs*, “unearthly origin” connotes more “of supernatural origin,” that is, not originating in the earthly (physical) realm, than “of nonmaterial origin.” In French, “origine immatérielle” may connote more nonmaterial or nonphysical origin. So “d’origine immatérielle” is an acceptable translation but “d’origine surnaturelle” might be better.

Another translated version of the NDE Scale—in Chinese—was used in a study of NDEs in dialysis patients in Taiwan (Lai et al., 2007). Linguistic validation of the Chinese translation was performed by four physicians fluent in both Chinese and English, with permission from Greyson. Fifty-one NDEs were reported by 45 patients, and the frequencies of the NDE features were tabulated (Lai et al., 2007, Table 3, p. 129). We compared the rank prevalence of the Lai et al. data with the IANDS Experience Registry and the Lange et al. datasets (Table 6).

We noted that two NDE features in the Lai et al. dataset—N14 (Encounter a mystical being or presence?) and N15 (Deceased or religious spirits?)—appeared far out of the expected rank order, N14 being much less prevalent than expected and N15 being much more prevalent. The translations of these two items should be checked carefully with an informed understanding of the context of near-death experiences, for example that, NDErs report encounters with mystical spiritual beings, deceased relatives, traditional religious beings, and a Being of Light.

As with the apparently problematic French translation of N14, both the N14 and N15 features in the Chinese translation are the only two of the 16 scale features dealing with encounters with spiritual beings—a mystical being or presence and deceased or religious spirits. The concepts of these features may be difficult to express in *any* language and, therefore, difficult to translate between languages.

Therefore, a good approach in developing a revised version of the NDE Scale would be to *review the terminology in all feature descriptions* to ensure that it is clear and unambiguous, especially with respect to translating the descriptions to other languages.

Partitions of the NDE Scale Features

Greyson (1983) grouped the 16 NDE features of his

Scale into four “components” and numbered the features accordingly: Cognitive (N1–N4), Affective (N5–N8), Paranormal (N9–N12), and Transcendental (N13–N16).

Similarly, Martial et al. (2020, pp. 11–14) developed an alternative 20-element NDE Scale called NDE-C. The Martial team performed a factor analysis on the NDE-C scale results and grouped the 20 NDE-C scale features into five “factors,” Beyond the usual, Harmony, Insight, Border, and Gateway.

In the present study, we derived the partitions of the scale features from the theoretical mind entity framework and the prevalence of the nine framework-related features. The five “essential” features are the highest prevalence features that encompass nearly all of the NDE accounts in the dataset. The remaining four features comprised the less prevalent “derivative” features. We considered the remaining seven features to be “incidental,” that is, they are important, prevalent aspects of the experience but do not help to differentiate NDEs *per se*.

Confirmation of the Mind Entity Framework

If the mind entity framework is correct, then the person’s consciousness in an NDE separates from the physical body. While the NDEr’s consciousness is out of body, the NDEr may have veridical perceptions of the physical environment and then may have encounters with spiritual beings such as deceased relatives, religious figures, and mystical beings. The NDEr may have a life review and then may reach a border or be told to return to the body. The NDEr then returns to the physical body. In other words, according to the mind entity framework, NDEr accounts are accurate portrayals of what actually happened in the NDEr’s experience. NDEs are real, not imagined or random events.

We believe that the NDE Scale results confirm the validity of the mind entity framework:

- The nine NDE Scale features related to the separation of consciousness describe a *coherent course of events* beginning with an explicit or implicit separation of the NDEr’s consciousness from the physical body. The subsequent features resulting from this initial event describe the specific sequence of events in each NDE (Table 2). The nine NDE separation-related features can appear in any order in numerous different patterns, indicated by the high pairwise prevalence of each feature with the others in Table 3. Therefore, based on the mind entity framework:
 - We would expect that N12 (Separation from the body) would be the *most prevalent* since that aspect of the experience is the fundamental feature of the framework. N12 is the most prevalent fea-

ture in the four NDE studies in Table 4.

- The *other prevalent* NDE features describe aspects of being in a transmateral or unearthly realm (N13), seeing or being surrounded by a brilliant light (N8), encountering a mystical being or unearthly presence (N14), and coming to a border or point of no return (N16). As we would expect, these “essential” features fit major elements of the framework, namely experiencing different aspects of the transmateral realm after separating from the body (Mays & Mays, 2018).
- Again, as we would expect, the four derivative NDE features define the *less prevalent* aspects of the out-of-body NDE experience—meeting deceased loved ones or spiritual/religious figures (N15), out-of-body perceptions in the physical realm (N10), visions of one’s past (the life review, N3), and prophetic visions of future events (N11). These four “derivative” features also fit the expected transmateral aspects of the framework (Mays & Mays, 2018).
- Likewise, the nine separation-related features form a *coherent set of mutually prevalent elements*. Any essential or derivative element can appear with any other element. The pairwise prevalence of the essential and derivative features in Table 3 shows that the essential and derivative NDE features form a coherent hierarchy describing the varieties of NDEs.
- As the separation-related features suggest, *the NDE Scale data show that NDEs are universal*. The consistency of the rank prevalence order of the framework-related features in five separate studies in Tables 4 and 6 shows that NDEs are consistent across different sets of NDErs from different countries and languages.

IMPLICATIONS AND APPLICATIONS

A well-founded theoretical framework serves as the unifying factor to identify the underlying process of a phenomenon, which manifests outwardly as its various elements or features. The unifying factor provides the framework in which all elements fit. The framework is the conceptual architecture for describing what *lies behind* the phenomenal features and becomes the *definition* of the phenomenon.

Therefore, the presence of any one of the *essential* separation-related features should be sufficient to classify the experience as an NDE, provided the NDE score meets the minimum score requirement of 7. Because of this, we believe the separation-related features are a more precise test for an NDE than the NDE Scale as a whole.

In this paper, we described the mind entity framework, which explains the phenomenon of near-death experiences in terms of two aspects of human beings: the nonmaterial mind and the physical body. (We must leave the question of how the nonmaterial mind can interact with the brain in the mind entity framework to a subsequent paper.) The unifying factor for NDEs is the separation of the NDEr's consciousness from his physical body. We then applied this framework to NDE data derived from NDE Scale results and showed that NDE Scale data confirmed the validity of the mind entity framework through the prevalence, coherence, and universality of the framework-related NDE features.

Thus, to give our hypothetical journalist a sound bite definition, we would say:

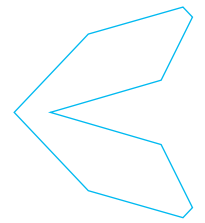
An NDE is a profound subjective experience that is caused by the person's consciousness separating from their physical body.

To explain a little further, we would add that NDErs report various features that indicate that their consciousness was not connected to their body during their NDE. For example, they felt separated from their body, they encountered a mystical being or presence, they entered some unearthly realm, they encountered a brilliant light, and/or they encountered a border and had to return to the body. We could also add that more than 98% of NDErs report one or more of these five features. There are many other features reported, but these five indicate that the NDEr's consciousness was no longer located in their physical body during their NDE.

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RESEARCH
ARTICLE

A Series of Past-Life Visions and Intuitive Impressions Surfacing in Middle Adulthood with Behavioral Influences Beginning in Childhood

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HIGHLIGHTS

A woman whose past-life memories began to surface in her 50s appears to have been influenced subconsciously by past-life experiences beginning in early childhood, but increasingly after a near-death experience as a teenager.

ABSTRACT

In the wake of several traumatic experiences, a French woman in her early 50s began to have visions and intuitive impressions about seven past lives she felt she had lived. She was able to verify memories of the most recent life and identify the deceased, an American Marine fatally wounded in Vietnam. It then became clear that she had been subliminally influenced by this life in various ways from childhood, most strongly following an NDE at 18. On the eve of the Russian invasion of Ukraine, she began to have detailed visions of a Don Cossack who had served in the Imperial Guard of Catherine the Great and Alexander I, dying during Napoleon's retreat from Moscow in 1812. Although the Cossack story is plausible, it has not been possible to investigate it or to identify the individual involved; nonetheless, here too there are apparent behavioral influences on the subject's present life. Although the subject recalled the other five lives in fragments only, some of these also seem to have impacted her unconsciously. This study explores the nature of past-life remembering and demonstrates how presumptive past lives may exercise an influence behaviorally, emotionally, and somatically, even in the absence of conscious recall.

KEYWORDS

Declarative memory, implicit memory, memory cues, memory retrieval, memory verification, past-life memory, reincarnation.

SUBMITTED July 11, 2023
ACCEPTED January 12, 2024
PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243061>

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INTRODUCTION

In the great majority of reincarnation cases studied by Ian Stevenson and colleagues, the subjects are young children, typically 2–4 years, when they begin to speak of previous lives. Past-life memories surfacing in adulthood have received little attention, partly because it is more difficult with them to rule out ordinary sources of information. Also, adults' past-life memories tend to be more

fragmentary and less richly developed and, therefore, are less often "solved" (determined to refer to a particular deceased person). Whereas children's past-life memories frequently present in the waking state, those of adults are more likely to arise in dreams and other altered states of consciousness, suggesting that past-life memory retrieval is influenced by developmental factors related to the maturation process (Matlock, 2019).

Adults claim to recall multiple past lives more often



than children do (Matlock, 2019; Wehrstein, 2017). Although it is unusual for more than one of multiple past lives to be solved, there are a few adult cases with two identified previous persons. Stevenson (1983) wrote about Pratomwan Inthanu, a Thai nun who, at 20 years, while meditating, recalled two lives with sufficient clarity to solve both. Jenny Cockell (1993, 2008, 2017, 2021) self-reported memories of several lives, two of which she was able to solve. KM Wehrstein (2019a, 2021) studied two solved past lives of Will, an American who claims to recall bits of what may be as many as 30 lives. In no cases so far reported has it been possible to verify more than two previous lives.

One finding from Stevenson's work with predominantly child cases is that people tend to reincarnate close to where they die—the median distance between the places of death and rebirth in Stevenson's cases is only 25 kilometers (15.5 miles) (Stevenson, 2001, p. 242). Long-distance (of over 50 km from the place of death to the place of birth) and international child cases are unusual, and solved international child cases are rare; Matlock (Haraldsson & Matlock, 2016, pp. 229–235) found accounts of only 14 of the last. Adults may recall reincarnating internationally more often than children do, but as yet, there are too few reports to be confident of this pattern. It may turn out that reincarnating over long distances is culturally influenced, with Westerners more likely to reincarnate internationally than Asians (Matlock, 2019, pp. 186–187). Will's most recent life entailed reincarnating internationally, from Germany to the United States (Wehrstein, 2019a). Another example of international reincarnation is described in the present paper: the French-born subject, E.C., recalled being an American Marine, fatally wounded during the Vietnam War, who died at Clark Air Base in the Philippines.

The Marine life is the only one of seven past lives recalled by E.C. that is solved, although apparent memories of a Don Cossack who served in the Russian Imperial Guard in the time of Catherine the Great and Alexander I, dying during Napoleon's invasion of Russia in 1812, include numerous plausible details. E.C. recalled five other lives in much less detail. In some ways, E.C.'s life series is typical of adult recollections, although her verified memories and unverified visions are distinguished by their appearance in a variety of states of consciousness—waking, hypnagogic, and nocturnal dreaming, as well as meditation to music and regression under hypnosis utilizing YouTube protocols—and are regularly accompanied by intuitive impressions. E.C.'s case is interesting as well for the course of its development. As in other instances in which past-life memories arose principally in adulthood, there were childhood precursors (Matlock, 2019, pp. 204–205),

but the majority of E.C.'s past-life memories, visions, and intuitive impressions emerged following a near-death experience (NDE) at 18 and, more forcefully, after other traumatic events in her early 50s.

INVESTIGATION

I learned about this case through my Signs of Reincarnation Facebook group and, starting in November 2022, investigated it through the group page, instant messaging, and emails. Although E.C. is the primary source for both her experiences and their verifications, I inspected many of the web sites and other materials she employed in her research. By these means, I was able to confirm all important elements of her account. I consulted with Benjamin Bagley, another member of the Facebook group who had been in touch with E.C. at the height of her experiences. Not only is the Marine life solved, it has written records made before verifications of the memory claims, adding to the small number of published cases with this feature (Matlock, 2021).

PROGRESSION AND PRESENTATION OF E.C.'S PAST-LIFE MEMORIES, VISIONS, AND INTUITIVE IMPRESSIONS

Table 1 lists key events in E.C.'s life affecting the development of her past-life memories, visions, and intuitive impressions.

E.C.'s Early Years (1968–1976)

E.C. was born on August 9, 1968, in Orléans, France. As a young child, she preferred to play with boys at boys' games. Her favorite toys were farm animals and, above all, horses. As a toddler, she would sit on the arm of the family sofa, pretending to ride it like a horse. When she was 6 or 7, she requested a Zorro or pirate costume but received a pink princess dress she never wore. When induced to use girls' clothes or make-up, she felt as if she were donning a disguise. She liked the name David and noticed it everywhere—a classmate named David, an actor, a singer. She had recurring dreams of walking through a dark forest with other people, taking care not to be seen or heard. She was strongly attracted to helicopters. Whenever she heard one, she would step out onto her apartment balcony and search the sky for it. She needed to identify the "bird" and see whence it was coming; she was disappointed when it did not fly in her direction.

In retrospect, E.C. recognizes these things as related to past-life experiences, but at the time, they seemed no more than expressions of her individuality.

NDE and Aftermath (1986–1990)

Table 1. Development of E.C.’s Past-Life Memories, Visions, and Intuitive Impressions

Date (E.C.’s age)	Event
Aug. 9, 1968	Born in Orléans, France.
1978 (10)	Parents purchase weekend house in country; begins riding lessons.
1985 (17)	Is given first horse, a young Norwegian fjord horse.
Dec. 27, 1986 (18)	Has NDE following accident with two-wheeled sulky.
1987 (18)	Begins to be drawn to things military and American; applies to French military, but after rejection for medical reasons returns to horse breeding.
Mar.–June, 1990 (21)	Performs internship with equine vet and quarter horse training stable in Wichita, Kansas.
1998 (30)	Purchases 15 acres of land, begins to breed quarter horses.
2010 (41)	Starts to work as sales and export associate in defense and aerospace industry.
2016 (48–49)	Is forced to sell farm. Several horses die.
Jan. 2018 (49)	Stops working in defense and aerospace industry due to undiagnosed illness.
Dec. 2019 (51)	Begins regular, daily meditation to assist with health issues; apparent past-life memories surface during these meditations.
Jan. 2021 (52)	Seeming afterdeath communication from pet dog encourages spiritual development.
Feb. 2021 (52)	Suffers second accident, badly injuring arm.
Oct. 23, 2021 (53)	Has meditation vision of landing strip at Chu Lai, Vietnam and, with aid of pendulum, recalls name John David Smith. Starts using guided meditation and hypnotic regression in hopes of recovering memories.
Oct. 2021–Aug. 2022 (53)	Begins to make regular notes of memories and visions. Memories of Smith surface in various states of consciousness; many verified.
Dec. 2021–May 2022 (53)	Envisions fragments of five other lives in various states of consciousness, including guided meditation and hypnotic regression.
Feb. 2022 (53)	On eve of Russia invasion of Ukraine, begins to have visions of Don Cossack who served in Russian Imperial Guard.
July 3, 2022 (53)	Stops using music meditation to relax and guided meditation and hypnotic regression to retrieve information about previous lives.
Aug. 11, 2022 (54)	Involuntary memories of Smith cease on anniversary of his death; thereafter, visions and impressions of Cossack guard dominate.
Nov.–Dec. 2022 (54)	Identification with Smith resurges in response to case investigation.

E.C.’s father was a telephone company manager, and her mother was an English teacher. When she was 10, they purchased a small country house on the Loire River for weekend getaways. E.C. took lessons at a nearby riding school but gave them up because they were mostly about show jumping and dressage, whereas she was more interested in trail riding. She made a new friend who rode and at 15, asked for her own horse. At 17, she was given a young Norwegian fjord horse, which she boarded on an adjacent farm and trained to pull a two-wheeled sulky. All went well until the end of December 1986, when she was 18. She needed to go to the nearest village on an errand, and decided to drive her horse there, pulling the sulky. Unfortunately, along the way, a fighter jet flew noisily directly above them. The horse spooked and galloped off; the sulky struck something, and she was ejected.

E.C. recalls viewing her body from above, with the thought that this was not a good place to lie down. She felt no pain, nor the hard ground or December cold, but saw an exceedingly bright yet not dazzling white light. In the light were silhouettes from which two luminous fig-

ures detached and moved toward her. A voice advised her that it was not her time to die and that she should return to her body. She then heard her name called by a paramedic in the ambulance that had come for her. Although it seemed that only a few minutes had elapsed, in fact it had taken two and a half hours for her to be found after her horse had been spotted alone in a field. She was carried to a hospital with head trauma but otherwise uninjured, very concerned for her horse. When she was discharged 48 hours later, she asked her parents to take her straight to his pasture, because she did not believe them when they assured her he was unhurt.

Following her NDE, E.C.’s interests changed in significant ways. She had planned to become a veterinarian and, in her first university year, took classes in biology and chemistry. After the NDE, she realized she preferred to work outdoors and began to study horse breeding in an agricultural school. Her riding style changed. Whereas before her NDE, she had ridden in the English style, holding the reins in both hands, she now shifted to Western style, holding the reins in one hand only. She began to dress

in military surplus green and khaki camouflage clothing with American caps and elected to write her thesis on American quarter horse import and breeding in France.¹

E.C. developed a preoccupation with the Vietnam War and decorated her dormitory room with pictures of military helicopters and fighter planes. She was strongly drawn to helicopters and wanted to take flying lessons, but these turned out to be too costly to pursue. She would have liked to have done a stint in the French military, but after tests, was told she would never be a paratrooper or equestrian due to a bad back, an assessment that left her devastated. During the same period, she experienced a second recurring dream, involving a military transport plane crash in watery terrain.

E.C. received her breeding technician diploma in 1989, and in March 1990, when she was 21, she arranged to go to Wichita, Kansas, Orléans's twin city, for internships with an equine vet and at a quarter horse training stable. She recalls—and believes she will always remember—that when the airplane door opened at the Wichita airport after an eleven-hour flight, she felt as if she had come home. Everything seemed familiar and easy—buying a used car, the food, the way of life, the sound of the language. She quickly made new friends, one of whom picked her up one day in a Ford Mustang convertible with the top down. She was wearing Ray-Ban sunglasses and listening to the radio, when a strange déjà vu feeling and sense that she was someone else washed over her. When she visited McConnell Air Force Base in Wichita for an open house with the Blue Angels demonstration squadron, the atmosphere felt familiar. She purchased a souvenir pin depicting two UH-1 Huey helicopters, the emblematic chopper of the Vietnam War.

Strangely, when a friend suggested they visit Colorado, she had an anxiety attack. Although she could not explain why, she was absolutely opposed to going to Colorado. Nor did she want to depart the United States when the time came to leave in June. She should have been happy to return to her parents, her friends, and her horses, but instead was in tears, feeling as if she were saying goodbye to her country forever. Upon her return home, she began to joke that she was the reincarnation of an American soldier killed in Vietnam.

Renewed Trauma (2015–2021)

E.C. acquired her first quarter horse foal in 1989 and her first broodmares in 1994, renting pastures and shelters for them not far from her residence in rural north-central France. In 1998, she bought 15 acres of land east of the Loire and built an American-style ranch house and barn, decorating the house with Americana.

She took office jobs to augment her income but did not like any very much until she was hired as a sales associate at a firm in the French aerospace and defense industry in 2010. There, she enjoyed typing contracts, dealing with the supply chain to improve lead times, and assisting clients from around the world with export licenses for aircraft and submarine parts. The office walls displayed appealing pictures of airplanes and helicopters.

E.C. was happy in her career until a succession of events precipitated major life changes. She was forced to sell her farm and house in 2016 after five of her horses died in quick succession. This was followed by the emotional blow of losing her father in 2017. At the office, the workload increased, leading to her resignation, along with others, at the start of 2018. She could feel her health declining, partly as a result of having lost so much of the life she had spent years building. Suffering from insomnia and pains throughout her body, especially in her left side and back, she submitted to an array of medical exams. Doctors, however, were unable to find a physical cause for her symptoms, and told her that her malady was all in her head. They prescribed antidepressants, but did no more.

Now disenchanted with conventional medicine, E.C. began to research treatments utilizing medicinal herbs she could grow on her farm. She studied Reiki energy healing and dowsing and taught herself to use a pendulum. At the end of December 2019, she started meditating daily with 432hz music she found on YouTube. The procedure instructed her to imagine a quiet place to relax, and she repeatedly envisioned a serene scene of waterfalls in a forest, a mountain of dark gray rocks, and a river. Sometimes, there were communications with animals and messages that there was something behind the waterfall that would lead to knowledge of the past and future.

E.C. felt herself opening spiritually, a process furthered by an experience after she had to put down her Australian shepherd, Gibbs, due to cancer, early in 2021. After Gibbs's death, she lit a candle near his picture in the living room. At about 10 p.m., she realized the candle had gone out on its own. When she retired for the night, she checked to make sure it was still extinguished, but when she awoke at 2 a.m., the house was suffused with a soft glow, and she found the candle lit again. She felt certain that this was a sign from Gibbs. A week later, he appeared in one of her music meditations as a healthy young dog and conveyed to her that she should not worry about him or be sad, because he would soon be returning as a dog named Sam. He showed her a beautiful place with lots of dogs, all of whom seemed happy. Before she could pose the question, Gibbs assured her that a similar place existed for horses, and she imagined an exquisite pasture with

many horses.

Not long thereafter, in the third week of February 2021, E.C. suffered a second serious accident. She was holding a horse when it bolted, dragging her and almost severing her right arm. Her wrist was broken, and muscles and ligaments of her arm were torn as far as the shoulder; the shoulder's tendon was torn as well. She could not drive a car for four months. Today, she has less strength in her right arm than previously and has trouble lifting it above her shoulder. She has had to give up riding.

On the morning of October 23, 2021—eight months after being dragged by the horse—while meditating with her eyes closed, E.C., for the first time, saw a landscape unfold as if she were flying above it. There was dry land with lots of sand, long dark buildings side by side, some bright metallic buildings, a watch tower, and a barbed-wire fence. She knew intuitively that this was a landing strip and heard the names “Chu Lai” and “Da Nang.” She recognized these as places in Vietnam and felt a profound conviction that she had been there in reality. Retrieving her pendulum, she asked if this were so, and received the answer “yes.” Recalling that she had often joked about having a past life as an American soldier in Vietnam, she decided to see if she could get his name. By reciting the alphabet and noting on which letters the pendulum swung to the right (yes) or left (no), in growing astonishment, she recorded the name John David Smith.

John David Smith (2021–2022)

E.C. lost no time looking online for John David Smith. She entered his name, followed by “Vietnam,” and the search engine returned a row of photographs, along with page links. Shocked by one of the pictures, she clicked on it, bringing up the information that John David Smith of Camden, New Jersey, had been killed in action in Vietnam. One of the page links went to the Wall of Faces,² where she learned that Marine Sergeant Smith had died on August 11, 1966, two years before her birth on August 9, 1968.

At this juncture, E.C. began making notes of her apparent memories and her efforts to verify them, jotting on loose papers and in old notebooks. She was not yet taking these activities fully seriously and was so excited by what she was finding that she did not think to record the dates of writing, but her internet search history logs the dates she accessed web pages. Dates are also available for online posts, messages and emails to friends, and calls she made from her smartphone.

On the evening of October 23, the day she discovered Smith's name and identity, E.C. decided to try to recover more memories through a past-life regression uploaded

on YouTube by French hypnotherapist Frédéric Barbey, something she had not done before. After guiding her through relaxation, Barbey's voice directed her to see an important moment in the life she recalled. She visualized Smith in a military uniform lying on a cot in a tent, writing a letter. Other men in uniform were playing cards and laughing at him, because he was writing to his family, rather than to a wife or girlfriend. When Barbey asked her to move to another important moment, she saw Smith walking in file with other Marines down a road and then haphazardly through a rice paddy to the left of the road, carrying a pack, in heavy rain. He had a bad feeling about walking to the left of the road, but they had been ordered to walk there, so he proceeded. Suddenly, shots rang out, and he was aware that someone named Harry or Larry had been hit. Then he felt an intense burning on his left side and fell into the water. He heard a voice say, “Sergeant's hit! Sergeant's hit!”

In a related scene, perceived from the inside, in field perspective, Smith was lying on a stretcher, immobile and unable to speak. A voice to his left said, “It's gonna be OK, son! We're taking care of you.” Another voice to his right said, “Stay with us, stay with us!” Smith was aware of a crew member of the medevac helicopter that had brought him to this place lying dead on a stretcher to his right, accompanied by the sense that he was the cause of the man's death. Smith was aware that he was going to die as well, and E.C. cried out, “I'm sorry! I'm sorry!” although she did not know why she said this. When Barbey asked her to move to the end of the life, she saw Smith in a well-lit modern building, still unable to move. He was not afraid of dying, although he would have preferred to be at home with his family. Then E.C.'s perspective shifted and she was looking down from above. Doctors and nurses surrounded someone, seemingly very busy. She emerged from the regression lying on her sofa shaking, but otherwise unable to move for some minutes.³

When she regained control of herself, in an effort to verify the details of these images and impressions, E.C. returned to Smith's Wall of Faces page, where she read Remembrance comments she had passed over before. The longer ones needed to be expanded to view the texts in their entirety. One by W. Killian, headed “Final Mission of Sgt John D. Smith,” gave details of the Operation Colorado mission in which Smith was fatally wounded:

At about 1100 hours on August 10, 1966, during Operation Colorado, the 1st Battalion, 5th Marines, made contact with elements of two NVA battalions in the vicinity of Cam Khe hamlets (1) and (2) on Route 586, 5 miles west of Tam Ky in Quang Tin Province, RVN. The initial con-

tact developed into a full-fledged battle fought in a driving rainstorm, which did not clear until about 1730 hours. Although Marine Observation Squadron 6 (VMO-6) provided armed helicopter gunship support, and both shore-based artillery and naval gunfire supported the Marines, fixed-wing aircraft were unable to operate in the area until the rainstorm broke. The 1/5 Marines suffered 14 men killed in action, with another 65 wounded, but killed more than 100 NVA troops before the battle ended on the morning of August 11th. Three Navy corpsmen were among the dead, including HN Lawrence T. Steiner, HM3 James T. Elrod, and HM3 Walter P. Jackson. SSGT Robert T. Walsh, a gunner on a medevac helicopter from Marine Heavy Helicopter Squadron 361 (HMH-361), was also killed after suffering gunshot wounds to the chest during a medical evacuation. The lost 1/5 Marines included SGT Ernest B. Amador, LCPL Richard P. Donathan, PFC David L. Faught, CPL Douglas B. Haddix, LCPL Robert D. Higbee, LCPL Gregory M. Howard, PFC Lawrence J. Kindred, PFC Melvin Rolle, PVT Richard A. Skinner, SGT John D. Smith, PFC Paul E. Sudsbury, PFC Kenneth E. Tasker, PFC Everette A. Thompson, and LCPL Richard W. Williamson. [Taken from coffeldatabase.org and thevirtual-wall.org]⁴

E.C.'s attention riveted on "Colorado," as she recalled her intense reaction to the suggestion of visiting Colorado in 1990. Killian's Remembrance listed the names of several Marines from Smith's company killed that day, among them PFC Lawrence J. Kindred, perhaps the "Harry" or "Larry" about whom Smith thought just before he himself was struck. Further, it stated that "SSGT Robert T. Walsh, a gunner on a medevac helicopter ... was also killed after suffering gunshot wounds to the chest during a medical evacuation." Although she has not been able to confirm the impression, E.C. felt and continues to feel that Staff Sergeant Walsh was the man lying on the stretcher next to Smith in her regression memory.

Killian's Remembrance had nothing to say about several other details of her regression memories. In subsequent research on Operation Colorado, E.C. learned that Smith's company had been walking through a rice paddy to the left of the main road at the time he was shot and that the heavy rain had delayed medevac helicopters from reaching the battlefield to rescue the wounded.⁵ Was that delay why she had always been preoccupied with helicopters and, as a child, had gone out on her balcony whenever she heard one in the air? And could Smith's being shot

from the left explain the persistent pains in her left side?

Searching the internet two days later, on October 25, E.C. found a New Jersey Vietnam Veterans' Memorial Foundation Facebook page with a post honoring Smith, again said to be killed in action.⁶ The post was authored by a sister, Joyce Hammel, who disclosed that Smith, who had gone by "Dave," had seven sisters and two brothers. He had written numerous letters home from Vietnam, some arriving after his death. Hammel also related that at the age of 4 or 5, Dave had suffered a terrible accident with one of his arms, sticking it in an old wringer his mother was using to wash clothes. She had taken a basket of wet garments to hang on the line, but rushed back into the house when she heard Dave's screams to find his arm caught in the wringer up to his shoulder. His arm was crushed; over 100 stitches were required to close the wounds and reattach his muscles, and his arm growth was stunted thereafter. Dave did not let this stop him; he continued to enjoy sports and, in adulthood, joined the military, first the Army and later the Marine Corps. E.C. cried upon reading Hammel's account. She thought about her own recent accident and damaged arm. That Smith had not let his injury stop him encouraged her to persevere in recovering from her own impairment. She returned to the post on the anniversary of Smith's death in 2021 and 2022, leaving the comment, "RIP. You will not be forgotten."

On October 27, E.C. called her best friend and sent her an instant message with Smith's photograph and the caption, "Voilà c'est moi avant," "This is me before." In the days and weeks following the regression, E.C. experienced, in her waking state, apparent flashbacks of Smith's life. In one, he was an adult with something important to say to his parents: that he had decided to join the Marine Corps.⁷ His mother was in the kitchen, and his father was sitting in an armchair, reading a newspaper. He could not see his father's face, because he would not lower the newspaper. There was no apparent reaction, and then his father said, "Did you tell your mother?" Smith answered that he had not yet, although he presumed that his mother could hear the conversation from the kitchen. "You should tell her," said his father, the newspaper still raised.

In other flashbacks, Smith was a child. In one, he was playing in front of his house with other children. Three or four stairs led up to the entrance. He jumped on the first step, then on the second with two feet and the third with one foot, a kind of challenge. On another occasion, E.C. saw Smith at his fourth or fifth birthday party. He was sitting at a table with many girls in front of him, happy because he was the center of attention. A woman behind him, whose face E.C. could not see, was holding a baby in her arms. In a third flashback, Smith and the rest of

the family were dressed in winter clothes, preparing to go out for some important event, but he could not find his gloves. He did not want to confess this, so he held his hands behind his back but was found out and scolded for it. His eldest brother Bill, meanwhile, was upstairs, refusing to come down. In a fourth flashback, he was holding a bat at a baseball game. His family was there to watch him play, which pleased him.

E.C. also experienced intuitions short of imaged memories about Smith's life. She had the sense that Smith was repeatedly told not to annoy his middle brother, perhaps due to health concerns. She recalled the expression "my second mom," although she did not understand its meaning. She felt that Smith had not done well at school; that he enjoyed playing tricks, even nasty tricks, to draw attention to himself; that he was jealous of Bill; and that his father regularly implored him to follow Bill's example. Oddly, E.C. has no imaged memories or intuitions of Smith from the ages of about 7 or 8 until he was 19 and told his father that he had decided to join the Marine Corps. She recalls, however, that on the eve of his deployment to Vietnam, Smith was approached by a young nephew who tugged on his sleeve and asked him, in a high-pitched voice, "Uncle Dave, are you going to kill people?"

Along with these imaged memories and intuitions, E.C.'s interests and behavior patterns changed. She began to listen to American popular music from the late 1950s and early 1960s, watch movies in their original English (she could not abide movies or television shows dubbed into French), swear spontaneously using English words and expressions, and eat peanut butter sandwiches on pre-sliced processed white bread. She became obsessed with documentaries about the Vietnam War and was inspired to sing the Marine Corps hymn every morning—realizing only then that she had been whistling the tune for years while riding on trails.

In November 2021, E.C. discovered that Smith had not been killed in action but had died the following day at Clark Air Base in the Philippines, consistent with her regression image of him dying in a well-lit, modern facility.⁸ E.C. accessed her first video about Chu Lai, the site of a Marine Corps air base from 1965 to 1970, on November 9, and realized that the landscape was similar to that surrounding the landing strip she had imagined while meditating on October 23.⁹

On December 9, E.C. left a virtual flower on Smith's Find a Grave page, and on Christmas Day, she started to type out her recollections to share with family and friends. She included a few pictures that spoke to her strongly. Two cousins and three friends read parts of her account, but she discovered that the majority of her family and acquaintances had little interest in past lives. She

began to look around the web for more receptive communities. She joined Carol Bowman's Reincarnation Forum on February 2, 2022, but made only brief comments, not wishing to divulge details in a public setting. It was the same on Military Past Lives. E.C. was equally circumspect in commenting in the Signs of Reincarnation Facebook group, and it was only in private messages and emails that the depth and complexity of her experiences became apparent.

E.C.'s obsession with Smith ended abruptly on the anniversary of his death (August 11) in 2022. Not only did she no longer need to research the Vietnam War, but she no longer felt compelled to listen to oldies radio stations and no longer experienced a longing to return to the United States. This proved to be only a lull, however; it was terminated when my case investigation brought a resurgence of her intense identification with Smith, more tears, and a renewed desire to go home to New Jersey. I comment on these later developments below.

A DON COSSACK IN THE RUSSIAN IMPERIAL GUARD (2022)

E.C.'s insomnia abated significantly late in 2021, but shortly before Russia invaded Ukraine in February 2022—when the threat of that action was much in the news—it returned strongly. Russian words and songs sounding in her mind made it impossible for her to sleep. After three consecutive nights of this, she began to experience headaches, shaking, and heart palpitations during the day. She decided to try to relax using her music meditation. This led to visualizing the life of a Don Cossack who served in the Imperial Guard for Catherine the Great (reigned 1762–1796) and Alexander I (reigned 1801–1825).

The first images of this life appeared in black and white or shades of gray, but before long, there were colors. E.C. visualized herself as a young boy on horseback on an immense, slightly hilly plain with dry yellow grass. The boy was dressed in a long white shirt with a wide belt, boots, and a Russian fur hat. He was racing with other young riders and felt immense joy, freedom, and happiness. Around them were dozens of stallions, geldings, mares, and foals, but when he turned, he saw a long white wall and a wooden gate that appeared to enclose a courtyard and buildings.

Wanting to know more about this life, E.C. took up her Barbey regression. She was surprised to see wooden ships, sailboats, and a port. Unaware that St. Petersburg had a port on the Neva River and thinking she must be remembering a different life, E.C. momentarily considered halting the regression but let it proceed. She next saw someone emerge from a long building along the docks. It

was the same person as in her meditation, now a man in his early 20s—tall, with black hair, dressed in a long red coat with a belt, a black hat, and leather boots, carrying a dagger and long saber. He was with two other men outfitted in the same fashion.

When Barbey's voice asked E.C. to move to another scene from this life, she saw the man standing before the gate of a large, wide-U-shaped palace. Passing through the gate, he turned immediately to the right and entered a long building. In the next scene, he was in a stable. He called his mare, saddled her, and rode into the courtyard in front of the palace with other similarly dressed men. They formed an escort, riding behind a carriage. He was in the left rear. He could hear the noise of the carriage wheels and horseshoes on the gravel road. When the carriage turned to leave the courtyard, he had the sense that someone inside was watching him; feeling somewhat anxious, he instinctively checked his uniform and his horse's harness. E.C. was aware that the someone was an important woman, the Empress Catherine II, Catherine the Great. Barbey directed E.C. to view the end of this life, and she saw the man, some years older, lying on a battlefield, cold and tired. He had been shot in the back and could not move. He realized that he was going to die and was greatly concerned about his horse, who had disappeared. In a final scene, E.C. viewed the battlefield from above, as the man flew around, looking for his horse, unable to find him.

Following this regression—the only one concerned with this life—E.C. gradually filled in the man's story through spontaneous waking visions and intuitive impressions. His family were Cossack horse breeders living near the Volga, in southern Russia, although she has the firm sense that they were members of the Don rather than Volga host. In one waking vision, E.C. saw herself as a youth of 15 or 16 when an important man, a rich noble (Alexei Orlov, she intuited), came to buy horses from his father. After watching the youth ride, Orlov offered to enroll him in cavalry school. Although this meant he would not see his family again, the boy and his father welcomed the opportunity, especially inasmuch as he was allowed to take his mare with him. A second rich man (perhaps Grigory Potemkin) recruited him into Catherine's Imperial Guard around 1785, when he was 19. E.C. felt that he remained in the empress's employ until her death in 1796, first mainly on horseback and then as a guard at the Catherine Palace gates and in the building's corridors. By this point, he no longer had his mare, but E.C. has no appreciation of how he lost her, or exactly when. She has no recollection either of the period immediately following Catherine's death in 1796, and thinks the guard must have left St. Petersburg. She recalls Alexander I, who assumed

the throne in 1801, and believes the guard returned to the palace at his invitation. She imagined the guard wearing a red vest and dark blue trousers, the uniform of the Life Guards Cossack Regiment organized within the Imperial Guard at that time. With her pendulum, E.C. determined the guard's name and patronymic to be Igor Ivanovitch, but she is uncertain of his surname and continues to refer to him as "the Cossack guard."

When Napoleon invaded Russia with his Grande Armée in 1812, the Cossack guard joined a cavalry regiment. He had a new horse, a dark bay, whom he loved as much as his mare. E.C. visualized a scene in a forest, perhaps near Smolensk or Krasnoi (names which resonated with her). Many riders were gathered in this place. It was early in the morning, with scattered snow on the ground, so possibly the Battle of Krasnoi, which was fought November 15–18, when Napoleon was retreating from Moscow. The guard held his horse's reins in his left hand with his saber forward in his right, awaiting the order to charge. Then they were galloping down the valley. He saw a horse and rider fall in front of him. Something hit his back, his horse stumbled, and he fell off. At this point, the vision coincided with E.C.'s regression memory of the guard lying on the ground in the cold, concerned with the whereabouts of his horse. He would have been about 46 at his death.

At the time memories of the Cossack guard began to surface, E.C. knew little about Russian history or geography. When she started to read articles in Wikipedia and other online sources in the middle of March 2022, they struck her as inaccurate and not very interesting, focused on the wrong issues. She reacted viscerally to certain names, such as Platon Zubov, who, she learned later, was only interested in power and money and acted badly when Catherine was dying. E.C. watched her first video about Napoleon's invasion of Russia on April 1. Subsequently, she discovered more scholarly materials in lectures posted to YouTube. Many of these were in Russian, but she was able to follow them with English subtitles and came to appreciate why she had the reactions to the people and events she did. She started studying Russian online partly to understand the words of Cossack songs but also because she liked the sound of the language. She purchased a Russian-French dictionary and a biography of Catherine the Great on May 9, 2022.

After the anniversary of John David Smith's death on August 11, visions of the Cossack guard dominated E.C.'s mind. Increasingly, she felt impelled to watch videos about St. Petersburg and came to think of Russia, not the United States or France, as her country. She became convinced that one of her quarter horses was the reincarnation of the guard's dark bay, which was the reincarnation

of his mare. On August 29, she messaged a friend that she had had the name “Tsaritsyn” in her head at night. A web search determined that, until 1925, this had been the name of the city now called Volgograd, on the upper Volga. A picture of the surrounding steppe terrain showed a gently sloping field with yellow grass, exactly what she had imagined in her February 2022 meditation.¹⁰ Don Cossack families had lived in this area during the 18th century.¹¹

E.C. was increasingly confident in the accuracy of her visions and impressions, but felt that something was missing. She did not possess a Cossack saber, a shashka. She ordered a replica of an 1881 Don Cossack design forged in Samara, upstream from Volgograd on the Volga. When she opened the package, she was simultaneously delighted and disappointed, because it was not “her” shashka. Nonetheless, there was a sense of familiarity about the weapon; she knew how to wield it, as if she had a somatic memory for the gesture. E.C. had enrolled in an online course teaching the Cossack sword dance, flankirovka. When she pulled the shashka from its scabbard, she felt as if she were the Cossack guard. In practicing the sword dance, she was better able to lift and swing her right arm, and could do so without pain. This exercise has become a central part of her physical therapy.

E.C. considers the Cossack guard to be her “soul’s” favorite life, partly because of its connection to horses, but also because she senses the guard was a good man who enjoyed life; was pleased with all the beautiful things he saw; was always optimistic, faithful, and honest; and never mourned the family he left as a boy, except in his last moments while going to battle. At the same time, E.C. worries that in telling his story, she is violating a pledge

of confidence. Although she has told me little about the Cossack’s work as a guard, other than a recurring dream of walking through the Catherine Palace corridors, she relates that in a hypnagogic state in December 2022, she kept saying aloud: “I can’t talk about that, I promised. I promised I won’t talk about what I saw, what I heard in the palace. What happened in St. Petersburg stays in St. Petersburg. I have sworn.” When she finally fell asleep at about 4 a.m., she dreamed about the park outside the palace at Tsarskoe Selo.

Fragments of Five Lives (2021–2022)

Between late November or early December 2021 and May 2002, E.C. had visions and impressions of five additional lives. The first visions surfaced unbidden during a music meditation. She was a trader riding a horse along a path through a forest, leading pack horses. They were set upon by thieves, who attacked the trader, killed his horse, and stole the goods he was carrying. From the atmospherics and the name Knud, which she obtained with the help of her pendulum, E.C. deduced that the trader was a Viking and placed this life in a Nordic country during the Middle Ages, the earliest of the seven lives she was to recall.

At the end of February 2022, E.C. wrote to her best friend about another life that appeared when she undertook a regression in hopes of recalling more about John David Smith. She entered the regression thinking about Smith but was surprised with images of a military parade through a city. The citizens were excited and seemingly happy, but they were waving Nazi flags. There were Nazi flags flying from surrounding buildings as well. E.C. was

Table 2. Reverse Chronology of E.C.’s Ostensible Past Lives

Dates	Life Ostensibly Recalled	Conditions of Recall
Aug. 9, 1968–	E.C. (present life), born in France	
Oct. 4, 1941–Aug.11, 1966	John David Smith, U.S. Marine, died at Clark Air Base in Philippines after being wounded in Vietnam.	recurring dream; music meditation; pendulum-assisted; guided meditation; regression; waking flashback; intuitive impression
c. 1920–c. 1940	Austro-Hungarian orphan, immigrated to US in 1938, died about age 20, perhaps of tuberculosis.	regression; recurring dream; music meditation; intuitive impression
c. 1897–1914/15	Canadian man killed in WWI in Europe, probably in France.	guided meditation; dream; intuitive impression
19th century?	Native American healer, perhaps Lakota.	music meditation with native American drums, flute, and singing
c. 1766–1812	Don Cossack in Russian Imperial Guard who died fighting Napoleon’s army in 1812.	music meditation; regression; hypnagogic visualization, dream, recurrent dream; music meditation; intuitive impression
No later than mid-1700s	Young man on Ua Pou, Marquesas Islands (French Polynesia), before arrival of Europeans.	music meditation; guided meditation; regression; intuitive impression
Late 700s–late 1000s	Viking trader in Nordic country.	music meditation; regression; pendulum

able to relate these images to a video of Hitler's arrival in Vienna in March 1938,¹² then through recurring dreams, music meditations, and intuitive impressions, constructed the narrative of an orphaned Austro-Hungarian Jewish boy who was living with his grandparents in Vienna, but in 1939 was sent to the United States for his own protection. The boy seems to have died in the U.S. at about age 20, perhaps of tuberculosis. E.C. sensed that the boy's mother, who would have died around 1922, was reincarnated in 1926 as her own mother.

Early in March 2022, while listening to Native American music with flute and drums for relaxation and meditation, E.C. saw an image of a Native American woman she felt to be herself, seated at the summit of a hill. She could see the stars in the sky above and the tepees and campfires of her village along a river in the valley below. In a second image, the same woman, now older, walked away from the village to collect medicinal herbs, but when she returned, all of her people, together with their dogs and ponies, were dead. E.C. described these memories on Bowman's forum on March 7. On March 19, she discussed them with a friend conversant with North American native culture, who told her that they were consistent with the Lakota, famous for their vision quests. Although it was mostly men who undertook this activity, women were not barred from it.

E.C. had long been attracted by the interior landscape of the Hawaiian Islands, with its craggy peaks and dense rainforests. She had the sense that Smith had visited Hawaii, perhaps en route to Vietnam, although she could find no record of this travel. Toward the end of April or beginning of May 2022, she encountered a friend she had not seen in some time. He had been living on Tahiti, in French Polynesia. Reflecting on what he told her about it, E.C. began to have the feeling that she, too, had once lived in that region.¹³ On May 2, she told her best friend that she had narrowed the area down to the Marquesas Islands and, on the following day, started watching YouTube videos about the archipelago. She watched her first video of the Marquesas on May 3 and discovered that the images fit the culture of native people of these islands, then found a video with a scene on Ua Pou which depicted the waterfalls in a forest, mountain of dark gray rocks, and river that had repeatedly come to her mind during her music meditations.¹⁴ It was a well-known spiritual retreat on the island. E.C. felt that her visions related to a period at the very beginning of contact with Europeans, no later than the mid-1700s.

The Ua Pou life was the fourth life preceding John David Smith, of which E.C. had become aware. She decided to arrange the lives in sequence, and she told her best friend on May 18. Noticing that there appeared to be a

gap between the Native American healer and the Austro-Hungarian orphan, she inquired of her pendulum if she had lived another life then. Assured that she had, she turned to her favorite guided meditation to learn about it. When prompted to visualize an important event in this life, she imagined a man of around 30 and a black-haired woman in a claw-foot bathtub. The woman, whom E.C. sensed was not his wife, called the man "Andy." After dressing in a military uniform, including a cap with a badge and an unusually broad brim, Andy took his leave. In the next scene, he was on a dock with many people, saying goodbye to a young, blonde woman holding a baby in her arms. E.C. knew this woman to be Andy's wife. They were Canadian. Andy turned and boarded what appeared to be a cargo ship carrying horses along with a variety of materiel. In the final scene, he was in a muddy trench at night, with explosions sounding around him. There was one last blast, then silence.

With Andy, E.C. had had enough of guided meditation and regression to learn about past lives. Each life had its own affective tone, and the combined effect of so many different lives surfacing close together, at times overlapping, left her emotionally drained and physically exhausted. She stopped using the technique for a while and then undertook a final regression on July 3, 2022, after having been asked to recommend a YouTube regression video. The images she saw at that time concerned John David Smith but included no new memories. Afraid of seeing things she did not want to see when she closed her eyes, E.C. also gave up her music meditations, but memories of Smith and visions relating to the Cossack guard continued to surface spontaneously in her waking state thereafter.

A CLOSER LOOK AT E.C.'S PAST-LIFE RECALL

The seven ostensible lives recalled by E.C. are listed in reverse chronological order in Table 2. The conditions under which the confirmed memories, unconfirmed visions, and intuitive impressions emerged are given as well. The number of lives is not unusual for an adult rememberer, nor is the global hopscotching uncommon for a Western case. Only the most recent life is confirmed, and we should not assume the rest are accurately recalled. They are superficially plausible, however, and if we examine the sequence provisionally, we see that it is not as great a departure from recognized patterns as appears at first glance. Although there is no evident reason the Cossack guard should reincarnate as a Native American healer, the next three lives lead logically from one to another, given the tendency to be reborn in the general vicinity of one's death. The healer returns as a Canadian man who dies in Europe during World War I. His next life is in Europe, but

Table 3. Subliminal Influences on E.C.’s Behavior, Personality, and Emotions

Date	Type	Influence	Past-Life Source
John David Smith			
From early childhood	Behavioral	Preferred boyish activities, felt wrong in girl’s attire.	Smith was male.
From early childhood	Emotional	Attracted to name David.	Smith was known by his middle name, David.
From early childhood	Behavioral	Fascinated with helicopters, looked for them to fly in her direction.	When Smith was fatally injured, medevac helicopter was delayed.
From 1987	Somatic	Chronic phantom pain on left side.	Smith was shot from the left.
From c. 1987	Behavioral	Whistles Marine Corps hymn while riding horse on trails.	Smith would have been familiar with the Marine Corps hymn.
1988	Behavioral, emotional	Sought to enlist in French military, devastated when rejected for medical reasons.	Smith enlisted in both Army and Marine Corps.
1988-1989	Behavioral, emotional	Preoccupied with Vietnam War, decorated room with pictures of helicopters and fighter planes.	Appropriate for Smith.
2010-2018	Behavioral, emotional	Works in French aerospace and defense industry.	Smith’s career in Marine Corps would have made him familiar with aircraft.
1990	Emotional	Has panic attack when trip to Colorado is proposed.	Smith was fatally wounded during Operation Colorado.
1990	Emotional	Purchases souvenir pin depicting UH-1 Huey helicopters.	Appropriate for Smith.
1990, June	Emotional	Distressed upon leaving the USA to return to France.	Smith died before returning to the USA from Vietnam.
From Oct. 23, 2022	Behavioral	Builds American ranch house.	Unknown if this is specific to Smith
	Behavioral	Enjoys listening to oldies radio stations from NJ; is especially fond of songs from late 1950s, early 1960s.	Smith was from NJ.
From Oct. 23, 2022	Behavioral	Begins to eat plain peanut butter sandwiches on white bread.	Unknown, but possible for Smith.
From Oct. 23, 2022	Linguistic	Begins to swear spontaneously in English.	Unknown, but possible for Smith.
From Oct. 23, 2022	Behavioral, linguistic	Inspired to sing the Marine Corps hymn every morning.	Appropriate for Smith
After Oct. 23, 2022	Emotional	Strong reactions to images, words related to Vietnam War, especially circumstances of Smith’s death.	Appropriate for Smith.
2022, Dec. 5	Emotional	Dreams of flying back to US and meeting Smith’s family at airport.	Shows continuing identification with Smith.
2022, Dec. 25	Emotional	Dreams of talking to Smith’s older brother Bill.	Shows continuing identification with Smith.
Cossack Guard			
c. 1970	Behavioral	Favorite toys are farm animals, especially horses.	Farm animals, especially horses, were central features of the family life of the Cossack guard.
c. 1970	Behavioral	As toddler, rode family sofa as if it were a horse.	Riding was a central feature of the life of the Cossack guard.
From early 1980s	Behavioral	Likes trail riding, dislikes show jumping and dressage.	Appropriate to Cossack guard.
From mid 1980s	Behavioral	Collects horse-related artefacts.	Shows strong concern with horses, appropriate to Cossack guard.
From Dec. 1986	Somatic	Phantom pain in back	The Cossack guard was fatally shot in the back.
From 1987	Behavioral	Preference for Western-style riding.	Western-style riding is similar to Cossack style in holding reins with one hand rather than both hands.
1990-2016	Behavioral	Chooses horse breeding as career.	The Cossack guard’s family were horse breeders.
From 2022	Emotional	Strong reactions to images, words related to Cossacks and Russia at time of Catherine the Great.	Appropriate for Cossack guard.
2022	Behavioral	Impelled to stand when hears “Let the Thunder of Victory Rumble!”	Appropriate for Cossack guard.

he immigrates to the United States and is reborn there. John David Smith died in the Philippines and was reborn in France, but if E.C. is correct in her intuition that her mother is the reincarnation of the Austro-Hungarian orphan’s mother, this conforms to other patterns—the importance of personal links between lives and the ten-

denity for there to be a motive for reincarnating abroad in international cases (Haraldsson & Matlock, 2016, pp. 232–235).

Conditions of Past-Life Recall

In *Signs of Reincarnation* (Matlock, 2019), I theorized that memories are registered in the subconscious stratum of mind and carried forward to a new incarnation when a stream of consciousness possesses a new body. After reincarnation, past-life memories remain in the subconscious unless drawn into conscious awareness. With children, past-life memories most often surface in waking awareness, less commonly in nocturnal dreams or altered states of consciousness. With adults, dreams and altered states play a larger role, and apparent past-life memories may be induced through age regressions or other means. E.C. is unusual in having a good number of intuitive impressions, which help place her fragmentary autobiographical memories in the context of other life events, amounting to what memory researcher Michael Conway (2005) called “autobiographical knowledge” of the lives in question.

The distinction between involuntary (for E.C., waking, hypnagogic, dream, music meditation, intuitive impression) and induced (guided meditation, past-life regression, pendulum-assisted) recall is important, because the two classes are associated with different degrees of evidential strength. Involuntary memories have proven far more reliable than induced ones (Matlock, 2019; Mills & Tucker, 2013). This is especially clear in cases with both involuntary and induced memories (Matlock, 2019, p. 219). In childhood, Jenny Cockell had a recurrent nightmare of being struck by a large vehicle. During a past-life regression in adulthood, she imagined a death due to illness. The regression included a name, which enabled her to obtain a death certificate—but this recorded a cause of death that matched Cockell’s childhood dream, rather than her regression (Cockell, 2008, p. 270).

Induced past-life memories may be distorted by the subconscious as a psychological defense, I have proposed (Matlock, 2019, p. 222). Involuntary memories arise with the acquiescence of the subconscious, but the attempt to elicit memories engenders an effort to protect the conscious psyche from reexperiencing traumatic events, such as deaths. There may be an example of this dynamic in E.C.’s memories of John David Smith. In her waking flashback of jumping up the steps of his house, she had the image of a two-story clapboard house, but in a guided meditation, when asked to visualize the house in which she lived, she saw a larger three-story dwelling. The possibility of distortion is why we should regard all unverified images as visions, rather than as memories. They may be compromised memories, but we cannot pinpoint where the inaccuracies lie without knowing the underlying truth.

E.C. reports that her past-life images present from both field and observer perspectives. She can begin a memory or vision viewing a scene from the inside (field

perspective), then see herself from the outside (observer perspective). The field perspective predominates in her waking and dream images, whereas field and observer perspectives are about evenly represented in regressions and guided meditations. With the exception of the Native American healer, memories and visions of all lives surfaced both spontaneously and through induction procedures. Although it is not clear that the order of conditions of recall influenced the recall, their order is preserved in Table 2.

Subliminal Influences on Behavior, Personality, and Emotions

Past-life memories are not exclusively declarative and explicit; they have implicit dimensions as well (Matlock, 2019). This would make sense if memories are recorded in the subconscious mind—there would then be no reason they should not influence a case subject subliminally. Particularly interesting are the unconscious impacts on E.C. before October 23, 2021, when the first episodic memories of John David Smith entered her awareness, and the persistence of her identification with Smith and the Cossack guard after she ended attempts to induce memories of her previous lives. The non-conscious subliminal influences (implicit memories) that may be traced to Smith and the Cossack guard are listed in Table 3.

From early childhood, E.C. felt more like a boy than a girl. She preferred to play with boys and resisted dressing in a feminine way; when made to wear girls’ clothes and make-up, she felt as though she were in disguise. This sort of gender nonconformity is common in reincarnation cases with a change of sex between lives (Pehlivanova et al., 2018; Wehrstein, 2019b) and is what we should expect, given that John David Smith was male. Indeed, E.C. was male in all but one of her recalled (or imagined) previous lives.

Other influences from Smith’s life may be seen in E.C.’s early fascination with helicopters, especially her going out on her apartment balcony to look for them when she heard them in her vicinity. She hoped they would fly her way and was disappointed when they did not, a reaction she understood only when she learned that heavy rain had delayed medevac helicopters from reaching the Marines after Smith had been fatally wounded. For no evident reason, she became fascinated with the Vietnam War shortly after her NDE and decorated her dorm room with pictures of helicopters and fighter planes. She began to dress in full camouflage attire. She sought to enlist in the French military and later found employment in the aerospace and defense industry. She was in the habit of whistling the Marine Corps hymn long before she realized

Table 4. Principal Cues to E.C.’s Past-Life Memories, Visions, and Intuitive Impressions

Date	Modality	Cue	Reference
John David Smith			
Early 1970s	Auditory	Name “David.”	John David Smith went by his middle name.
Early 1970s	Auditory	Sound of helicopter may have been start of memory incubation process.	Medevac helicopter was delayed in reaching Smith after he was wounded.
Apr. 1, 1990	Experiential	Riding in Ford Mustang convertible with top down, listening to radio.	Unverified in relation to Smith, but the rushing air could have been reminiscent of helicopter rides.
early May 1990	Auditory	Proposal to visit Colorado.	Smith was fatally injured during Operation Colorado.
June 9, 1990	Experiential	Visiting McConnell Air Force Base.	Smith would have been familiar with the culture of American military installations from serving in the Army and Marine Corps.
2009–2017	Visual	Photographs of airplanes and helicopters on office walls.	Aircraft would have had a prominent role in Smith’s Marine Corps experience.
Feb. 2021	Experiential	Injury to arm after being dragged by horse.	Smith injured his arm in a clothes wringer when he was a child.
Feb. 2022	Experiential, auditory	While driving across Loire to Orléans and listening to oldies radio broadcast, has sense that she is driving across the Ben Franklin Bridge to Philadelphia.	Unverified for Smith, but Ben Franklin Bridge connects Camden, NJ, to Philadelphia and is a route Smith might have driven.
July 2, 2022	Visual, auditory	YouTube video about Operation Harvest Moon prompts reactions to “ambush,” “sniper,” and “machine gun.”	Operation Harvest Moon was conducted in the same area as Operation Colorado, during which Smith was fatally wounded.
July 23, 2022	Auditory	Mention of Da Nang in an episode of <i>NCIS</i> prompts cry of “I want to go home!”	The air base at Da Nang was used by the U.S. military to fly personnel in and out of Vietnam during the war.
Aug. 23, 2022	Unclear	Viewing episode of <i>Hawaii 5-0</i> prompts line from Marine Corps Rifle Creed.	As a Marine, Smith would have been familiar with the Rifle Creed.
Cossack Guard			
From early 1970s	Experiential	Horseback riding.	Riding was a central feature of the life of the Cossack guard.
1984	Visual	American quarter horse show in Paris.	Americans ride Western style, holding the reins in one hand, similar to the Cossack style of riding.
Dec. 1986	Experiential	Falling off sulky after horse was spooked.	The Cossack guard fell off his horse when shot from behind.
1990–2015	Experiential	Horse breeding.	The Cossack guard’s family were horse breeders.
2022	Experiential	Holding glass of vodka distilled in St. Petersburg.	triggered a memory. I was in a long dark room, standing with other people in uniform, around a long table and we were singing while holding glasses.

what it was. While in Wichita in 1990, she suffered a panic attack when invited to visit the state of Colorado, unbeknownst to her the name of the operation in which Smith was fatally wounded.

Twice while listening to American popular music in cars, E.C. experienced brief dissociations in which she felt she was Smith. She particularly enjoyed oldies from the late 1950s and early 1960s, a period appropriate for Smith. She took to eating peanut butter sandwiches on white bread, a quintessentially American meal. Her spontaneous use of English when recalling scenes from Smith’s life and adoption of English-language profanities is noteworthy as well—these might be included under the heading of xenoglossy, or unlearned language, which sometimes appears in reincarnation cases (Matlock, 2017b; 2019, pp. 142–143), E.C.’s fluency in English notwithstanding.

At the same time, other behaviors reflect influences from the Cossack guard. Horses were among E.C.’s favor-

ite childhood toys and as soon as she was able to do so, she rode the arm of her family sofa as if it were a horse. She later took up riding and collected horse-related artifacts, then made a career of horse breeding, even though there was no model for these activities in her family. She preferred trail riding to show jumping and dressage, and her riding style tended toward the Western rather than the English, which was in line with the Cossack one-handed style. After her NDE, she permanently adopted the Western style. E.C. continues to search online auctions and antique sites for what she recalls was “her” shashka (which had a distinctively carved hilt), but when she pulls the one she purchased from its scabbard, she has the sense that she is the Cossack guard. She has an intuitive understanding of how to swing the saber, a procedural memory enactment of a skillful behavior sometimes seen in reincarnation cases (Matlock, 2017a; 2019, p. 140).

After her NDE, E.C. began to experience chronic pain in her left side and in her back. This worsened after 2018,

but doctors were unable to determine a cause for it. Phantom pains are known to be associated with amputations of limbs in the present life; when similar pains appear in reincarnation cases, they typically are related to injuries to the past-life body (Matlock, 2019, p. 157). So it is with E.C.—John David Smith we know was shot from the left, and E.C. believes that the Cossack guard was shot in the back. With acknowledgment of the past-life experiential source, this fits well with the model advanced by Gentsch and Kuehn (2022), in which “negative bodily experiences of the past that are stored in memory and influence behavior, contribute to the development of somatic manifestations of mental health problems including somatic symptoms, traumatic re-experiences or dissociative symptoms.”

E.C. assesses her continuing identification with Smith and the Cossack guard to be equally strong, although there is considerably more emotion involved with Smith. When recalling the Cossack guard, she is not given to violent bouts of crying, as comes with remembering Smith. The crying fits are often accompanied by chest and back pains and insomnia. They were brought on in November and December 2022 by my requests to confirm dates and other details of her experiences, which necessitated re-viewing previously triggering materials. The chief issues expressed in these reactions are Smith’s desire to return home and his regret that he did not fulfill his promise to kill the enemy before it killed him. E.C. thinks that, before he deployed, he also promised his sister Joyce that he would return home safely. She has the sense that Smith was emotionally immature in comparison with the Cossack guard and the other personalities she has recalled.

On the night of December 4, 2022, E.C. dreamed that she (as E.C.) was flying to the United States, where she was met at the airport by one of Smith’s sisters and other members of his family. She hugged the sister, saying, “I’m back!” and awoke, in tears.

Memory Cues

Cues are critical in evoking involuntary past-life memories. They are not always noticeable with young children, but become more apparent as subjects age (Matlock, 1989, 2019). E.C.’s case is unusual for the series of cues from early childhood and the relatively long period before the memories began to surface in her conscious awareness. In most cases, past-life memories surface soon after a triggering stimulus. Occasionally there is an incubation period, but in no other reported case is it so long. The next longest occurred with Rylann O’Bannon, who began to behave as if she had subliminal memories at around 12 months. She first put words to them at 41

months but did not recall them clearly until she was ten years old (Matlock, 2019, pp. 22–23, 28–29).¹⁵

The various cues to E.C.’s past-life memory of John David Smith and visions of the Cossack guard are listed in Table 4. Apart from her recurring dream of walking through the dark forest, E.C. had no episodic memories of Smith until the music meditation when she was 53. Her visions of the Cossack guard began during a music meditation when she was the same age. With both lives, there were significant cues beginning when E.C. was much younger. The name “David” and the sound of helicopters impacted her in childhood. Being around horses in her teens might well have reminded her subliminally of the Cossack guard, and falling off the sulky prompted a response (worrying about her horse) very similar to that of the guard at his presumed death. Another cluster of cues (to recall Smith’s life) is associated with E.C.’s internship in Wichita in 1990. Following her internship, she began celebrating the July 4 Independence Day annually by drinking a Budweiser beer, signaling an increasingly strong unconscious identification with Smith.

After identifying Smith in October 2021, E.C. experienced a more immediate response to cues. In February 2022, while driving over the Loire to Orléans, listening to an oldies radio broadcast from New Jersey on her smartphone, for a few seconds, she had the sense that she was driving across the Ben Franklin Bridge from Camden to Philadelphia. On July 2, she wrote to Benjamin Bagley about a strong reaction she had to a YouTube video documentary about Operation Harvest Moon, which had been fought in December 1965 in the same part of the Que Son Valley as Operation Colorado. Mention of Ky Phu and the words “ambush,” “sniper,” and machine gun” made her burst into tears, and she heard herself exclaiming aloud in English, “Why? Don’t make me walk on the left side of the road! Help me, Help me!” On July 23, the mention of Da Nang in an episode of *NCIS* (Season 12, Episode 7) prompted her to cry, “I want to go home!” A month later, on August 23, something in an episode of *Hawaii 5-0* brought her to quote a line from the Marine Corps Rifle Creed, “I must shoot him before he shoots me, I will,” followed by, “I broke my promise. I’m sorry.”

E.C. evinced interest in horses and horseback riding spontaneously from early childhood, but as she grew older, she encountered circumstances that might have reminded her subliminally of the Cossack life. After her family purchased the weekend house on the Loire, she spent her spare time near the river, playing, fishing, and later riding her horse. Although she has the sense that the guard’s family did not live on the Volga, they would have been near enough to it for him to have been acquainted with the river. The guard spent his adult life in St. Peters-

burg near another river, the Neva. E.C. was already riding in 1984 when she attended an American quarter horse show in Paris and observed the Western manner of holding reins. This was different from the English style she had been taught, but in its one-handed technique, reminiscent of the Cossack style. Her decision to breed horses following her sulky accident and NDE could have been influenced by subliminal awareness that the guard's family were horse breeders, but her career choice would, in turn, have acted as an ongoing reminder of that life.

E.C. found that viewing pictures of places or hearing music or words could trigger visions or emotions. The many videos of St. Petersburg and the Catherine Palace she watched after her visions of the Cossack life began never failed to induce reactions, but there were other cues too. Holding a glass of vodka distilled in St. Petersburg triggered the apparent memory of being in a long, dark room, standing with other people in uniform around a long table, holding glasses of vodka and boisterously singing, "Let the Thunder of Victory Rumble!" the informal national anthem of Catherine's day. E.C. located a recording of the Russian "Гром победы, раздавайся!" on YouTube. After listening to the song once, she found that she could intone it without reference to the score or lyrics.

Another surprise came in connection to the last of the foals born before she was forced to give up breeding in 2016. It was a filly E.C. named Princess. Although Princess was a purebred Western Pleasure quarter horse with World and European champions as grandsires, she moved like a trotter, characteristic of a Cossack don. By the Spring of 2022, E.C. was in the habit of playing and singing Cossack songs while cleaning stalls in the morning. Most of the horses went to the paddock in front of the stables to eat grass or hay, but Princess, and Princess alone, stood at the fence intently observing, ears forward. On March 6, E.C. told her best friend about a new development. She had begun studying Russian, and that morning, when she had gone to clean the stables, she had greeted Princess unthinkingly with the phrase, "Привет моя душенька!" "Hello my darling!" It was then that it occurred to her that Princess was the reincarnation of the Cossack guard's dark bay and mare.

Princess always regards E.C. attentively when E.C. speaks to her in Russian. When she looks at Princess, E.C. feels as if she is perceiving herself as if in the Cossack life; it is the same when Princess looks at her. There is something about Princess's eyes that seems to give her away. She has a presence, a kind of magnetism, that E.C. does not sense with her other horses. Princess is also the only horse who stays near, unafraid, when E.C. practices flankirovka with her shashka. E.C. has the definite

feeling that they were together first in her Viking trader life, when Princess was the trader's horse. E.C. says she does not know why the horse would be with her again, but speculates that it has to do with the Cossack guard's worrying about him as he lay dying. E.C. is certain that her love of horses derives from her past lives because no one in her present family has any concern for them.

Memory Verifications

With children's reincarnation cases, it is customary to list past-life memory claims and indicate whether statements are correct, incorrect, or unverifiable in reference to an identified previous person. In many adult cases, items to be verified must be abstracted from written texts or other materials because adults tend not to talk about their memories as children commonly do. E.C.'s case is no different from other adult cases in this respect. The statements in Table 5 are drawn from E.C.'s apparent memories and intuitive impressions about John David Smith.

The Cossack guard and other lives are omitted from Table 5 because, with unsolved cases, it is impossible to determine which memory claims are correct and which are incorrect in reference to a particular deceased person. The contours of all the lives E.C. seemed to recall are plausible, and certain aspects of them are confirmed, but the confirmed features are of a general nature and do not prove the existence of the previous persons. It is known that there were Don Cossack horse breeders on the upper Volga in the 18th century; Don Cossacks were included in the Russian Imperial Guard under Catherine the Great and Alexander I; and Don Cossacks fought and died defending Russia from Napoleon's army in 1812. If records from that period have survived, it may be possible to establish that Igor Ivanovitch existed, but this is by no means a certainty. The other lives have fewer clues to follow up, and it is difficult to see how any can be properly assessed.

E.C.'s memories of John David Smith surfaced under a variety of conditions—during guided meditation and past-life regression, in meditation to music, in hypnagogic states and in dreams, in waking flashbacks, and as intuitive impressions. Many, although not all, of these memories were recorded in writing by E.C. shortly after she recalled them. They are listed in Table 5, along with the dates and conditions under which they were recalled and their verification status. Web page URLs or other sources of verification that are footnoted in the text are not repeated in Table 5. The dates show that E.C. remembered many things about Smith before verifying them in online sources. Some items were verified the same day as they were recalled, but, as discussed above, at a later

Table 5. Verification Status of E.C.’s Memories of John David Smith

		Memory Claim		Verification		
Date	Condition	Memory	Date	Status	Comment	
Early 1970s	Intuition	Affinity for name David.	Oct. 25, 2021	Correct	Smith was known by his middle name, per his sister Joyce Hammel.	
Early 1970s	Recurring dream	Walk through dark forest taking care not to be seen or heard.		Unverified		
Middle to late 1980s	Recurring dream	Seeing a military transport plane crash in watery terrain.		Unverified	Possibly Fairchild UC-123B Provider crash on June 18, 1966.	
Oct. 23, 2021	Pendulum	Her name had been John David Smith.	Oct. 23, 2021	Correct	Name verified on Wall of Faces profile.	
Oct. 23, 2021	Music meditation	View of landing strip from above with names Chu Lai and Dan Nang.	Nov. 27, 2021	Correct	Scene matches Chu Lai, Vietnam, where there was a Marine base 1965-70.	
Oct. 23, 2021	Regression	Lying in cot, writing letters home.	Oct. 25, 2021	Presumed correct	Joyce Hammel noted that Smith wrote many letters home.	
Oct. 23, 2021	Regression	Shot walking through paddy field ...	Feb.16, 2022	Correct	Smith’s company was walking through a rice paddy at the time Smith was shot.	
Oct. 23, 2021	Regression	... to left of road.	Feb.16, 2022	Correct	The rice paddy was to left of a road.	
Oct. 23, 2021	Regression	Shot in left side.	Feb.16, 2022	Presumed correct	Sniper fire came from the left.	
Oct. 23, 2021	Regression	During heavy rain.	Oct. 23, 2021	Correct	Mentioned by W. Killian in Wall of Faces Reminiscence.	
Oct. 23, 2021	Regression	Someone named Larry was shot before him.	Oct. 23, 2021	Partially unverified, likely correct	Killian mentions that PFC Lawrence J. Kindred was among the fatalities, but it is not known if he was shot before Smith.	
Oct. 23, 2021	Regression	He was lying wounded in a tent, surrounded by medical personal.		Unverified, but likely correct	Smith would have been airlifted to base at Chu Lai before Clark AB.	
Oct. 23, 2021	Regression	A crew member from the medevac helicopter which rescued him lying dead on a stretcher.	Oct. 23, 2021	Unverified, but likely correct	Killian mentions that Robert T. Walsh, a gunner on the medivac helicopter that evacuated Smith was shot during medical evacuation.	
Oct. 23, 2021	Regression	He died in a well-lit modern facility.	Nov. 5, 2021	Correct	Smith died at Clark AB in the Philippines on Aug. 11, 1966.	
Fall-winter 2021	Waking flashback	As a child, he played a game hopping up steps of his house.		Unverified		
Fall-winter 2021	Waking flashback	It was a two-story clapboard house.		Unverified		
Fall-winter 2021	Guided meditation	His house was a gray three-story clapboard house.		Unverified		
Fall-winter 2021	Waking flashback	When he was 4-5, he had a birthday party at which he was sitting at a table with many sisters.		Partially verified	Joyce Hammel said Smith had 7 sisters.	
Fall-winter 2021	Waking flashback	Smiling woman behind him was holding a baby girl in her arms.		Unverified		
Fall-winter 2021	Waking flashback	Scolded because on a winter day he had lost his gloves and was hiding his hands behind his back rather than confess.		Unverified		
Fall-winter 2021	Waking flashback	His older brother Bill was upstairs and at first did not want to come down.		Unverified		
Fall-winter 2021	Waking flashback	Young boy holding bat at baseball game, family watching him play.		Unverified		
Fall-winter 2021	Waking flashback	Glimpses of being on a military ship at night, no lights, looking at the sea, the sky and other ships side by side everything is quiet.		Unverified		
From fall 2021	Intuition	Feeling that Smith visited Hawaii at some point.		Unverified		
Fall-winter 2021	Intuition	He had not done well in school.		Unverified		
Fall-winter 2021	Intuition	He had enjoyed playing pranks.		Unverified		
Fall-winter 2021	Intuition	He had been punished for locking another child in a room and swearing he had not done it.		Unverified		
Fall-winter 2021	Intuition	Was always looking for attention.		Unverified		
Fall-winter 2021	Intuition	Expression “my second mom”		Unverified		
Fall-winter 2021	Intuition	He was jealous of his older brother Bill.		Unverified		
Fall-winter 2021	Intuition	He was repeatedly told not to annoy his oldest brother, perhaps due to health issues.		Unverified		
Fall-winter 2021	Waking flashback	When he told his father he was joining the Marine Corps, his father did not put down his newspaper but said, “Have you told your mother.”		Unverified		
Fall-winter 2021	Waking flashback	Before deployment, a young nephew asked him, “Uncle Dave, are you going to kill people?”		Unverified		

time. For instance, E.C. recalled Smith’s name and details of how he had died some hours before confirming their

accuracy on October 23, 2021.

Of the 33 items listed, none have been shown to be



incorrect. Thirteen are correct, likely correct, presumed correct, or partially verified; 20 are entirely unverified. Several confirmed memories surfaced during past-life regression or guided meditation, contrary to what might be expected. However, veridical past-life memories sometimes appear with induction procedures, especially when involuntary memories of the same life emerge either before or after the regressions (Matlock, 2019, p. 220). Moreover, not all of E.C.'s induced visions have been shown to be valid; it may turn out that the guided meditation image of the three-story Smith family home, currently unverified, is incorrect.

It has not yet been possible to determine the basis of E.C.'s recurring dreams of walking through a dark forest and crash of a military transport plane in watery terrain, but in her research, E.C. discovered that a Fairchild UC-123B Provider was shot down by small arms fire while on a defoliation mission, crash landing in a rice paddy near Tam Kỳ, not far from Chu Lai, on June 18, 1966.¹⁶ E.C. thinks Smith may have observed the crash while on patrol in the area.

The other unverified items are mostly of a personal nature and can only be evaluated by Smith's surviving family members who, unfortunately, have chosen not to cooperate with this study. Early in May 2023, I wrote to three of Smith's sisters and three of his nieces whom E.C. had identified on Facebook. E.C. had had some written contact with some of these persons, but had not confessed to having memories of their brother or uncle. When writing to them, I attached a PDF document that included drafts of four sections of this paper: "E.C.'s Early Years (1968–1976)," "NDE and Aftermath (1986–1990)," "Renewed Trauma (2015–2021)," and "John David Smith (2021–2022)." None of Smith's sisters responded to my inquires, nor did two of his nieces. I received only a single response, from his niece Barbara Groves, on May 5:

Hello. I'll be honest, I really don't know to react to this and I am not sure how you found me. I'm not one to believe in this kind of thing although I am a paranormal author. I am torn between relaying this message to my family or just letting it go. I read the report and most of this info is readily available online. So, that makes me so inclined as to say the lady does not have good information or intentions for my family. Thanks.

Groves admits to a disbelief in past-life memory, which evidently prevents her from assessing E.C.'s claims dispassionately. Groves's response ignores the many behavioral features from E.C.'s early years that are consistent with Smith and the fact that E.C. can show that she

recalled items verified in online sources before verifying them. Groves does not say any of E.C.'s memories of Smith are wrong, only that because many items can be verified online, she supposes that E.C. "does not have good information or intentions for my family." The phrase "or intentions" implies Groves thinks that E.C. is hoping to gain from identifying herself with John David Smith, but why? The family is not well-known, nor, insofar as E.C. and I are aware, are any of its members wealthy. It is hard to understand what Groves imagines E.C.'s motive in identifying with Smith might be, when, if she were after fame or fortune, there are many other more suitable marks. Smith's family's reaction has been a great disappointment to E.C.

GENERAL DISCUSSION

Barbara Groves is not alone in suggesting fraud on E.C.'s part. The possibility was also raised by a reviewer of this paper in draft. The reviewer considered it "challenging to believe that [E.C.] didn't read the information about Smith's final mission on the Wall of Faces website when she accessed it before the regression." The reviewer is not the first skeptic to have turned to fraud to explain that which is inexplicable except on the unpalatable alternative of past-life memory (Matlock, 2022d). To be sure, we are reliant on E.C.'s testimony about issues for which she cannot supply dated and time-stamped documents, but to suggest wrongdoing on no basis other than a priori convictions shows the challenges faced by researchers of cases such as hers. The fact that Smith's Wall of Faces page does not provide information about major elements of E.C.'s regression of October 23, 2021, is immaterial to a skeptic determined to explain away any suggestion of past-life memory.¹⁷

"The most straightforward explanation for the correlation between the subject's behaviors and items in her purported memories is that her unconscious mind used pieces and themes in her life to create imagined 'past-life' narratives when she was in her various altered states," the reviewer wrote. Perhaps, but what then is the origin of these behaviors, which have no model in E.C.'s early life? What led her to ride the arm of her family sofa like a horse, when she was a toddler? Why was she so consumed with helicopters as a child that she went out on her apartment balcony whenever she heard one in the sky, hoping it would fly her way? Why did she begin wearing military camouflage clothing following her NDE at 18? All of these behaviors (and other similar ones) seem to have been driven by something internal, but by what, if not by habits carried over from previous lives?

Furthermore, there is the inconvenient matter that

many of E.C.'s apparent memories of Smith turned out to be valid, according to sources accessed well after she recorded them in writing. To take one example, several web pages—including Smith's Wall of Faces profile—state that he was killed in action, inconsistent with E.C.'s impression of his having been treated in two infirmaries, dying in the second, a well-lit, modern facility. In fact, Smith survived his wounds and died at Clark Air Base in the Philippines, to which he would have been airlifted from the Marine Corps base at Chu Lai, Vietnam. The environs of the Chu Lai base resembled the landing strip E.C. visualized during her music meditation, before she recalled the name John David Smith with the aid of her pendulum. It would be far-fetched to think that all these correspondences with Smith's final days were chance creations of E.C.'s subconscious mind, building upon a few elements she read about in Killian's Remembrance comments, supplemented by her earlier life experiences.

Smith is the only one of E.C.'s avowed past-life personalities to be identified with confidence. Uncertainties surround the others, including the Cossack guard. However, if we are to reach a satisfactory understanding of E.C.'s recall of Smith's life, we must take the other lives into account. This means considering E.C.'s case not strictly in a proof-oriented way, as has been traditional in reincarnation research, but attending to process concerns as well. We can do this if we remember that it is not the process of past-life remembering we are looking at, so much as the process of ostensible past-life recall, that is, the conditions under which people have what seem to them to be recollections of previous lives, whether or not these can be shown to be actual previous lives.¹⁸

The process approach I have adopted—an exploration of the nature of past-life visualization and the examination of the steps through which that visualization unfolds—furnishes a bridge between parapsychological interests and those of mainstream psychology (Matlock, 2022c). Like memories of our present lives, declarative past-life memories may be cued by things we see and do, but not all past-life memories are explicit. Many are implicit, expressed through behaviors, and may appear well before explicit memories enter conscious awareness.

There are differences in the ways children and adults recollect and talk about previous lives, but these differences are not absolute; rather, they lie along a developmental continuum (Matlock, 2019). It appears to be harder for past-life memories to surface in adults' conscious minds than children's, so whereas children's memories tend to come in the waking state, and only secondarily in dreams, adults' memories are more likely to arise in dreams and other altered states of consciousness (Wehrstein, 2017). With adults, there may also be a longer incubation period

between cues and the appearance of visions in conscious awareness, and these visions are less likely to be verified and shown to be true memories. Adults are more likely to recall multiple past lives, although few of these lives include sufficient detail to justify investigation and permit verification.

IMPLICATIONS AND APPLICATIONS

To date, most reincarnation research has concerned children, whose cases tend to be evidentially stronger than those of adults, but fully understanding past-life memory requires attending to adults and less evidential phenomena as well. The combined process- and proof-oriented approach taken in this paper demonstrates one way this may be achieved.

ACKNOWLEDGMENTS

My greatest debt is to E.C. for sharing her experiences with me in detail and for answering all my questions fully and without hesitation. I am also grateful to Benjamin Bagley for the discussion about E.C. and her memory claims and to E.C.'s friend who resided on Tahiti, in French Polynesia, for relating what he recalled about his conversations about this with her. I would also like to thank Barbara Groves for replying to my query and for granting permission to publish her response in this paper, along with her name. I received no financial support for this study. I have no conflicts of interest to declare.

ENDNOTES

- 1 Although profound, these changes were not abrupt. After seeing the Western riding style at a quarter horse show in Paris in 1984, E.C. had sometimes ridden with one hand, but after her NDE, this became a permanent change. Her dress preferences also began to manifest before the NDE. A picture of E.C. on her horse in 1985, when she was 17, shows her wearing a camo-patterned scarf, khaki pants rather than riding breeches, and hiking boots rather than riding boots. The shift in clothing style, too, became much more pronounced following the NDE, however.
- 2 See <https://www.vvmf.org/Wall-of-Faces/48359/JOHN-D-SMITH-2/>.
- 3 This account of E.C.'s regression is based on notes she made immediately upon completing the regression before she returned to the internet for further research. Scans of these notes, together with a verbatim translation into English, are presented in the Appendix. Unfortunately, they are undated.
- 4 "Final Mission of Sgt John D. Smith." Posted on 1.12.2018 by W. Killian. <https://www.vvmf.org/Wall-of->

- Faces/48359/JOHN-D-SMITH-2/.
- 5 Following her regression, E.C. searched online and read accounts of Operation Colorado, but none supplied details not included on the Wall of Face's page until November 5, 2021, when she discovered and downloaded an article describing Small Unit Action in Vietnam, Summer 1966, <https://www.usmcu.edu/Portals/218/Small%20Unit%20Action%20In%20Vietnam%20Summer%201966.pdf>. In addition to checking this web page, I obtained West (1967).
 - 6 See <https://www.facebook.com/NJVVMF/photos/a.212053265516270/4263895640331992/?type=3> for Joyce Hammel's account.
 - 7 Smith joined the Marine Corps in 1960, having previously served in the U.S. Army, according to Joyce Hammel in the source cited in Note 5.
 - 8 At the top of Smith's Together We Served profile, he is listed as "KIA-Died of Wounds," but further down the page, it states, "WIA [wounded in action] sniper 10 Aug [1966], DOW [died of wounds] 11 Aug Clark AB Philippines." See: <https://marines.togetherweserved.com/usmc/servlet/tws.webapp.WebApp?cmd=ROHSBV&type=Person&ID=2751>, no. 77. E.C. downloaded this page on November 5, 2021. For images of Clark Air Base during the Vietnam War, see: https://youtu.be/C0mHWfCj_VU.
 - 9 On November 27, 2021, E.C. viewed a video at <https://youtu.be/rpCKWFE27vY>, which shows buildings in a sandy environment (3.44) and buildings with metal roofs (8.00).
 - 10 The photograph appears at <https://maps.app.goo.gl/DzuSmnsDwtip4HMP7>. Tsaritsyn was founded in 1589 and, in 1670, was seized by Don Cossacks under Stenka Razin (<https://www.britannica.com/biography/Stenka-Razin>). Although tsarist leaders succeeded in suppressing the revolt, it is entirely conceivable that there were still Don Cossack families living in the area a century later, although any such families would have to have accepted Russian imperial rule.
 - 11 See https://factsanddetails.com/russia/Places/sub9_9d/entry-7058.html.
 - 12 E.C. wrote about this regression in Bowman's forum on March 7 and, that same day, searched for a video of Hitler's arrival in Vienna. The scene in <https://www.youtube.com/watch?v=hRSwWuVtHF4> was very much as she had imagined.
 - 13 I spoke to this friend, whose recollections of the interchange with E.C. match hers.
 - 14 See <https://fb.watch/h-BqTS3y-P/>.
 - 15 Other cases with notable incubation periods are Scott Perry (Matlock, 2022a) and James Leininger (Matlock, 2022b), but with neither did more than about 15 months

elapse from the triggering event to the verbalization of related episodic memories.

- 16 See <https://aviation-safety.net/database/record.php?id=19660618-1>.
- 17 The reviewer apparently is referring to Killian's Remembrance on Smith's Wall of Faces page, which E.C. states that she read after her regression, but even if she is misremembering or misrepresenting when she read Killian's comment in relation to writing her regression notes (see Appendix), these would not have supplied all the images and information conveyed in her regression (compare Appendix to text and Table 5). Date stamps on E.C.'s internet downloads show that she verified elements of her meditation and regression over a period of months. No one source contained the information needed to verify all elements of her meditation and regression of October 23, 2021.
- 18 To forestall misunderstanding, I would like to clarify that by a "proof" orientation, I do not mean an effort to "prove" reincarnation. I consider such an effort misguided because science is never about proof but rather about the accumulation of evidence and the testing of theory. Rather, I mean the emphasis on verifying past-life memories, in contrast to understanding how the memories function in the mind and life of the rememberer and other aspects of a case's development.

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APPENDIX

E.C. made these notes immediately after her regression of October 23, 2021, before returning to Smith's Wall of Faces page and reading W. Killian's Remembrance (<https://www.vvmf.org/Wall-of-Faces/48359/JOHN-D-SMITH-2/>). She recorded them quickly, for herself, never contemplating that they would one day be made public.

The following is a verbatim translation of E.C.'s notes. Paragraph breaks are added for ease of reading. Comments are added in brackets. Compare these notes to the account of the regression given in the text. For verifications of various elements, see text and Table 5.

The voice asks me to go to an important moment of this life. I guess I am in a building, no, in a tent, a military tent, one side is open. I am lying on a cot in military clothes. A radio on my right is playing music (from the 60ties ?) but I can't hear well because there is noise.

I am writing a letter, there are people in military clothes (3 or 4), they are playing cards and joking. They are laughing at me because I am writing to my family, not to my wife or girlfriend. They want me to join them but I am busy looking for the good words not to worry my family. I can hear [in English]: "Oh come on, Sarge!" There are other people on the left wearing khaki clothes who are busy. I understand the noise comes from helicopters!

The voice asks to move forward to another important moment. I see everything in gray and dazzling white. I am on a flat road. It's hot and I can feel the weight of the pack on my shoulders. I am not alone and we are walking in a straight line keeping our distance. I have a bad feeling. I don't want to go to the left. It makes me feel uncomfortable to go to the left. But we are told to go to the left so I go there. We are in a kind of rice paddy. I can feel warm and heavy rain. I can hardly

walk. Suddenly gunshots. I look back but run forward to a mound of earth.

I can feel panic, everything goes fast, I realize some have been hit. I can feel the mud, the rain, the lack of ammunition. Someone close to me is hit, Harry? [Note added before viewing Killian's Remembrance account: Larry? Note added after reading Killian's Remembrance account: Laurence [sic] Kindred?] I straighten up a little bit and feel a burn on my left side and I collapse in the water. I can hear a voice [in English]: "Sergeant's hit! Sergeant's hit!"

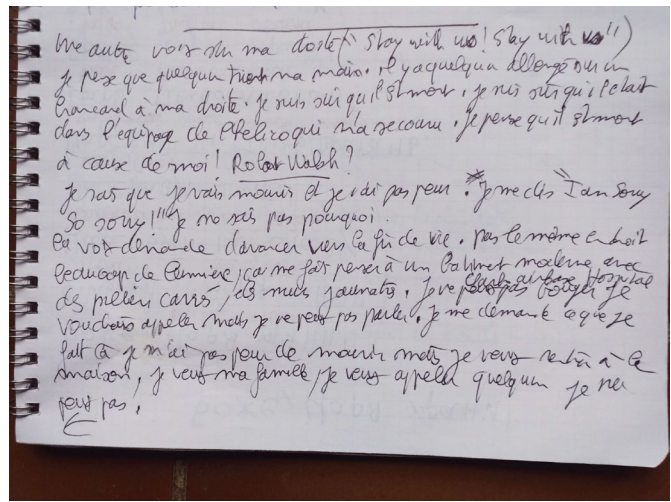
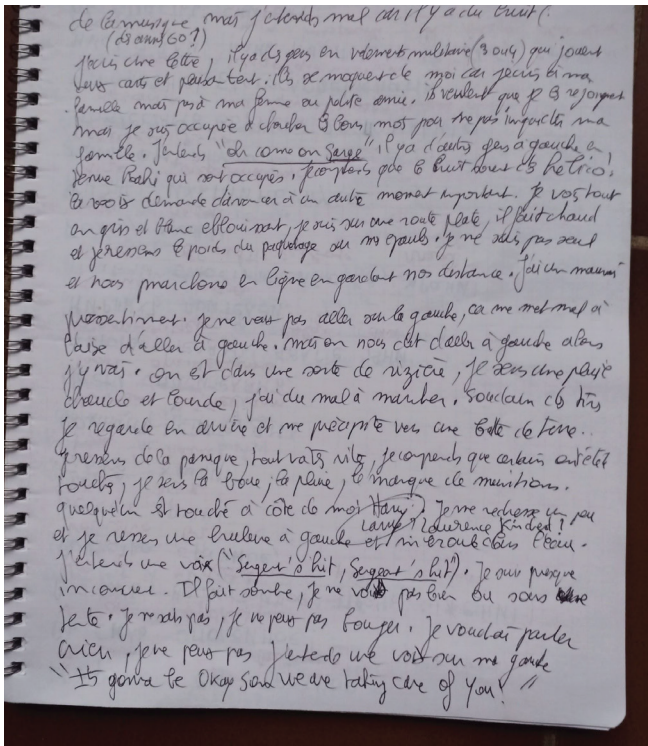
I am almost unconscious. It is dark, I can't see well or in a tent. I don't know. I can't move. I would like to speak, shout, but I can't. I can hear a voice on my left [in English]: "It's gonna be Okay son, we are taking care of you!" Another voice on my right [in English]: "Stay with us! Stay with us!" I guess someone is holding my hand. There's someone lying on a stretcher on my right. I am sure he is dead. I am sure he was one of the crew members of the medevac helicopter who rescued me. I think he died because of me. [Note added later: Robert Walsh?]

I know I am going to die and I am not afraid. I say to myself [in English]: "I am sorry, so sorry!" I don't know why.

The voice asks to move forward to the end of the life. Not the same place. A lot of light. It reminds me of a modern building [note added later: Clark Airbase [sic] Hospital] with square pillars, walls with a yellowish color. I can't move, I would like to call but I can't speak. I wonder what I am doing here. I am not afraid of dying but I want to go home, I want my family, I want to call someone, I can't.

Maybe I am already dead! As if I saw from above, I see the doctors busy on someone else, they don't see me!

I am shaking and I have cried!





RESEARCH
ARTICLE

Trained Transliminals: Exploring Anomalous Experiences and Psi in Magical Practitioners

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SUBMITTED March 11, 2024

ACCEPTED May 25, 2024

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243351>

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HIGHLIGHTS

A group of devoted magic practitioners showed ‘thin’ mental boundaries and measurable ESP ability, though the scoring patterns might suggest that they resist modern research methods.

ABSTRACT

This study examines a body of engaged “ritual magic practitioners” to understand their methods and techniques for facilitating putative parapsychological outcomes in everyday life, as well as outcomes on a computerized test of putative psi. We hypothesized that the combination of meditation, visualization, and related mental exercises at the core of magical practice relates to both invoked anomalous phenomena and spontaneously-occurring anomalous phenomena, and further that the perceptual-personality variable of transliminality (i.e., loose mental boundary functioning) is integral to this process. Likewise, we also anticipated that these associations would enable ritual magicians to score significantly above-chance on the psi test. A split-sample analysis found a positive and statistically significant series of relationships between transliminality and the majority of measured variables within the sample, and notably those involving questionnaire measures of subjective and objective anomalies as well as daily mental exercises. The ritual magicians also performed significantly below-chance ($p < .01$ for several conditions) on the psi test, as a function of open testing of ESP or using ritual to influence the test. We discuss these results in terms of significant predictions of trait and practice variables on ESP scoring, as well as the evidence that magical practice may represent techniques in which a transliminal dis-ease model might be better remediated.

KEYWORDS

Altered states, empiricism, liminality, mental imagery, psi, ritual magic.

INTRODUCTION

One might think that among millions of people who are enthusiastically engaged with the paranormal, or the smaller body of scientists studying this domain, a good number would also possess a general understanding of practices related to ceremonial or ritual magic (also known as theurgy or high magic), i.e., the use of rituals,

implements, incantations, in conjunction with mental visualization skills to produce a controlled anomalous effect. One might further assume this is the case given the decades-long interest in mediums and spiritualists that continues to this day (e.g., Beischel & Schwartz, 2007; Beischel et al., 2015; Wahbeh et al., 2023). However, and with our appreciation, it appears that the consciousness researcher Dean Radin (2018) offered a popular parapsy-



chology-oriented book addressing this sub-culture, but we note previous infrequent work which has examined occult practitioners. (e.g., Mayer, 2009; Staniford, 1982; Winkelman et al., 1982; Winkelman, 1992). The general historical oversight of this historic-cultural group is unfortunate, as we think that magicians are a potential source of “exceptional subjects” for psi research and can thus provide critical insights for advancing our knowledge of the key variables mediators or moderators of ostensible living-agent psi (Rock et al., 2023), discarnate agency (i.e. Merlin, 2023), and haunt-type episodes (e.g., Laythe et al., 2022).

The terms “magician”, “magus”, “mage”, “wiccan”, “pagan”, and “satanist” (note these terms are not necessarily synonymous), put bluntly, are awash with religio-cultural connotations and biases. We might safely posit that the reason most paranormal enthusiasts and anomalists are not familiar with this population is due to several historical and socio-cultural influences. First, magic has been an esoteric (i.e., hidden) practice in contrast to its much larger cousin religion, an exoteric (i.e., outward) spiritual practice which has the benefit of cultural endorsement and large numbers of followers to engender its norms on society (Durkheim, i.e., Hilbert, 2009; Marks, 1974). Notably, we do not condemn the latter but note it to highlight that historically, the practice of magic has been taboo for various reasons, with potentially severe consequences in society for those who were either caught or admitted to the practice (Godsen, 2020; Skinner, 2014). As such, its nature, practices, and goals have remained hidden knowledge, often guarded by gatekeepers of various traditions and grimoires (e.g., Peterson, 2016; *The Sworn Book of Honourous*, see pg. 51 as an example of a grimoire oath).

Despite magic’s obscurity in academic and paranormal circles, our goal is to provide the reader with a “working model” for understanding the practices and outcomes of magic from a parapsychological perspective and provide the first (to our knowledge) exploratory data of these practitioners by examining (a) individual differences that mediate anomalous experiences (e.g., transliminality or paranormal belief), (b) the types and kinds of anomalous events that are fostered or generally manifest within magic contexts, (c) how these magicians’ mental practices relate to the previous points, and (d) their performance on tests of putative psi.

We would emphasize here that this work is not a detailed historical examination of magical practice, and certainly not a comprehensive examination of the *differences between* the legion of deities, symbols, specific prayers, or specific invocations of myriad forms of magical practice around the world, or the general terminology of magic historically or academically (e.g., Bailey, 2006).

Nor is the current work examining the intricate historical lineage of which person or group progressed magic in a certain way (i.e., Hanegraaff, 2009; Kieckhefer, 2006).

Indeed, our research goals are the opposite. The current work wishes to demonstrate a *commonality of a ‘practiced framework’* with magic, a psychologically and procedurally modellable framework, noting that a brief perusal of magical practice will demonstrate to the reader, regardless of entity, pantheon, or belief, that vast majority of magical practice involves common ‘cook-book methods’ with common preliminary practices and invocation or spell practices which infer clear psychological processes, regardless of which specific religion, culture, or historical period one is examining. Thus, readers familiar with the history of magic will find mostly primary sources (i.e. grimoires) noted here, and the mention of authors who clearly contributed to the popularist beliefs and methods of magic since Victorian times in the West. As most readers are likely to be unfamiliar with these practices, we attempt to briefly demonstrate a ‘generalist model’ with a brief sociocultural exploration of magical practice, followed by comparisons of magicians, mediums, and psychics in relation to their generation of altered states of consciousness (ASCs).

Modeling of the Magician

The above cultural and historical conditions make defining commonalities among magical practitioners exceedingly difficult and by no means definitive or comprehensive. From a social science perspective, one could model Magical communities in a *social identity context*, i.e., a myriad of small groups with some commonalities, albeit powerful in-group and out-group social distinctions sometimes keep them at odds (Tajfel & Turner, 1979; Gomez et al., 2008; Gomez et al., 2011; Gomez et al., 2013). But also feasible is a more traditional *Marxist sociological perspective* (Marx, 1972), in which multiple and small “low-power” cohesive groups compete for limited cultural resources. Whereas all such practitioner groups, in fact, practice ritual magic (i.e., a structured or procedural method for spiritual contact or synchronistic practical outcomes), the adoption of a wide array of deity pantheons (e.g., the Roman or Egyptian gods), spirits (e.g., Judeo-Christian cosmologies versus Greek, Roman, or Norse cosmologies), and exoteric religious influences (e.g., Buddhist versus Judeo Christian) create plenty of opportunities for a lack of cohesion across the magical community at large. Marking boundaries between these groups becomes more difficult due to the fact that groups or individual magicians may adopt multiple pantheons at the same time (i.e., angelic and Norse deities), sometimes

blending the mythologies of these pantheons. Pantheon exclusivity is not an enforced moray in magic, and as such, multiple religious cultures can and do blend due to cultural pressures and multiple culture transitions over time (e.g., Santeria and Voudon are a mixture of Catholicism and the Nigerian Yoruba religions; see Gonzalez-Whipler, 1989).

Second, here we might find the classical divisions between magic and religion provided by Durkheim (e.g., Pickering, 2009) useful, if not definitive. Durkheim differentiated magical practice and religion by dividing those who “ask” divine forces to intervene (i.e., prayer and religion) from those who “demand” spiritual forces to intervene (i.e., magic). Noting this distinction, both practices invoke spiritual forces or generic energies of a specific type or flavor. To create some type of intervention, however, the religious individual requests spiritual forces to help, while the magician invokes and commands spiritual forces to intervene. Obviously, social scientists can interpret this as an internal or external locus of control framed in spiritistic terms (Levenson, 1973; Levenson & Mahler, 1975; Levenson & Miller, 1976). This parallel also includes broad comparisons to intrinsic or extrinsic religiosity measures (Meadow & Kahoe, 1984; Morris & Hood, 1981). Of course, the aspect of self-examining religion might further align to religiosity as measured by “quest” orientations, i.e., religion or spiritual belief guided by seeking and updating one’s beliefs as new spiritual information is provided (see, e.g., Altemeyer & Hunsburger, 1992). However, given a severe paucity of research samples consisting of vetted magic practitioners, all the above models are, arguably, preliminary hypotheses in terms of “best fit”.

However, in separating religion from magic, we would be remiss not to include Stephen Skinner’s (2014) model that posits a continuum of magic versus mystery schools versus religion in terms of the specificity of the number of people and the degree to which these spiritual actions serve a broad community or a specific individual. Highlighting the above, he notes that separating religion from magic can be highlighted by five factors. These include audience (i.e., the broad audience religion serves versus the one magician), secrecy (i.e., the extent practices are publicly shared), degree of specificity in objectives (i.e., public and communal blessings in religion versus the specific act asked by a magician), range of entities employed (i.e., the endorsement of particular entities, as opposed to broad acceptance and use of all known entities), and privacy (i.e., public and communal ritual versus private and exclusive magical acts). Skinner’s (2014) model, in many ways, provides a much greater definition and specificity by highlighting the distinction between the ‘public’ versus ‘private’ nature of these spiritual practices. In-

deed, one might summarize magical practice as a private, personal, and goal-targeted spiritual practice.

Finally, magic has varying beliefs of magic being “external” or “internal”. In this sense, and with an obvious popularist influence of empiricism in the Victorian era (e.g., Blavatsky, 2016; Regardie, 1995), magicians often debate the degree to which magic is “psychological” or “spiritual.” Notably, some communities embrace both views while others altogether ignore the apparent division. Victorian occultism (i.e., above) made separations between *high magic* (i.e., practices designed to make fundamental changes within the psyche) versus *low magic* (i.e., practices applied in a traditional sense to create beneficial external outcomes) (Mathers, 1971). Yet magic contains myriad techniques for altering the psyche, both in ASCs and specific rituals for changing emotional or thinking aspects of the self, and historically appears as a likely candidate for both the modern practice of hypnosis and guided imagery within clinical psychology contexts (e.g., Gruzelier, 2002; Sell, Moller & Taubner, 2018; Smoot-Tramont, 2023; Zech et al., 2017). Indeed, noting the contribution of Jewish mysticism as well as Greek and Egyptian ‘mythology’ by Carl Jung (e.g., Jung et al., 2009; Jung, 1968) in psychology is relevant here. Jung’s application of archetypes because of his studies in magic and mysticism represents a variety of ‘internal’ personalities which an individual may interact with. The only difference between Jung’s therapeutic model and magical perspectives is that the Magician might debate that these ‘internal’ personalities may not actually be ‘internal’, but to some degree ‘external’ and discarnate.

Methods and Commonalities of Magical Practice

While pantheons, religions, and beliefs vary widely and even co-mingle amongst magicians, practical commonalities (i.e., procedural or systematic methods) across diverse magical practices do occur. This is particularly true with regard to the specific tactics or methods employed, as opposed to the diverse cosmologies or spirits being invoked. Magical practice involves a ‘recipe/trade/craft’ approach in which initial seemingly unrelated practices and disciplines need to be developed before the practice of ‘magic’ can occur. Translated directly, magic is easily mirrored and influenced by yoga and related meditative practices of the East (e.g., Blavatsky, 2016; Regardie, 2016a). Certainly, from the Victorian era forward, practicing magicians have regularly engaged in meditation, which fosters visual imagery skills (Regardie, 2016; White, 2018), inducing ASCs (taking on God forms, Regardie, 1989; 2016b), traditional forms of meditation (e.g., Fortune & Knight, 1997), and the fostering of men-

tal focus (Mathers, 1971). We emphasize that while the above references are not exhaustive, they do represent a highly common theme across all magical literature with regards to the learned ability to focus the will and intent of the magician toward spiritual communication or the production of practical outcomes.

Historical evidence from Grimoires (i.e., books of magic spells and techniques) supports these aforementioned practices well before the Victorian era. If examined from modern social science in terms of central and peripheral persuasion (Petty & Cappico, 1984), self-induced flurries of psychosomatic effects (Lorber, Mazzoni, & Kirsch, 2007), or dissociative states or other ASCs deliberately cultivated via mirror-gazing and related protocols (Caputo, 2010, 2013, 2021; Derome et al., 2022), it seems the “recipe” of magic easily represents what might be characterized as “self-created and systematic experimental induction techniques” for creating purported anomalous or parapsychological effects through ASC’s.

Recent examples of parapsychological research will use “manipulations” or “treatments” such as the creation of a room conducive to studying seance effects, with the addition of meditative and ritual exercises (Laythe, Laythe, & Woodward, 2017) or meditation as a condition of either psi (Alvarado, 1988; Nash, 1982; Palmer, Khamashita, & Israelson, 1979; Rao & Rao, 1982; Stenkamp, 2005) or healing practices (Anderson et al., 2015; Midilli & Eser, 2015; Rao et al., 2016). Historically, grimoires show similar practices going back at least to the 5th century, but likely much longer if ancient Egyptian works are considered (cf. Skinner, 2014).

For example, the *Hygromanteia* (Marathakis, 2017) proscribes summoning a protracted set of operations to include a place of isolation, the specific design of a detailed circle, the placement of various incense, the use of a pre-sanctified knife, and a series of invocations involving various demands and name of God and spirits (pp. 277-281). Importantly, the magician using these methods must memorize and engage in protracted prayers and invocations just to perform the ritual. Grimoires from the 1600’s such as the *Book of Sacred Magic of Abramelin the Mage* (Mathers, 1975), endorse a multi-month project in seeking one’s “Holy Guardian Angel” upon which the method of obtaining this connection involves daily washing with specific prayers for a period of two lunar months, noting as a footnote regarding successful prayer that “This is the great point to be studied in all magical operations soever, and unless the whole heart and soul and faith go with the ceremony, there can be no reliable result produced” (Mathers, 1975, p. 65). It further indicates chastity during the entire period, abandoning all business and commerce, two hours per day reading scripture and

holy books, and avoiding alcohol while rising before sunrise. Notably, the above two-month preparatory period prepares the initiate for the *second* phase of two months which ascribes additional goals towards the final project of communing with the HGA. Additional examples from the *Goetia* (Mathers, 1995) and *The Sworn Book of Honorious* (Peterson, 2016), similarly eschew complex details, components, and practices towards the creation of magic. In sum, the theme extant in nearly all Grimoires shows systematic methods in a general order, which vary in their dedication and time commitment, as well as ideology, but appear to be procedurally consistent.

Magical Method, Transliminality, and the Science of Parapsychology

Based on the above, and consistent with Radin’s (2018) perspective, one way to model magic is to consider historical and current magical practice as self-induced manipulation of the psyche to produce synchronistic or parapsychological effects. For those familiar with anomalous research, the involvement of procedure, meditative techniques, ASCs, and guided visualization in relation to psi-type effects should seem highly familiar, as they are obvious personal procedures that have been directly mimicked in the laboratory in relation to psi (cf. Radin, 2018). There are many examples from decades of research showing parapsychological effects relative to mirror-gazing (Caputo, 2010), the role of dissociation and ASCs in mediumship (Wahbeh et al., 2023), conscious intention work (Bengston & Kripsley, 2000; Bengston et al., 2023; McTaggart, 2008), examinations of Reiki and energy effects (Moga & Bengston, 2010; Moga, 2014; 2017), and recent studies examining “the right person in the right environment” with regards to anomalous experiences and putative psi effects (Laythe et al., 2022). We hypothesize that magical practitioner communities may represent ideal collaborators to further our understanding of the complex roles of belief, individual differences, interpretation, and outcomes associated with psi phenomena (see, e.g., Ventola et al., 2019). Our rationale is simple and based within three justifiable points:

1. Magical practitioners engage in a variety of regular specific practices, which can differ based on the broad practical goal desired (e.g., speaking with ancestors versus healing, hexes, or love-spells) purposely designed to invoke paranormal effects. They are trained methodological paranormalists, in direct contrast to the specific (and less proscribed) subsets of magical acts of channeling or necromancy of psychics or mediums typically studied. As such, the effects of their

- specific methods and cognitions can directly be tested for accuracy or efficacy, in which we would expect to see significant relationships despite the diversity of ideological diversity present in this magical sample, because the underlying methods are similar.
2. Magicians, as a subset of the 'paranormal community', are likely to be high in transliminality and thus might use magical techniques to focus this to their own benefit.
 3. Magicians may well represent a managed or controlled version of Haunted People Syndrome (i.e., recurrent anomalous experiences facilitated by hyper-sensitivities, exacerbated by dis-ease states, and sustained by contagious processes; cf. Houran & Laythe 2022) but use magical practices to moderate or benefit from psychic "intrusions, visualizations, or somatosensory effects."

The Case for Magic and Transliminality

One of the more well-validated variables related to paranormal phenomena is the concept of transliminality. This is a perceptual-personality variable comparable to Hartmann's (1991) mental boundary construct (Houran, Thalbourne, & Hartmann, 2003; Lange, Houran, Evans, & Lynn, 2018; Thalbourne & Maltby, 2008), which notably is a predecessor of more recent constructs of "sensory processing sensitivity" (Aron & Aron, 1997; Greven et al., 2019). Looking at general associations between transliminality and neurological phenomena, transliminality has been associated with neuroplasticity (e.g., Thalbourne, Crawley, & Houran, 2003; Thalbourne et al., 2001; Thalbourne & Maltby, 2008), and syncretic cognitions (e.g., Evans et al., 2019; Houran et al., 2006; Lange et al., 2019).

In terms of its functionality, Transliminality is specifically defined as "hypothesized tendency for psychological material to cross (*trans*) thresholds (*limines*) into or out of consciousness" (Thalbourne & Houran, 2000, p. 853), and subsequently modified by Thalbourne and Maltby (2008), to be defined as "a hypersensitivity to psychological material originating in (a) the unconscious, and/or (b) the external environment" (p. 1618). The latter definition of transliminality is highly relevant to research on entity encounter experiences, noting that high-transliminals are more prone to sensitivities within a wide range of stimuli (Evans et al., 2019; Jawer & Micozzi, 2009; Thalbourne et al., 2001) both from the external environment, as well as both conscious and unconscious internal psychology.

Given the increased 'flow' of information from the unconscious and environment in transliminals, it should not surprise the reader that Transliminality is thus highly related to a bevy of other ASCs (Rock et al., 2015; Thal-

bourne & Houran, 2000). These include dissociation (Evans et al., 2019) and absorption (Rock et al., 2023; Thalbourne, 2010, but see Ventola et al., 2019 for a summary of these variables). As such, transliminality, at worst, represents a highly correlated neurologically correlated trait construct of ASCs and, at best, an underlying core component of all of the above.

However, that is not to say that transliminality should be automatically equated to psychosis-related mental illness, which represents a statistically poor explanation for paranormal experiences (Houran & Laythe, 2022; Rock et al., 2023). Rather, increasing research suggests that transliminality manifests as part of "the right person in the right environment" (Laythe et al., 2022) with regard to experiences of high strangeness. Accordingly, a transliminal model implies that ghostly episodes and kindred phenomena are associated with a particular psychometric profile and more accurately represents hypersensitivity to both internal and external stimulus (Laythe et al., 2022). It is historically significant to mention that the 3rd century Greek philosopher, Iamblichus, in his work *On the Mysteries*, writes of a strikingly similar observation to the "right person in the right environment" and the ideas of transliminality. When discussing why theurgy does not seem to work for all who may attempt it, Iamblichus includes an unmistakable variation of right person, right place in the letter of Porphyry to Anebo, "that not all men, but those that are more simple and young are more adapted to predictions" (Taylor, 2012, pg. 18). The writing further clarifies that when "the senses are occupied, that fumigations are introduced, and that invocations are employed" (Taylor, 2012, pg. 18), the optimal conditions for ritual are met, suggesting that a state of dis-ease induced through the means of ritually decorated environments may aid those proficient in theurgy in achieving such splended results. We note here that none of the above definitions neither preclude nor necessarily endorse parapsychological components to the above model.

When a "thin boundary structure" is naturally associated with the above dissociative and ASC components of psychological functioning, it seems a valid hypothesis to claim that if transliminality was not present within a magical practitioner, one would wish that it was. The clear associations and ability to receive inputs more easily from the unconscious, conscious, and external environment (cf., Laythe et al., 2022) would only facilitate and strengthen the core mental exercises of visual and guided imagery, meditation, and absorption involved with the self and ritual environment in terms of conducting magic. Indeed, high transliminality, when utilized and managed in the context of a set of exercises that trains the individual to shape, classify, or control mental imagery and

sensory experiences, would be likely to foster magical experiences. This hypothesis is certainly supported by mirror-gazing studies (Caputo, 2010), where multiple studies show alterations in perception and visions with untrained participants, often within a period of slightly over a minute (see Caputo 2010, 2013, 2021). Perhaps more importantly, noting Durkhiem's (cf. Pickering, 2009) and Skinner's (2014) models of religion and magic, the magical practitioner has a real or perceived sense of control over paranormal phenomena through their practice and ritual, as opposed to the religious and many experiencers of high-strangeness.

Indeed, one of the key differences that can be shown between the magician who invokes or controls spirits and paranormal phenomena versus existing research in those who have a variety of paranormal experiences is a component of control. Notably, *Haunted People Syndrome* (Laythe et al., 2021, 2022) denotes that within an interactionist framework, transliminality, or related measures of permeable boundaries, seems to be a key variable in relationship to hauntings and related forms of entity encounters and high strangeness (e.g., Houran et al., 2003; Kumar & Pekala, 2001; Simmonds-Moore et al., 2019). Indeed, previous research shows that transliminality predicts haunting experiences above and beyond cognitive, personality, and trait variables (Ventola et al., 2019; Lange, Laythe & Houran 2023). However, one of the key distinguishing features of entity encounter experiences and magic is that the former often "happens" to the percipient, while the latter invokes or controls it.

For instance, when examining the core features of paranormal experiences with the Survey of Strange Events (SSE: Houran et al., 2019a; 2019b), a Rasch-scaled measure of objective (i.e., directly observable) versus subjective (i.e. internally experienced) phenomena related to hauntings, various profiles were developed which notably showed different types of phenomena hierarchies in relation to whether the participant was seeking a paranormal experience (i.e. lifestyle) versus spontaneous accounts. More importantly for the current work, applications to the SSE with regards to imaginary friends (i.e., Little, Laythe, & Houran, 2021; Laythe, Houran, & Little, 2021) and gang-stalking accounts (i.e., OKeefe et al., 2019; Lange et al., 2020) suggest that the core phenomenological experiences featured in the SSE are similarly endorsed within the above scenarios, suggesting that there is a "core phenomenology" of high strangeness which is interpreted in accordance with the environment and beliefs of the person interacting with anomalous phenomena (Laythe et al., 2022). But to be clear, in all of the above instances where SSE phenomena are noted, there are clear indicators that the percipient did not seek out the anomalous-paranor-

mal experiences, and these anomalous-paranormal experiences subsequently generate anxiety and distress. Thus, the evidence appears to point to the fact that (a). there is a robust predictive relationship between transliminality and endorsing SSE phenomena, (b). that objective and subjective phenomena appear "intertwined" within a single-dimensional probabilistic hierarchy, and (c). these same phenomena are present in unidimensional patterns when non-haunting types of high-strangeness are examined (for a summary, see Laythe et al., 2022).

The spontaneous and fear-generating aspects of paranormal experience are prevalent enough that examination into case studies of hauntings and poltergeists has led us to a "transliminal dis-ease model" nested into features we more generally denote as Haunted People Syndrome (HP-S: Houran & Laythe, 2022; O'Keefe et al., 2019; Lange et al., 2020; Laythe et al., 2021). Indeed, reviews of poltergeist literature (i.e., Houran et al., 2022) and long-term hauntings (Houran & Laythe, 2022) suggest that hauntings can generally fit into unwanted paranormal intrusions that repeatedly occur to people over time.

These phenomena create increasing degrees of fear, distress, and dis-ease, that increase or decrease as a function of psychosocial stressors, contagion among other family members and friends, and the worldview and belief system of the person (or persons) experiencing it (Houran & Laythe, 2022; Laythe et al., 2022; Ritson, Little, Laythe & Houran, 2020). Indeed, Houran and Laythe (2022) found in their case study that the core percipient (or focus person) had a long history of paranormal phenomena, as well as a family who raised her with similar sensitivities. Of key interest to the above case is that despite what appears to be strong degrees of transliminality and "spiritual sensitivity", at no point were members of this family trained or taught how to either engage with or control these psychic visions or mental intrusions that consistently entered their life.

The above highlights that the paranormal experient, in contrast to the magician, holds both similarities and differences. In terms of the former, the body of the above research makes it likely that magicians (perhaps obviously) experience paranormal phenomena and, secondly, are likely to have higher degrees of transliminality compared to average individuals, given the above research which shows both paranormal phenomena and transliminality in a variety of 'high-strangeness' explanatory systems and varying environments (cf. Laythe et al., 2022). To the latter, magicians appear to differ in the fact that they practice methods and techniques to purposely invoke these paranormal effects, in contrast to having them 'happen' against their will. Thus, an effective way to describe the

ritual magician's psychological profile that can 'invoke' high-strangeness is the concept of 'trained transliminals' or, people with naturally higher levels of transliminality (and associated ASCs), through which magical ritual and meditative processes can become focused or amplified. As such, we might propose that earlier case studies of HP-S (cf. Houran et al., 2022), represent high transliminals *without* benefit of the aforementioned mental magical methods. In turn, the untrained transliminal is subject to more frequent, random, or unwanted mental intrusions that foster anxiety and distress (i.e., dis-ease) and this circumstance robs "haunted people" of a sense of control over their own lives.

Finally, assuming our idea of magicians as "trained transliminals" is valid, we would then ask what it is that magicians are controlling. They are ostensibly directing or harnessing a range of anomalous phenomena towards specific ends that are desired by the magician, again, as opposed to waiting for random parapsychological effects to "happen" to them. We can explore this hypothesis via psi-testing with ritual magicians. Fortunately for us, transliminality also seems to be a predictor of psi outcomes (Houran & Lange, 2012; Lange & Houran, 2013; Storm & Thalbourne, 1999;2001), and notably, Lange, Laythe, & Houran (2023) showed an interaction between purportedly haunted versus non-haunted environments, degrees of transliminality and paranormal belief, and outcomes on a computerized test of psi. Specifically, participants high in both transliminality and paranormal belief scored significantly higher on the psi test when present within "haunted" (or enchanted) versus "unhaunted" (or disenchanting) environments. This clearly affirms the idea that parapsychological phenomena involve an interaction between the right people in the right environments.

Proposed Model and Summary

In summary, we propose that the methods and techniques of magical practitioners, demonstrated through the practice's historical use of complex ASC-generating techniques with historically documented environmental cues (i.e., Mathers, 1975), personal ritual and focus, and overt similarities with the paranormal phenomena reported in other forms of high-strangeness (i.e. Laythe et al., 2022), makes them a population that is not only likely to be highly transliminal, but also trained by universal magical techniques to better control the various sensitivities that come with this profile (for an overview, see Evans et al., 2019). We further posit, due to previous and recent work, that the combination of transliminality and mental methods may represent a "formula" by which magicians may fare better with invoked psi than either

chance levels or outcomes derived from the general population. Accordingly, this unprecedented study of practicing magicians explores the patterns in their (a) levels of transliminality and paranormal belief, (b) self-reported anomalous phenomena, (c) general magical, spiritual, or meditative practices, along with the type of sensorial information interpreted as "spirit and entity contact," and (d) performance on a computerized test of putative psi.

METHOD

Preliminaries

We describe how we determined our research samples, all data exclusions (if any), specific research questions, applicable manipulations, and all measures and data abstractions used in the study, and we strived to follow the Journal Article Reporting Standards (JARS) (Kazak, 2018). Our design, analysis, and research materials were not pre-registered, so we note several points for the following analyses. *First*, given that empirical research with samples of actual magical practitioners is exceedingly rare, if non-existent, we perform a bevy of analyses within this paper using correlation and regression techniques to parse out preliminary relationships among trait, practice, and ESP variables. To this extent, our analyses and findings are deemed exploratory in an attempt to initially map demographic and practice characteristics of a magically practicing community. We clearly express, therefore, a need for further research and a replication of the results. But we should emphasize here that the present sample, vetted for its commitment to actual practical magical acts, should not be confused with respondents from online magical chat groups or social media-based occult identity forums. As with any ideological group, there are those who associate with said groups for the social recognition and identity that they bring, and those who actually practice their ideas (e.g., intrinsic and extrinsic religiosity, Morris & Hood, 1981). Our sample is arguably unique for its abundance of practicing members. Therefore, we extensively detail both the demographics and operational variables should future researchers wish to compare means and related scores on demographic variables in contrast to future samples.

Second, and with respect to the above, our split-sample analytic approach provides an automatic replication for the bulk of the exploratory findings reported here. This approach randomly divides a dataset into Training and Replication samples so that results from one sample can be validated in the other (for example, see, e.g., Laythe et al., 2018). Specifically, we report the replicated results in the analyses where both randomly assigned split samples show a significant relationship, creating an

effective combined p -value of $.05 \times .05 = .025$, or $.01 \times .01 = .001$ (representing the combined p -value of obtaining two significant findings across two samples). *Finally*, due to the self-selection of the sample and subsequent smaller sample sizes, we eschewed a split-sample replication for the analysis of the psi test results. Instead, we applied standard statistical analyses.

Participants

Data was derived from a total of 327 (Sample 1: $n = 164$ and Sample 2: $n = 163$) participants, comprising 184 (56.4%) male, 122 (37.4%) female, and 17 (6.1%) non-binary, transgender, agender, genderqueer or genderfluid participants. Participants' ages ranged between 19 and 74 years ($M = 42.71$; $SD = 10.61$). Participants also spanned 25 different countries, with the majority living in the United States ($n = 181$; 55.4%), United Kingdom ($n = 53$; 16.2%) and Australia ($n = 28$; 8.6%). The sample was predominantly White ($n = 281$; 85.9%), followed by Hispanic ($n = 17$; 5.2%) and mixed race ($n = 16$; 4.9%). Most participants (75%) had completed a tertiary qualification, most frequently holding a Bachelors ($n = 117$; 35.8%) or Master's degree ($n = 73$; 22.3%). No significant demographic differences were observed between samples. The entirety of the magical practitioner sample was recruited from the private membership cultivated by Gordon White of Rune Soup, a 10-year running educational site provided and founded by Gordon White. Rune Soup provides regular podcasts and videos directly relating to the practice, metaphysics, history, science, and philosophy of magic. Private membership individuals similarly have access to

well over 100 hours of courses on magic (all of which, via forums and assignments, facilitate practice and experimentation), the vast bulk of which represent content, sources, and context at a senior-level of college or early graduate school level of education in terms of academic or philosophical sources used in this context. The current sample were voluntary participants of *The Foundations*, a new series of courses which represented a detailed class addressing the basic principals and foundational practices of performing magic.

Demographics, Magical Characteristics, and Sensory Experience Variables

Table 1 provides the descriptive statistics for all the following measures and variables.

Magical Practice Variables

Participants were asked how long they had actively practiced magic using a 8-point Likert style format with two year increments anchored by "less than two years", and "more than 20 years", including conducting rituals, "practical magic" and spells. From the above, about one-third (35.3%) of the sample practiced magic for four years or less, with 20.4% practicing for more than 20 years. Most participants indicated that they were taking the Foundations course as it was being released ($n = 245$; 74.9%), followed by those who were taking the course late but for the first time ($n = 43$; 13.1%) and those who were waiting for the material to be fully released ($n = 13$; 4.0%).

Household Variables

Table 1. Means, Standard Deviations and Range of Scores on Measures

Instrument	Sample 1			Sample 2		
	Mean (SD)	Min.	Max.	Mean (SD)	Min.	Max.
New Age Philosophy	31.16 (4.76)	16.32	47.72	31.98 (5.59)	13.52	47.72
Trad. Paranormal Belief	29.40 (4.69)	16.71	43.24	29.34 (4.27)	16.71	43.24
Transliminality	28.81 (3.63)	19.9	37.3	29.07 (3.37)	21.1	37.3
SSE General	54.14 (9.43)	30.3	90.9	54.61 (9.80)	30.3	90.9
SSE Magic	48.32 (11.18)	22.3	90.9	48.46 (11.94)	22.3	90.9
Sight	2.53 (1.10)	1	5	2.66 (1.01)	1	5
Hearing	2.65 (1.13)	1	5	2.75 (1.27)	1	5
Touch	2.44 (1.32)	1	5	2.34 (1.28)	1	5
Taste	1.47 (0.87)	1	5	1.69 (1.05)	1	5
Smell	2.07 (1.29)	1	5	2.17 (1.38)	1	5
Prayer	3.95 (1.17)	1	5	4.07 (1.17)	1	5
Meditation visualisation	3.72 (1.13)	1	5	3.75 (1.17)	1	5
Meditation stillness	3.65 (1.29)	1	5	3.71 (1.24)	1	5
Daily rituals	3.74 (1.24)	1	5	3.77 (1.29)	1	5
Daily day to day insights	3.52 (1.32)	1	5	3.58 (1.16)	1	5
Daily dream intrusions	3.23 (1.27)	1	5	3.44 (1.26)	1	5
Insight scrutiny	3.45 (1.11)	1	5	3.62 (1.14)	1	5

Participants were asked a series of questions about their household composition and other household members. These items included how many people reside in your household, are there any members of your household who also practice magic? and from above, are there any members of the household participating in the course? All of the above items were asked in interval (exact number) format. From these questions, magical practitioners reported that they most frequently lived with one other person ($n = 124$; 38.3%), followed by living alone ($n = 67$; 20.7%) or with two other people ($n = 62$; 19.1%). While most participants indicated that they were the only ones in their household who practiced magic ($n = 214$; 65.4%), almost one-quarter of the sample lived with another person who practiced ($n = 77$; 23.5%), and a smaller proportion lived in a household where everyone practiced magic ($n = 26$; 8.0%). Similarly, most participants were the only ones in their household completing the Foundations course ($n = 256$; 78.3%).

Sensory Experience Items

Participants were asked how they receive information during spiritual or paranormal experiences with respect to their five senses. As an exploratory measure, these five items were arranged in a 5-point Likert format, which was designed to measure the distinction between internally perceived experiences (subjective), which increased in degrees towards what is perceived as externally perceived experiences (objective). Participants were asked to rate their paranormal experiences across all five senses with the following guide for rating: 1 = A core impulse or sense process in your mind only that you have to translate into speech or vision (or any of the other senses) inside your own mind., 2 = something between 1 and 3, or a combination of both., 3 = A direct sense impulse which

translates to hearing a sentence, seeing an image, the mental perception of touch, taste, or smelling something clearly in your imagination (mind’s eye) only. 4 = Something between 3 and 5 or a combination of both., 5 = A spiritual message or sense that you perceive to see, feel, hear, etc.....in your actual five senses (i.e., I actually saw, I actually heard, I actually smelled). Although each sense is treated separately for analyses, we note an underpinning relationship between the five senses and the degree to which a person perceives paranormal experience as subjective or objective, noting an overall alpha for these five items was .71.

Magic practitioner’s responses for these items, for both samples, showed most participants received sensory information inside their mind or within their mind’s eye (responses 1-3): sight (S1 = 81.6%; S2 = 81.4%), hearing (S1 = 69.2%; S2 = 76.8%), touch (S1 = 79.1%; S2 = 74.2%), taste (S1 = 89.7%; 95.3%), smell (S1 = 77.7%; S2 = 82.6%). A smaller proportion of both samples indicated that they receive sensory input beyond their mind’s eye, including seeing, hearing and smelling stimuli (responses 4-5): sight (S1 = 18.4%; S2 = 18.6%), hearing (S1 = 30.9%; S2 = 23.2%), touch (S1 = 21.0%; S2 = 25.8%), taste (S1 = 10.3%; S2 = 4.7%), smell (S1 = 22.3%; S2 = 17.5%). See Table 1 for the mean scores for each sensory modality and Table 2 for the frequencies of each response option for both samples.

Daily Practice Variables

In order to assess ancillary variables to magical practice, as well as gaining contextual detail about the participant’s general magical practices, the following questions were also asked on a Likert scale of 1 to 5 where: 1 = rarely, 3 = sometimes, and 5 = frequently. Questions included: “I engage in prayer; I engage in meditation fo-

Table 2. Frequency of Sensory Experiences Across Samples

Sensory Response	Sight		Hearing		Touch		Taste		Smell											
	n	%	n	%	n	%	n	%	n	%										
1. A core impulse or sense process in your mind only that you have to translate into speech or vision (or any of the other senses inside your own mind).	32	21	23	15	30	19	32	20	49	33	52	35	105	71	93	64	70	47	69	47
2. Something between 1 and 3, or a combination of both.	46	30	42	27	38	25	41	26	37	25	34	23	27	18	21	14	35	24	32	22
3. A direct sense impulse which translates to hearing a sentence, seeing an image, the mental perception of touch, taste, or smelling something clearly in your imagination (mind’s eye) only.	49	31	64	41	51	33	37	23	26	17	31	21	10	6.7	17	12	18	12	14	9.5
4. Something between 3 and 5 or a combination of both.	22	14	24	15	29	19	33	21	27	18	21	14	5	3.4	14	9.6	15	10	19	13
5. A spiritual message or sense that you perceive to see, feel, hear, etc.	7	4.5	5	3.2	7	4.5	16	10	12	7.9	10	6.8	2	1.3	1	0.7	11	7.4	14	9.5



cused on visualization" (Western meditation); "I engage in meditation focused on stillness" (Eastern meditation); "I engage in daily rituals ascribed by my personal practice for spiritual health" (daily application); "I receive insights or spiritual communication during my day to day affairs" (uninvited insights); "I receive insights or spiritual communication through my dreams" (dream insights); and "I engage in intense scrutiny of the spiritual messages I receive" (critical analysis of insight material).

Standardized Measures

Revised Paranormal Belief Scale (RPBS) (Lange et al., 2000).

This measure is a 16-item Rasch scaled version of Tobacyk's (1988, 2004) original 26-item measure, based on a seven-point Likert scale anchored at "strongly disagree to strongly agree". Rasch scaling shows that the RPBS comprises a two-factor model representing New Age Philosophy (NAP: 11 items measuring a greater sense of control over interpersonal and external events) and Traditional Paranormal Beliefs (TPB: five items representing a culturally-transmitted and beneficial in maintaining social control via a belief in magic, determinism, and a mechanistic view of the world).

Revised Transliminality Scale (RTS: Lange et al., 2000; Houran et al., 2003)

The RTS is a Rasch-purified version of Thalbourne's (1998) original scale, representing 17 items in a T/F format. Previous research relates transliminality as an underlying structure regarding Hyperesthesia, (fleeting) Hypomanic or Manic Experience, Fantasy-Proneness, Absorption, Positive (and perhaps obsessive) Attitude Towards Dream Interpretation, Mystical Experience, and Magical Thinking (see Evans et al., 2019; Lange et al., 2019).

Survey of Strange Events (SSE: Houran et al., 2019a)

This is a 32-item Rasch (1960/1980) scaled measure of the overall "haunt intensity" (or perceptual depth) of a ghostly account or narrative via a "true/false" checklist of anomalous experiences inherent to these episodes. The SSE's Rasch item hierarchy represents the probabilistic ordering of S/O events according to their endorsement rates but rescaled into a metric called "logits." Higher logit values denote higher positions (or greater difficulty) on the Rasch scale (Bond & Fox, 2015). More information about the conceptual background and psychometric development of this instrument is provided by Houran et al. (2019a, 2019b). Rasch scaled scores range from 22.3 (=

raw score of 0) to 90.9 (= raw score of 32), with a mean of 50 and $SD = 10$, and Rasch reliability = 0.87. Higher scores correspond to a greater number and perceptual intensity of anomalies that define a percipient's cumulative experience of a ghostly episode. Supporting the SSE's construct and predictive validities, Houran et al. (2019b) found that the phenomenology of "spontaneous" accounts (i.e., ostensibly sincere and unprimed) differed significantly from control narratives from "primed conditions, fantasy scenarios, or deliberate fabrication." That is, spontaneous ghostly episodes have a specific sequence (or Rasch model) of S/O anomalies that is distinct from the details of narratives associated with other contexts.

Regarding the two samples' response patterns on the SSE, the two most frequently endorsed strange experiences in everyday life were "A sense of déjà vu, like something was strangely familiar to me about my thoughts, feelings or surroundings" ($S1 = 93.8\%$; $S2 = 96.9\%$), and "A negative feeling for no obvious reason, like anger, sadness, panic, or danger" ($S1 = 89.0\%$; $S2 = 84.0\%$). The next three most-endorsed items were the same for both samples; however, they were ranked in a different order. These included "Experiencing positive feelings for no obvious reason" ($S1 = 87.0\%$; $S2 = 82.0\%$), "The feeling of being watched or in the presence of an invisible being or force" ($S1 = 85.8\%$; $S2 = 82.1\%$), and "Odd bodily sensations, including dizziness and tingling" ($S1 = 75.9\%$; $S2 = 75.0\%$). Similarly, the five least-endorsed experiences in everyday life were the same for both samples; however, they were ranked in a different order. These included having "Fires start mysteriously" ($S1 = 9.9\%$; $S2 = 8.0\%$), "Seeing objects floating or flying in mid-air" ($S1 = 15.4\%$; $S2 = 16.8\%$), and "Being mysteriously touched in a threatening manner, including cuts, bites or shoves" ($S1 = 24.1\%$; $S2 = 21.6\%$).

There was greater variability across samples in the ranking of altered-anomalous events experienced during magical practice. While the order of items varied across samples, the five most-endorsed anomalies during magical practice were: "Experiencing positive feelings for no obvious reason" ($S1 = 80.2\%$; $S2 = 75.2\%$), "Mysterious feeling of being watched" ($S1 = 79.0\%$; $S2 = 77.2\%$), "Odd sensations, including dizziness and tingling" ($S1 = 69.1\%$; $S2 = 71.6\%$), "Communicating with the dead or other outside forces" ($S1 = 68.7\%$; $S2 = 72.2\%$), and "Experiencing déjà vu" ($S1 = 60.1\%$; $S2 = 58.0\%$). Similarly, while the order varied, the five least frequently endorsed strange events were the same for both samples, including having "Plumbing equipment malfunction" ($S1 = 5.0\%$; $S2 = 8.1\%$), "Hearing mysterious sounds via audio recorders" ($S1 = 5.6\%$; $S2 = 6.8-7.5\%$), "Seeing objects flying or floating in mid-air" ($S1 = 6.3\%$; $S2 = 5.0\%$), and having "Fires

Table 3. Frequency of Strange Events (SSE) in Everyday Life and During Magical Practice

Survey of Strange Events Item	SSE General				SSE Magic			
	S1		S2		S1		S2	
	n	%	n	%	n	%	n	%
I saw with my naked eye a non-descript visual image, like fog, shadow or unusual light	102	63	101	62.7	72	44.4	75	46.3
I saw with my naked eye an “obvious” ghost or apparition – a misty or translucent image with a human form	57	35.6	59	36.6	30	18.6	27	16.9
I saw with my naked eye an “un-obvious” ghost or apparition – a human form that looked like a living person	66	40.5	64	39.8	36	22.4	28	17.4
I smelled a mysterious odor that was pleasant	73	45.3	77	47.5	55	34	48	30
I smelled a mysterious odor that was unpleasant	64	39.5	56	34.8	24	14.9	33	20.4
I had a positive feeling for no obvious reason, like happiness, love, joy, or peace	141	87	132	82	130	80.2	121	75.2
I had a negative feeling for no obvious reason, like anger, sadness, panic, or danger	145	89	136	84	93	57.8	79	49.4
I felt odd sensations in my body, such as dizziness, tingling, electrical shock, or nausea (sick in my stomach)	123	75.9	120	75	112	69.1	116	71.6
I had a mysterious taste in my mouth	49	30.2	51	31.7	33	20.5	35	21.7
I felt guided, controlled or possessed by an outside force	70	43.2	80	49.7	86	53.1	86	53.4
I saw beings of divine or evil origin, such as angels or demons	39	24.5	46	28.4	61	37.9	56	34.8
I saw folklore-type beings that were not human, such as elves, fairies, or other types of “little people”	48	30	45	27.8	45	27.8	36	22.5
I communicated with the dead or other outside force	101	62	110	67.9	112	68.7	117	72.2
I had the mysterious feeling of being watched, or in the presence of an invisible being or force	139	85.8	133	82.1	128	79	125	77.2
I had a sense of déjà vu, like something was strangely familiar to me about my thoughts, feelings or surroundings	152	93.8	157	96.9	98	60.1	94	58
I heard mysterious sounds that could be recognized or identified, such as ghostly voices or music (with or without singing)	70	43.2	73	45.3	39	24.2	51	31.7
I heard mysterious “mechanical” or non-descript noises, such as tapping, knocking, rattling, banging, crashing, footsteps or the sound of opening/closing doors or drawers	94	58.4	83	51.9	45	28	45	28
I heard on an audio recorder mysterious sounds that could be recognized or identified, such as ghostly voices or music (with or without singing)	25	15.5	25	15.4	9	5.6	11	6.8
I heard on an audio recorder mysterious “mechanical” or non-descript noises, such as tapping, knocking, rattling, banging, crashing, footsteps or the sound of opening/closing doors or drawers	26	16	23	14.2	9	5.6	12	7.5
I felt a mysterious area of cold	91	56.5	98	60.5	64	39.8	67	41.6
I felt a mysterious area of heat	68	42.2	69	42.6	60	37.5	63	39.1
I experienced objects disappear or reappear around me	64	39.5	69	42.9	17	10.5	22	13.6
I saw objects moving on their own across a surface or falling	39	24.1	35	21.7	18	11.2	17	10.5
I saw objects flying or floating in midair	25	15.4	27	16.8	10	6.3	8	5
Electrical or mechanical appliances or equipment functioned improperly or not at all, including flickering lights, power surges or batteries “going dead” in electronic devices (e.g., camera, phone, etc.)	91	56.5	97	59.9	44	27.2	51	31.7
Pictures from my camera or mobile device captured unusual images, shapes, distortions or effects	49	30.1	54	33.3	19	11.8	15	9.3
Plumbing equipment or systems (faucets, disposal, toilet) functioned improperly or not at all	40	24.7	46	28.6	8	5	13	8.1
I saw objects breaking (or discovered them broken), like shattered or cracked glass, mirrors or housewares	44	27.3	50	31.3	23	14.2	23	14.2
I felt a breeze or a rush of wind or air, like something invisible was moving near me	98	60.1	98	60.5	94	58	91	56.5
Fires have started mysteriously	16	9.9	13	8	13	8	10	6.2
I was mysteriously touched in a non-threatening manner, like a tap, touch or light pressure on my body	89	54.9	84	52.2	77	47.5	70	43.2
I was mysteriously touched in a threatening manner, such as a cut, bite, scratch, shove, burn or strong pressure on my body	39	24.1	35	21.6	20	12.3	16	10

start mysteriously” (S1 = 8.0%; S2 = 6.2%). Table 3 gives the frequencies of anomalous events (per SSE item endorsements) in daily life versus during magical practice.

Notably, more detailed comparisons are warranted in the context of the haunter profiles created by Houran et al. (2019a;2019b) and related SSE profiles (Little et al., 2021)



Table 4. Correlations Between Demographics, Measures and Individual Difference Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Years Practiced		0.09	0.16	.38*	.44*	.20*	0.12	0.16	.26*	0.15	.21*	.26*	.30*	0.05	.25*	.25*	.20*	.27*
2 New Age Philosophy	0.06		.66*	0.09	0.05	0.13	.24*	0.15	0.09	0.11	0.01	.23*	.20*	0.01	.20*	.32*	.23*	.22*
3 Trad. Paranormal Belief	0	.56*		0.09	0.18	0.15	.23*	0.1	0.15	0.09	0.01	.23*	0.12	-0.06	0.08	.21*	0.09	.21*
4 SSE General	.28*	.22*	0.14		.76*	.61*	.31*	.39*	.29*	.28*	.36*	.24*	.31*	0.06	.19*	.37*	.42*	.29*
5 SSE Magic	.45*	0.12	0.09	.69*		.47*	.22*	.28*	.35*	.20*	.27*	.23*	.25*	0.07	.28*	.30*	.29*	.28*
6 Transliminality	.36*	0.12	.21*	.58*	.48*		.42*	.27*	.28*	.32*	.35*	0.06	.33*	0.14	.19*	.35*	.32*	.32*
7 Sight	.25*	0.12	0.09	.26*	.30*	.35*		.50*	.18*	.18*	.22*	0.1	.31*	0.04	0.05	.28*	.21*	0.14
8 Hearing	.26*	0.1	-0.02	.30*	.35*	.20*	.19*		.21*	.20*	.21*	0.06	.20*	0.07	-0.02	.32*	.24*	.18*
9 Touch	.25*	-0.07	-0.08	.26*	.30*	.21*	.30*	.22*		.46*	.41*	.21*	0.14	.26*	.18*	.23*	.21*	.32*
10 Taste	.23*	0.13	0.1	.30*	.25*	.25*	.23*	0.01	.30*		.69*	0.12	0.1	.16*	0.06	.22*	.26*	.28*
11 Smell	.29*	0.15	0.04	.46*	.38*	.32*	.31*	.19*	.41*	.55*		0.06	.24*	0.12	0.07	.23*	.31*	.26*
12 Prayer	0.17	.24*	.30*	0.09	.18*	0.12	0.09	0.11	.17*	0.1	0.09		.35*	.28*	.46*	.36*	.22*	.25*
13 Meditation Visualisation	.25*	0.11	0.14	.16*	0.15	0.14	.18*	0.06	.21*	.17*	0.11	.34*		.36*	.32*	.35*	.30*	.34*
14 Meditation Stillness	-0.16	-0.12	0.07	-0.04	0.03	0.01	-.16*	-0.01	0.02	-0.03	-0.09	.26*	.39*		.37*	.20*	0.1	.23*
15 Daily Rituals	.20*	.19*	.22*	.18*	.21*	0.14	0.07	0.07	0.09	0.1	0.04	.43*	.35*	.25*		.37*	.29*	.28*
16 Daily Day to Day Insight	.31*	.35*	.26*	.26*	.35*	.43*	.32*	.25*	.23*	.17*	.26*	.40*	.37*	0.11	.47*		.59*	.48*
17 Daily Dream Intrusions	.34*	.26*	.17*	.33*	.36*	.38*	.29*	.27*	0.13	.21*	.28*	.27*	.30*	0.04	.24*	.63*		.45*
18 Insight Scrutiny	.27*	.33*	.29*	.25*	.22*	.36*	.22*	.22*	0.14	0.15	.24*	.25*	.39*	0.09	.29*	.53*	.45*	

and are the topic of future work.

E-PSI (Element-PSI) App (Laythe & Roberts, 2023)

This Google Form based psi test is best characterized as a double-randomized card draw from four possible choices representing the four traditional elements (earth, air, fire, and water) elements across seven trials. The user selects their trial from a set of four trial options representing a set of four twelve-numbered series. Unlike other ESP tests, E-PSI contains questions about the participant’s mood, environment, and focus both for the overall session and within each trial. These questions include the *specific location* where the test was conducted, as well as 4-point forced-choice Likert questions assessing *mood* (i.e., “I am feeling anxious or stressed” and “I am feeling happy”) and *environmental distraction* (i.e., “It is noisy or crowded where I am taking my test” and “I feel that I can concentrate”). Further, during the test, participants are asked, “To what extent do you feel that your chosen answer is correct?” anchored on a 4-point forced-choice Likert scale (1 = *Not at all certain*, and 4 = *Very certain*). Second, participants are asked “How focused were you on selecting the correct element?” responded on a 7-point Likert scale anchored on (1 = *I had much difficulty focusing*, to 7 = *I was very focused*). We refer the reader to Laythe and Roberts (2023) for extensive details on this measure.

Procedure

As specified previously, participants were invited to voluntarily contribute to the survey as part of White’s *Foundations Course*, an extensive multi-month class on the basic components and methods of magical practice. Participation occurred in two stages, noting that several steps were taken to ensure an unbiased response, and participants were informed by both White and the researchers that participation was entirely voluntary. The first stage involved participants completing an online survey containing the bulk of demographic and standardized measures. From this sample, participants were subsequently invited to participate in an online ESP test (see Measures, and Laythe & Roberts, 2023) where they took the test at a location of their choosing and a second time where participants were asked to use magic to influence the outcome of the ESP test (again at a location of their choosing). Thus, the analyses reported represent a two-stage data collection process: an initial voluntary survey, and subsequent two-stage ESP tests from the initial voluntary sample.

RESULTS

Correlational Analyses Across Two Samples

Pearson product-moment correlations assessed the relationships between scales, sensory and meditation items, and years spent practicing magic. Table 4 gives the full correlation matrix, which shows a generally positive



manifold of correlations among all variables. For both samples, transliminality was a strong and significant predictor of SSEg ($r's = .58$ to $.61$, $p's < .01$) and SSEr ($r's = .47$ to $.48$, $p's < .01$) scores. The approximate difference between anomalous experiences reported in general life versus during focused rituals was approximately .20. Secondly, we see a significant association between years a magician has practiced and transliminality scores ($r's = .20$ to $.36$, $p's < .05$), as well as with both SSEg and SSEr anomalous experiences ($r's = .28$ to $.45$, $p's < .01$). This affirms a systematic relationship between years of occult practice and greater degrees of transliminality, as well as greater degrees of reported anomalous experiences.

In terms of the types of sensory experience and the nature of paranormal experience in terms of perceived events being internal or imaginal versus external or perceived as factual in the environment, a positive manifold of correlations again exists, noting that transliminality was significantly associated with all five senses across both samples ($r's = .20$ to $.35$, $p's < .05$, with the majority being $p's < .01$) showing a small but significant tendency towards transliminality facilitating more external perceptions across the five senses. Similarly, all five senses and the degree to which anomalous events were experienced as external (i.e., both SSEg and SSEr were similarly significantly associated ($r's = .22$ to $.46$, $p's < .05$, with the majority being $p's < .01$). As such, transliminality appears mildly, but significantly associated with both the degree to which magic practitioners experience anomalous phenomena externally through the five senses for both spontaneous or unexpected anomalies (SSEg) and focused and intentional ritual (SSEr).

Regarding meditative, insight, and mystical experiences, transliminality was significantly associated with day-to-day insight, dream intrusions, and self-examination of spirit or magical insights ($r's = .32$ to $.43$, $p's < .01$) and was associated with purposeful meditation visualizations (Western mediation style, $r's .25$ to $.33$, $p's < .01$), but not stillness or mindfulness (Eastern meditation style). Engaging in daily rituals as a function of transliminality were mildly significant ($p's .19$ to $.20$, $p's < .05$). An almost exact pattern was shown with the above-mentioned variables and their relationship to both SSEg and SSEr ($r's = .22$ to $.39$, $p's < .05$, with the majority being $p's < .01$). Similar to findings with transliminality, both daily rituals, and visualization meditation were mildly but positively predictive of both types of SSE scores ($r's = .15$ to $.31$, $p's < .05$, but noting a lack of replication across both samples between visualization meditation and SSE scores $r = .15$, n.s.). In essence, the above shows a relationship between transliminality and specific practices which endorse mediation and self-scrutiny regarding what are psychologi-

cally interpreted as spiritual insights or spirit contact.

Finally, and somewhat uniquely compared to previous research with other paranormal experience groups (e.g., Laythe, 2019), paranormal beliefs measured as New Age Beliefs and Traditional Paranormal Beliefs generally did not predict the other variables, including both transliminality and the SSE ($r's = .05$ to $.22$, $p's = n.s.$), which, in bulk, were weak and did not replicate across samples. We think this finding might indicate issues with the wording of some or all the paranormal belief items, which was indeed identified as problematic by some participants. Logically speaking, paranormal belief is essentially a philosophical requirement if one is going to practice magic, so we address these relationships further in the discussion.

Multiple Regression Across Two Samples

As shown above, transliminality shows a significant association not only with the reporting of anomalous phenomena but also with the extent to which the five senses perceive these events as *internal* or subjective (within the person) as opposed to *external* (perceived as originating outside the individual). Thus, multiple linear regressions were run for both samples to predict SSE General and SSE Magic scores from TPB, NAP, transliminality, and sensory item scores (see Table 5).

Regarding general paranormal experience (SSEg), The overall linear regression models predicting SSE General scores from existing measures were significant (S1: $F(8, 123) = 11.127$, $p < .001$; S2: $F(8, 120) = 11.032$, $p < .001$) explaining between 42.0% (S1) and 42.4% (S2) of the variance in the endorsement of strange experiences in everyday life. For both samples, transliminality (S1: $t = 5.03$, $p < .001$; S2: $t = 5.80$, $p > .001$) and Hearing (S1: $t = 2.08$, $p = .040$; S2: $t = 2.97$, $p = .004$) were significant independent predictors, while Smell scores were only a significant predictor of SSE General scores for Sample 1 ($t = 2.82$, $p = .006$).

Concerning anomalous experiences during magical practice (SSEr), the overall linear regression models predicting SSE Magic scores from TPB, NAP, transliminality and sensory item scores were significant (S1: $F(8, 124) = 7.787$, $p < .001$; S2: $F(8, 110) = 5.073$, $p < .001$), explaining between 27.0% (S2) and 33.4% (S1) of the variance in SSE Magic scores. Transliminality was the only significant independent predictor of SSE Magic scores across both samples (S1: $t = 3.75$, $p < .001$; S2: $t = 3.46$, $p = .001$). Hearing was a significant predictor of SSE Magic scores in Sample 1 ($t = 2.74$, $p = .007$), while Touch was a significant predictor in Sample 2 ($t = 2.20$, $p = .030$).

Analysis aside, the simple regression model using all of the above variables and predicting SSEg shows that

Table 5. Multiple Regression of Sense Variables, Paranormal Belief, and Transliminality on SSE

SSE GENERAL	SAMPLE 1			SAMPLE 2		
	β	<i>t</i>	<i>p</i>	β	<i>t</i>	<i>p</i>
(Constant)		1.572	0.119	0.708	0.480	
NewAgePhilosophy	0.112	1.313	0.192	-0.011	-0.111	0.912
Tradi. Paranormal Belief	-0.036	-0.415	0.679	0.022	0.226	0.821
Transliminality	0.412	5.026	0.000	0.472	5.802	0.000
Sight	-0.012	-0.149	0.882	-0.061	-0.671	0.503
Hearing	0.152	2.076	0.040	0.250	2.972	0.004
Touch	0.026	0.331	0.741	0.081	1.002	0.318
Taste	0.007	0.080	0.936	-0.071	-0.713	0.477
Smell	0.265	2.824	0.006	0.176	1.792	0.076
SSE MAGIC	β	<i>t</i>	<i>p</i>	β	<i>t</i>	<i>p</i>
(Constant)		1.095	0.276	0.226	0.822	
NewAgePhilosophy	0.022	0.244	0.808	-0.130	-1.221	0.225
Tradi. Paranormal Belief	-0.035	-0.382	0.703	0.150	1.399	0.165
Transliminality	0.326	3.748	0.000	0.334	3.464	0.001
Sight	0.053	0.628	0.531	-0.061	-0.581	0.563
Hearing	0.216	2.737	0.007	0.155	1.516	0.132
Touch	0.093	1.108	0.270	0.213	2.196	0.030
Taste	0.096	1.060	0.291	-0.086	-0.717	0.475
Smell	0.101	1.015	0.312	0.084	0.699	0.486

whereas paranormal belief variables, when controlled for covariance, did not significantly predict SSEg scores, along with sight, touch, taste, and for one sample, smell, transliminality remains a significant and strong predictor ($\beta = .41$ to $.47$, p 's $< .01$) of general paranormal experience (SSEg). Of the five senses, hearing was the only sense variable that significantly predicts SSEg ($\beta = .15$ to $.25$, p 's $< .05$), suggesting that as hearing experience increases to the degree to which it is perceived as coming from external sources, paranormal experiences (to a small degree) increases.

Similarly, when examining the same model above while predicting paranormal experiences during ritual

practice (SSEr), a nearly identical pattern emerges where transliminality is the most robust predictor of paranormal experience ($\beta = .32$ to $.33$, p 's $< .01$). However, with paranormal experience from ritual, none of the sense variables significantly replicated across both samples, with significant prediction occurring independently for hearing and touch in one sample only (See Table 5)

Magical Practice, Transliminality, and Psi Performance

For the following analyses we note the following changes from above. First, the following analyses represent a sub-set of the existing sample that further decided to participate in psi testing. As such, we note that sample size varies, and overall sample size prohibits the above random split sample analytical comparison method. We report sample size for all subsequent analyses. Second, we note that for actual significance testing of putative psi performance, we provide both parametric and non-parametric analyses for the analyses. We note here that overall skew and kurtosis for the psi samples were within normal ranges (< 1 in almost all cases), but Wilk's Shapiro tests of normality were significant. Given the somewhat surprising and significant findings, we thought it best to perform both types of analyses so that the reader can compare potential differences between parametric and non-parametric analysis, noting that any statistical test is simply a "best applied model" which fits to lesser or greater extent to the actual data.

With regards to significance testing, we examined participants who performed the psi test without ritual and a subsequent represented measures group who attempted a magical ritual to purposefully influence their psi results. Results can be seen in Table 6, and we note for the reader that the psi-app has an expected score of 1.75/7 (i.e., 25%), and individual sample sizes can be seen in the Table.

Magical practitioners who performed the psi test 'normally' without any ritual showed highly significant psi-missing effects ($x = 1.477$, $t = -2.82$ $p = .0058$; Sign

Table 6. Parametric and Non-Parametric Tests of ESP Scoring for Both Samples and High and Low Transliminality

Sample	<i>x</i>	Expected	t-test			Wilcoxon	
			<i>n</i>	<i>t</i>	<i>p</i>	<i>V</i>	<i>p</i>
Open ESP, Whole Sample	1.477	1.75	107	-2.82	0.0058	1932	0.0026
Open ESP, High Tranliminality	1.435	1.75	23	<u>-1.79</u>	0.087	84	0.105
Open ESP, Low Transliminality	1.647	1.75	34	-0.51	0.614	247	0.384
Ritual ESP, Whole Sample	1.57	1.75	48	-1.41	0.165	447	0.209
Ritual ESP, High Transliminality	1.824	1.75	17	0.42	0.682	69	0.747
Ritual ESP, Low Transliminality	1.083	1.75	12	-2.91	0.014	10	0.021

test: $V = 1932, p = .0026 - 17.6\%$ difference). Comparing the psi performance of high versus low transliminals (via splitting the mean score), we found trending psi-missing for high transliminals ($x = 1.435, t = -1.79, p = .087$; Sign test: $V = 84, p = .105 - 17.7\%$ difference). In contrast, low transliminals in the open psi condition showed an average hit rate which only trended towards psi-missing ($x = 1.647, t = -0.51, p = .61$; Sign test: $V = 247, p = .384 - 6\%$ difference).

For magical practitioners using magic to influence their psi scoring, the overall sample was not significant for psi ($x = 1.57, t = -1.41, p = .165$; Sign test: $V = 447, p = .21 - 10\%$ difference). Splitting the ritual for psi sample into high and low transliminality again per the method above, we find that high transliminals in ritual practice showed non-significant psi results ($x = 1.824, t = -0.42, p = .682$; Sign test: $V = 69, p = .747 - 4.2\%$ difference), but noting that compared to other group scoring, this group provides the highest average towards the expected hit rate of .25. Finally, low transliminals again showed significant psi-missing ($x = 1.083, t = -2.91, p = .014$; Sign test: $V = 10, p = .021 - 38.1\%$ difference), noting again the lowest average of hitting (approximately 38% lower than the expected score) occurred with this group.

To examine these effects further, we computed individual correlations between self-reported confidence and focus scores during the psi test, transliminality and SSE general and ritual scoring, years magic was practiced, and our earlier daily practice variables. Table 7 gives the results, and individual sample sizes for these analyses are also reported there. In terms of the open psi sample who completed the test as normal results were general-

ly inversely related to psi scoring, noting two trends (focus during the test, $r = .17, p = .08$, and visual meditation practices, $r = -.21, p = .11$), and one significant relationship (insight through dreams, $r = -.248, p = .05$). In terms of the ritual sample, those who performed magic to alter their ESP scores, associations were generally positive, with only one significant predictor of psi scores (engaging in daily ritual, $r = .42, p = .02$).

Manipulation Checks

Finally, noting both significant correlations with ESP scoring, as well as significant trait and variable associations with the E-PSI app, we thought it worthwhile to perform some additional tests and checks in order to provide the reader with tests for more mundane explanations of these findings. We note here that the E-PSI app was vetted both before and after data collection in terms of ensuring that order switching of options was constant in order to ensure that choices were never presented in the same order for any Esp trial selection nor individual Esp trial. Similarly, an examination of the participants' data shows that all participants completed seven trials per session of the application. Further, examination of the participant's choices across potential trials is approximately equivalent in both conditions (Non-ritual trial $df(27) \chi^2 = 6.477, p = .99$; Ritual trial $df(27) \chi^2 = 2.02, p = .83$). However, we would note that participants themselves choose their individual trial randomly, and also select and perform each esp trial randomly. Thus, a non-equal selection of specific trials would represent the intuition or choice of the participant, and not a procedural issue with the ESP application.

Further, using ChatGPT Data Analyst, we were able to approximate a bootstrap function of the ESP application, using the exact same procedural method of the ESP app but substituting the random number function provided by ChatGPT for the participant. A subsequent random generated method of 1000 trials represented the computer randomly picking one of four trials, subsequently randomly picking a correct answer from the selected trial, and then repeating the former process seven times (see Appendix for Chat GPT instructions used). This process produced a bootstrapped mean of 1.696, which was not significantly different from the expected mean value of 1.75 with high power provided by the hypothetical sample size ($df(999), t = -1.55, p = .12$). Finally, we did not test for order effects, as our magician sample only completed two tests, and at varying times and locations of their choice. As such, time gaps between these tests would intuitively preclude test fatigue and, of course, the fact that the test only takes approximately 10 minutes to complete.

Table 7. Correlations of Traits, Magical Exercise Variables, and ESP Confidence and Focus with ESP Scoring

	ESP Scores With Ritual			ESP Scores Open Trial		
	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>
Confidence	-0.17	0.26	47	0.07	0.472	107
Focus	-0.07	0.64	47	0.17	0.08	170
Transliminality	0.16	0.37	31	-0.173	0.17	63
SSE General	0.17	0.36	30	-0.283	0.035	56
SSE Ritual	0.04	0.84	28	-0.17	0.2	58
Years Practicing	-0.04	0.87	19	-0.16	0.28	47
Prayer	0.081	0.66	31	-0.14	0.27	63
Vis Meditation	0.172	0.36	31	-0.21	0.11	63
Eastern Mediation	-0.21	0.26	31	-0.138	0.28	63
Daily Rituals	0.42	0.02	31	-0.179	0.16	63
Daily Inspirations	0.26	0.158	31	-0.128	0.31	63
Dreams	0.09	0.61	31	-0.248	0.05	63
Introspection	-0.1	0.595	31	-0.096	0.46	62



DISCUSSION

We assert that this preliminary but unprecedented study of devoted magic practitioners yielded highly congruent findings with transliminality, anomalous experiences, and their interaction with the psychological or mystical role of magical practice. Indeed, the results both broadly and specifically seem to confirm our hypothesis that ritual magicians are essentially “trained transliminals.” Specifically, three key findings emerged that we discuss in detail in the subsections below:

- a) Magical practitioners clearly engage in specific practices irrespective of differences in ideological adherence to specific traditions, deities, or spirits. These practices, as assessed by our seven practice items, are, in fact, mildly related in a positive manifold to transliminality, as well as both general and ritual SSE anomalous experiences.
- b) Magical practitioners profile as high transliminals, and the relationships between transliminality and anomalous experiences in this cohort are more robust than compared to published benchmarks for a general “haunting” experience. Moreover, magicians’ transliminality levels significantly predict both their sensory experiences of anomalous phenomena and daily practice methods.
- c) As an initial claim, associations between introspection and critical thinking about mental images and meditation collectively support our HP-S (i.e., transliminal dis-ease) model in the sense that these practices significantly relate to transliminality scores and anomalous experiences with this magician sample. Thus, given the lifestyle of magic that the current sample endorses, initial evidence suggests that mental techniques are used by magicians both in ritual and practice to manage, engage with, or control mental or “spirit” intrusions, which are typically reported as intrusive and non-controllable in haunt experience populations.

Magical Practiced Skills and Translinality

Describing magic practitioners as “trained transliminals” should follow evidence of the foundational mental exercises that characterize their ritual practices. Our initial foray into understanding these practices appears very promising. To be sure, our analyses reveal a positive associative triad, where transliminality predicts both anomalous experiences (per the SSE) and routine magical prac-

tices and vice versa. Notably, Western-style meditation (i.e., guided imagery), daily ritual, day-to-day insights, and perhaps more importantly, self-examination of spiritual and magical insights all mildly but reliably predicted transliminality scores and both anomalous phenomena experienced daily, as well as within the context of purposeful, invoked practices or rituals. Indeed, even years of practice predicted transliminality across both samples, albeit with somewhat small effect sizes. Of course, these results offer no insights into which of these variables are triggers in terms of temporal sequence or psychosocial development. However, we underscore that transliminality was a robust predictor of anomalous experiences as measured by the SSE accounting for approximately 10 to 16 % of SSE scores, while the bulk of internal/external experience across the five senses did not significantly predict SSE scores (with one or two exceptions, see Results). Based on previous research on haunters (e.g., Ventola et al., 2019; Laythe et al., 2022), we interpret these trends to mean that transliminality is a foundational mediating variable to anomalous experiences (induced or spontaneous), with subsequent beliefs or practices moderating these anomalous experiences.

Building on this interpretation, the positive relationship between these practices and transliminality, as opposed to a dampening effect, suggests that magicians have learned to “lean into” the myriad of images, thoughts, impulses, and general sensory information facilitated by their thin mental boundary structures. Thus, we posit from the data and the authors’ personal experiences that attempting to stifle or ignore these internal impulses and external intrusions is likely not the best method for managing the positive or negative impacts of transliminality. Rather, openly engaging with the “flood” of affect, imagery, ideation, and perception with cognitive-behavioral methods to distance oneself and thereby control or cope with the mental stimulation while simultaneously interpreting it appears to be a benefit to the practice of magic.

Although we did not assess our participants’ mental health histories or current status, there are broader comparisons that support our conclusions and interpretations. First, the stable and positive relationship between years of magic practice and the various high-strangeness variables is telling. Previous work examining transliminality and paranormal belief in an HP-S context clearly supports that anomalous experiences can be very frightening and unsettling and in the case of case studies that persist over time (e.g., Houran & Laythe, 2021; Laythe et al., 2022), these events are linked to dis-ease states. In contrast, ritual magicians purposefully seek anomalous experiences; in fact, many of our participants have

engaged with such phenomena for over five years. The comparison is obvious, “haunters” typically become distressed and want the anomalies to cease, whereas ritual magicians desire these same anomalies and thus use mental exercises in the guise of spiritual practices to deliberately facilitate them for personal benefits. The sense of control generated by these spiritual exercises over said phenomena assists the magician in what we might propose as “transliminal mental intrusions” aiding the magician to find benefit in a spiritual and paranormal practice. In essence, the difference between the *transliminal haunter* and the *transliminal magician* is the mental practices that give magicians a sense of control over anomalous phenomena *regardless of their psychological or parapsychological nature*.

Accordingly, a clinical psychology view might suggest that the generic methods of magical practice would possibly help to relieve the “dis-ease” generated by persistent haunt-type episodes (i.e., ostensible cases of HP-S). However, to examine this possibility, future studies would need to first give participants (both haunters and magicians) reliable mental health and wellness measures to examine potential differences, and subsequently design a program to apply these techniques to haunter participants to see if dis-ease decreases. Likewise, we are optimistic about the application of these intervention strategies and note anecdotally that some of the present authors have non-professionally advised individuals with ostensible HP-S to engage in specific meditation or visualization exercises, and generally, these percipients have reported improved mental health and less stress while continuing to practice them.

However, astute readers may recall that our explanation here of mental imagery, focus, and introspection as methods for manipulating and controlling transliminality and paranormal experience is in stark contrast to older work in seances (e.g., Batchelder 1966; Batchelder, 1984; Owen & Sparrow, 1976). Notably, Batchelder (1984) suggests that ‘witness inhibition’, ‘belief over doubt’, and ‘ownership resistance’ from participants are known to inhibit a séance and subsequent production of the phenomena. All of the above would suggest that the focus or introspection of participants in facilitating a paranormal event (i.e., magical ritual) would be inhibited by the overt focus of the participant.

Our response to this is that both may be the case, depending on *who* is involved in the magical process. One of the core differences in the present sample versus previous séance work (e.g., Batchelder, 1984; Owen & Sparrow, 1976; Laythe et al., 2017) represents the difference in comfortability with anomalous phenomena, and more obviously, confidence and a sense of control as a func-

tion of repeated exposure to high-strangeness, as well as belief and faith in mechanisms meant to control the phenomena. In essence, magical practitioners see anomalous phenomena as ‘not at all irregular’, while college students with significantly less experience both intellectually and practically with anomalous phenomena would be naturally hesitant, akin to learning not to flinch when a baseball is thrown at you when batting. A second factor that might explain a difference in these methods is that Batchelder’s (1984) concept of ‘ownership resistance’ infers that the participant is using internally based PK to produce the phenomena (inferring the phenomena is *neither* purely external nor an independent agent in terms of belief). Perhaps somewhat obviously, Magicians, in bulk, believe in the external agency of discarnate spirits. As such, the production of phenomena is not a function of the magician but the summoned spirit, alleviating the possibility of ‘ownership resistance’ via the belief that the phenomena produced are not due to them.

To be clear, the current work does not suggest that Batchelder’s (1984) guidelines are incorrect. Indeed, for college students and laypeople interested in these kinds of practices, Batchelder’s guidelines may be correct. However, magicians represent a much more experienced and trained population. Previous work (e.g., Laythe et al., 2022) shows that participants’ traits, beliefs, and environment all significantly contribute to the presence of paranormal phenomena. As such, it seems a reasonable hypothesis of creating the ‘ideal zone’ of paranormal experience is not constant and may represent different contextual and internal variables based on the constituency of the people engaging in ‘paranormal acts’.

Turning to transliminality and our measures of sensory experiences, we see an interesting pattern. The degree to which magic practitioners perceive their anomalous experiences as “internal and subjective” versus “external and objective” is significantly related to thin boundary functioning, with an approximate 5 to 10% shift towards externalization (depending on the specific sensory mode) in accordance with higher transliminality scores. To our knowledge, this type of effect has no precedent in the empirical literature so it is unclear whether it generalizes to other forms of “psychic” practitioners like remote viewers, mediums, healers, or even haunters. We do not aim to strictly “pathologize” high transliminals, but clinically speaking it does make sense that greater degrees of externalized perceptions would be associated with thinner mental boundaries, given the literature consistently linking transliminality to dissociative and schizotypal-related states (e.g., Escolà-Gascón 2020a, 2020b, Evans et al., 2019; Dagnall et al., 2010, 2022a, 2022b). Thus, this pattern might define transliminal experiences in ritual

magic settings as a form of induced dissociation or psychosis. However, we think this is a premature idea and instead suggest that the magician's condition as a "trained transliminal" provides a set of structures and controls by which the extreme or negative effects of high transliminality are essentially managed, if not prevented.

This assertion has some empirical grounding. For example, the mental practices of the magicians showed a positive relationship with introspection and evaluation of intrusive mental material, as well as greater degrees of transliminality with both the number of years a person has been practicing magic as well as visualization skills. We further suggest that visualization and, more importantly, critical evaluation and introspection of the mental states experienced by the magicians are part of the management skills which help transliminality to work for the practitioner rather than being dominated by its effects.

Magical Practice, Magical Ritual, and ESP

Psi researchers do not often have the opportunity to write this, but the outcomes on our psi tests with magicians both within 'everyday' and 'ritual' contexts showed shifts from the expected chance means of 4 to 38%, with both larger and smaller samples. While these results are significant, the twist is that they represented psi-missing as opposed to psi-hitting. Findings with ESP are complex in this case, noting that when asked to complete an ESP trial without preparation, the overall sample, and those with high transliminality show the greatest degree of statistically below chance scoring. In contrast, when ritual is applied towards ESP, the results invert, showing low transliminals show a highly below chance score on ESP tests. In essence, the entire trend of the analysis was a powerful trend towards psi-missing, but differed in terms of scoring as a function of the use of ritual or not. One obvious conclusion is that adding a ritual to the ESP trial definitively changed how performance on ESP tasks occurred. Of course, this raises the questions of why significant effects and why they occurred opposite the expectations one might have for seemingly "exceptional subjects" for experimental psi. There are several issues to consider on this point.

For instance, under a mechanistic or materialist model, there should be no significant effects of any kind either with a standalone guessing psi test or any of our individual differences, magical practice variables, or the use of ritual. However, our findings clearly suggest that systematic variables influenced the ritual magicians' performance on the random selection task. That said, an obvious and mundane explanation would be an arti-

fact with the application itself, although several reasons cause us to reject this hypothesis. Earlier validation work (Laythe & Roberts, 2023) and subsequent field research (Lange et al., 2023) with this same test showed select albeit less powerful and in sometimes non-significant positive outcomes. This indicates that the E-PSI app can yield above-chance results (i.e., psi-hitting). Also, several individual participants in this study obtained hit rates of five out of eight, showing that scores above the expected two hits were certainly possible and confirmed. As such, the available evidence and our post-hoc tests of the ESP application (see Results) does not suggest an error in the technology.

Further, there were magical practice variables that showed trends towards psi performance (i.e., degree of focus during the test and visualization skills used on a regular basis), as well as significant magical practice variable predictors (i.e., dreams and daily rituals). And yet, these same variables coincided with psi-missing. These patterns are perhaps unsurprising. Although the direction of the effect was counterintuitive, Laythe and Roberts (2023) showed that attentional focus and related variables significantly contributed to the variance in a positive direction with psi scores from this application. A few significant psi scores (hitting or missing) could result from chance or error, but this explanation becomes increasingly complicated or infeasible when traits and practices that are proximally distal from the actual psi task nonetheless significantly predicted psi scores in the same direction as the findings. In other words, we again see an interplay of transliminality, the practice of magical mental skill-sets, and psi scoring. Hence, our dataset preliminarily validates magical practice as a producer of genuinely anomalous effects as measured by a controlled testing procedure.

So, why did the magicians score in the direction opposite to both their intent and traditional psi test expectations? One obvious explanation is a general dislike for a smartphone-based psi test, which markedly differs in setting and action from the traditional environment and cues and outcome expectations inherent to ritual environments. As we have stated in previous work (Laythe et al., 2018, 2021, 2022), anomalous experiences involve the right person in the right environment, and we note here that the enchantment (Drinkwater et al., 2022; Houran, Lange, & Laythe, 2022; Lange & Houran, 2021) created by prayers, invocations, and rituals produce different "environmental vibes and psychological moods" compared to the more cognitive and tech-based process on a smartphone screen. As such, we might posit that the method of psi testing did not fit well with the ritual conditioning or simple aesthetic preferences of a "magically-minded"

sample. Simply stated, participants may have reacted negatively (consciously or unconsciously) to our method of psi testing. From occult traditions, most esotericists (and psychologist esotericists) such as Israel Regardie, who was partly responsible for popularizing Western magical methods to the public, agree that some parts of magic work in the unconscious rather than the conscious mind (Regardie, 1995a, 1995b). Thus, the psi-missing observed here might have represented a conscious willingness to influence psi in a positive direction, although the unconscious (typically deemed much more powerful with magical acts) inherently disliked the technological approach. However, this is purely speculative, and resolving the question would involve enlisting the help of magicians who are willing to repeat the process used here with various “enchantment friendly” and “enchantment unfriendly” methods of measuring putative psi performance.

On the other hand, allowing for the possibility of discarnate agency as magicians routinely invoke various spirits and entities to elicit certain outcomes, one could posit that our psi-missing findings are a “Trickster effect” (i.e., Hanson, 2001; Kennedy, 2024; Storm, 2023). From this perspective, the magicians wanted psi-positive scores, but the attitude of the attending “spirits” towards the psi test was not aligned, so the result was significant, but there were opposite effects. This is a highly culturally laden interpretation of our findings, but we should note that Trickster effects are well-known and documented in the domain of magical practices, notably when using spirit entities to perform magic. Whether one engages with the belief system or prefers a more anthropological approach, many grimoires that deal with the assistance of troublesome entities (i.e., demons) conspicuously include large amounts of protections, threats, and words of power to gain the obedience of such agents. Factually, the entire grimoire tradition might be summarized as “getting unruly or dangerous spirits to do what you require without any horrible side effects that can psychologically (and perhaps physically) scar you for life.”

Regardless of the explanation, the magicians’ overall psi performance independent of and as a function of rituals shifts their performance on ESP. Future research should nevertheless strive to replicate our findings and resolve their meaning. In the interim, the present data unquestionably support the ideas that practicing magicians can perform outside of chance expectations on a controlled test of putative psi, and by proxy, this ability is seemingly facilitated by their daily mental practices, focus, and transliminality levels.

Limitations and Caveats

Although we used a split-sample design to show that the relationships between these variables replicate, we were unable to use this method for the psi tests. Consequently, we do not deem our approach or data either to be comprehensive or conclusive. We also note that the magicians provided a wide variety of information about their various belief systems, methods, and affiliations, which we are precluded from analyzing in this paper due to space constraints. Given that we found specific techniques of magic were significantly related to scores on transliminality, anomalous experiences (per the SSE), and tests of putative psi, it is not too large a leap to suggest that certain ritual methods used by certain magical groups and cultures might work better than others. Unfortunately, pursuing this intriguing possibility requires additional methods and an entirely different and structured set of analyses that is beyond the scope of this paper. However, we hope to engage with these spiritual and cultural aspects of magic in future research. To the above, additional research past our initial exploratory map of magical practice may benefit from detailed analysis where factor analysis, or Rasch scaling (Bond & Fox, 2015) are employed to look at item and sub-scale overlaps, in conjunction with differences in types of practice, which may remove some false trails and error variance likely present in the current work.

We would again emphasize that the current paper is not by any stretch ‘historically comprehensive’. From above, there may be benefits to a deep historical examination of cultural magical lineage to define nuances in magical practice. However, we do not believe that this type of examination would negate the broader claim which our data supports here. Notably, that there are common mental and daily practices which appear as significant predictors of transliminality, ESP scoring, and paranormal experience, which occur across a wide domain of pantheons and magical practices represented in the sample we examined.

To use a relaxed analogy, magic appears to represent a structure similar to martial arts training. Of course, there are myriad techniques, ‘styles’, and discrete historical lineage in martial arts, many of which at first glance appear very different in appearance from each other. Yet, there is much more commonality behind the surface, as all styles have mandatory techniques for body and strength development, mental focus, and breathing towards the practice of the martial art. Of course, more obviously, a fist to the throat versus a stylized straight handed chop to the throat are both strikes to the throat designed to disable the individual. Our initial evidence here supports the above analogy with magic; the stylized method may look very different to the unfamiliar, but the underlying

techniques and goals appear the same.

From a sociocultural perspective, our initial findings might suggest that cultural distinctions in magic from social identity theory (Tajfel & Turner, 1979), Marx's (1972), or Durkheim's (Pickering, 2009) perspective may represent purely cultural delineations of 'us' versus 'them', or at least these divisions of magic occur as a function of traditional beliefs inherent in the specific magical practice, but notably, and using the current work, these divisions do not appear to be a function of the 'meta-method' within magical practice. For example, a cursory examination of prayer in Catholic or Protestant religions show a definitive procedure by which one asks God for help or a beneficial outcome. Examination of the procedure of both show that the root practices both within magical communities, and in contrast to exoteric religions, are both similar and formulaic. Indeed, the issue of religion and magic becomes more complex as most western grimoires invoke the same Judeo-Christian God as the source of the magician's power (Mathers, 1975, for an example). As such, finding clear and empirically methodological distinctions between exoteric and esoteric practice will remain difficult until extensive research and nuanced cultural distinctions are examined in contrast to commonalities of procedure.

Finally, and related to the above, paranormal belief results did not mirror previous work (i.e. Ventola et al., 2019) in the sense that PB in both of its factors was not significantly related to either transliminality or paranormal experience (i.e., the SSE). We believe this erratic response to the PB measure is a result of this particular sample disliking the wording (and perhaps the concept itself) of paranormal belief. Given current cultural norms, and the age of the original Tobacyck (1989/2004) measure, we do not find this surprising. While noting that Rasch scaling provides excellent psychometric properties for the revised PB scale (i.e. Lange et al., 2000), we would note that there are strong protestant Christian undercurrents within both sub-scales of this measure. This is particularly true with items within traditional paranormal belief, which ask if a participant believes in a devil, or Heaven or Hell. One does not have to make much of a leap to see that these items secure paranormal belief only within a Judeo-Christian framework. As such, we do not find it surprising that the current sample, with diverse and overlapping beliefs in non-Christian ideologies and belief systems, found difficulty in engaging with these items. We might humbly argue that a more ideologically neutral paranormal belief measure may serve these types of participants more fully.

Implications and Applications

To our knowledge, this paper offers an unparalleled analysis of practicing occultists/ritual magicians to better understand the nature and efficacy of this oft-ignored practice. This group comprises a seemingly "perfect sample" to examine whether specific conditions, training, or individual differences reliably facilitate psi-type outcomes. Our preliminary research ultimately suggests that magicians are high transliminals, which helps to explain their reports of anomalous experiences within and outside of ritual contexts, as well as their beyond-chance performance on a computerized test of putative psi. However, scientists and magicians alike might ask what to do with these findings. Our response is that whether a skeptical scientist or a believing magician, the methods and analyses presented here, in the least, show that practice, focus, and transliminality do, in fact, "matter" with spontaneous anomalous experiences and psi in experimental settings.

We hope this exploratory work serves as a valuable proof-of-concept to the magic community that science can be applied to the study of ritual outcomes and likewise potentially guide practitioners towards beneficial attitudes, habits, and outcomes in this context. For scientists interested in anomalous phenomena in both the field and laboratory settings, we would contend that our findings show that the methods employed by magicians might apply equally to other mystically- or psychic-oriented groups to facilitate psi performance or anomalous experiences by focusing on the exceptional subject's traits, practices, and general congruence with the immediate environment.

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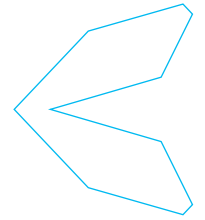
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Appendix: Chat GPT Data Analyst Instructions

I am attaching a mostly empty data-set with the following variables:

ESP1.1 ESP1.1C CNC1.1 ESP1.2 ESP1.2C CNC1.2 ESP1.3 ESP1.3C CNC1.3 ESP1.4 ESP1.4C CNC1.4. ESP1.1C, ESP1.2C, ESP1.3C, and ESP1.4C contain the correct answer. For each row I want you to: 1. Randomly select either ESP1.1, ESP1.2, ESP1.3, or ESP1.4 and place a random whole number (1,2,3,4) in the row cell you randomly select. Do this for all rows until you reach row 102. 2. Once the former is completed, look at each row where you placed a random number and compare this number against the corresponding 'correct' answer (for ESP1.1, compare against ESP1.1C, for ESP1.2, compare against ESP1.2C, for ESP1.3, compare against ESP1.3C, and for ESP1.4 compare against ESP1.4C). If the numbers match code 1, and if the numbers do not match, code 0 into two columns to the right of the ESP1.1, ESP1.2, ESP1.3, or ESP1.4 column you selected in each row. Now repeat this process six more times and provide an output and summary of the amount of 1's you obtain.



ESSAY

Why William Shakespeare Did Not Write the Works Attributed to Him, and Why Sir Henry Neville Did

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HIGHLIGHTS

Many literary scholars think “William Shakespeare” was a pseudonym, with some evidence suggesting the real author was Sir Henry Neville (1563–1615)—an important English courtier, politician, and diplomat.

ABSTRACT

This article complements those published in the special issue of this *Journal* (Summer 2023) about the Shakespeare Authorship Question. After making some important points about why William Shakespeare could not have written the works attributed to him, the present paper argues the case for Sir Henry Neville (1563–1615) as the real author. Of particular interest is the fact that Neville’s handwriting, in letters and in annotations in books, appears to be identical with the handwriting in “Hand D” of the play *Sir Thomas More*, the only manuscript source believed to be in the handwriting of “William Shakespeare”. Twelve key points are then advanced as to why Neville was the real author of Shakespeare’s works.

SUBMITTED November 13, 2024
ACCEPTED March 16, 2024
PUBLISHED June 30, 2024

KEYWORDS

Shakespeare authorship question, Sir Francis Bacon, Edward De Vere (Earl of Oxford), Robert Devereux (Earl of Essex), Sir Henry Neville, Sir Henry Savile, Sir Henry Wriothesley (Earl of Southampton), Essex Rebellion, First Folio, London Virginia Company.

<https://doi.org/10.31275/20243243>

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INTRODUCTION

The contributors to the 2023 August issue of the *Journal* outlined many of the main reasons why skeptics have questioned whether William Shakespeare was the real author, but there are other salient reasons as well that must be considered. In particular, there are simply vast areas of our continuing ignorance about the most important aspects of his life and career, which even cen-

turies of research by eminent, dedicated scholars have been unable to clarify. These vast areas of ignorance do not concern simply another famous writer, but the man who is arguably the most intensively studied human being in history. Literally, every scrap of paper from his lifetime has been identified and read by scholars in order to find something—literally anything—which bears in any way on his life and career, and especially on his life and career as a playwright and poet. Despite these her-



culean efforts, nothing new is ever found. The countless biographies of Shakespeare, many by university professors and experts on Elizabethan and Jacobean history, which pour off the printing presses with the regularity of clockwork, contain not one new fact about the 'Bard of Avon'. Arguably, the last significant documented fact directly relating to William Shakespeare's life was discovered in 1909 by the American husband-and-wife team of amateur researchers William and Hulda Wallace in the Public Record Office in London, namely a transcript of a lawsuit brought in 1612 by a Stephen Bellott against his father-in-law, Christopher Mountjoy; Shakespeare had been a lodger in Mountjoy's house in the City of London, and was called to give evidence. Shakespeare said, in effect, that he could remember nothing about the matter, signed his name on the court deposition, and walked out. That was it; since then, nothing has been discovered in any source or archive about William Shakespeare that was not already known in 1909. As has been repeatedly noted by those who have questioned Shakespeare's authorship, not a single book known to have been owned by Shakespeare or a single letter, diary, or literary document written by him has ever been discovered. No handwritten manuscript of a play or poem written by Shakespeare has ever been found, the sole exception being his contribution to the play *Sir Thomas More*, written by five different authors referred to by scholars as "Hands"; Shakespeare's portion is known as "Hand D." Shakespeare's plays contain numerous eye-witness descriptions of Italian cities and towns, descriptions which are regarded as accurate, although Shakespeare is not known to have ever left England (Roe, 2011; Waugh, 2013). Shakespeare's plays and poems contain references to around 500 printed works, several in untranslated foreign languages, which must have required the author to have owned many books or had access to a large library, but neither has ever been found. It should also be remembered that despite the fact that Shakespeare was traveling back and forth between London and Stratford-on-Avon, acting night after night on the stage, and journeying throughout England with his acting company on horseback or in some primitive cart on unpaved roads in English weather, he somehow managed to write thirty-seven plays, several long poems, and 154 Sonnets in only about twenty-three years, a feat which beggars belief.

In the absence of any new evidence and with vast areas about which nothing is known, all of the "biographies" of the Bard have had to improvise and, in effect, invent or embroider accounts about most aspects of Shakespeare's life, filling in the gaps with imaginative exercises or expanding upon a few lines of alleged facts about him. An excellent example of this is how the young Shakespeare

came from Stratford-upon-Avon in Warwickshire in the English Midlands to London. The period from about 1580, when Shakespeare was fifteen or sixteen, until 1592 when he was attacked in print by a rival dramatist, Robert Greene, are years when nothing whatever is known for certain about his life, apart from the fact that in 1582 he married Anne Hathaway, and had a daughter born in 1583, and twins, a boy and a girl born in 1585, all in Stratford-on-Avon. What Shakespeare was doing during these years, and, in particular, how and why he moved to London and became a writer and an actor, remain unknown, despite centuries of searching for convincing answers. In the absence of real evidence, two rival and completely dissimilar theories have been put forward. The earlier and better known, first advanced in the late seventeenth century, is that "Shakespeare was much given to all unluckiness in stealing venison and rabbits, particularly from Sir [Thomas] Lucy who oft had him whipped and sometime imprisoned and at last made him fly his native county to his great advantage." Another, independent account of this alleged matter, published in 1709 by Nicholas Rowe, stated that Shakespeare had "fallen into ill Company ... and made a frequent practice of Deer-stealing ... more than once robbing a Park that belonged to Sir Thomas Lucy of Charlecote near Stratford. For this he was prosecuted by that Gentleman ... [and] he was obliged to leave his business and family in Warwickshire ... and shelter himself in London." Sadly for the veracity of this oft-repeated story, there is no record of any such prosecution brought by Lucy against Shakespeare, while it was found by a more recent researcher that although Sir Thomas Lucy owned a rabbit-warren (where rabbits were bred for food) near Stratford, his deer park was actually located at Sutton, near Tenbury, Worcestershire, located fifty-seven miles from Stratford (Shakespeare, 2007).

The other, entirely different account of Shakespeare's "lost years" is that he spent two years as a combination of tutor and entertainer in the households of two Roman Catholic members of the Lancashire gentry: Alexander Houghton primarily but also the latter's relative Thomas Hesketh. In other words, the young Shakespeare did not flee to London as a "deer poacher" but went in precisely the opposite direction, northwards. According to this theory, Shakespeare received a legacy in Houghton's will, where he was referred to as "William Shakeshafte". Proponents of this theory, especially the distinguished scholar Honigmann (1998), in his *Shakespeare: The "Lost Years"* pointed out that John Aubrey (1626-1697), writing many years later, stated that in his youth Shakespeare was a schoolmaster in the country, and that one of Shakespeare's teachers at Stratford Grammar School, John Cottom, came from Preston, Lancashire and was a

Roman Catholic. It was suggested that Cottom procured this position for his talented young student. Shakespeare was, thus, from a secretly Catholic family. After two years in Lancashire, according to this theory, Shakespeare joined the acting company named for Lord Strange (later the Earl of Derby), its patron, a major landowner in Lancashire, and, as a result, became an actor in London. This version of events has many deficiencies. There is no evidence that Shakespeare was a Roman Catholic, having been baptized, married, and buried as a conforming Anglican, nor that he was the “William Shakeshafte”—a common surname in Lancashire—mentioned in the will, nor that he was ever a member of Lord Strange’s acting company. Furthermore, as noted, Shakespeare must have been in Stratford in November 1582 when he was married and, presumably, in 1583 and 1585 when his children were baptized. Honigmann (1998) discovered, however, that there was an authentic oral tradition in the Houghton family, predating its appearance in print, and that, as a youth, William Shakespeare worked for them. Since, apart from this account, there is absolutely nothing to connect Shakespeare with Lancashire, this oral tradition should be given some credence. On the other hand, even if true, that he worked for two years in Lancashire, of course, does not prove that he wrote the plays—there is nothing in this account to suggest that he wrote anything—only that he worked in Lancashire as a youth.

These competing and contradictory theories, made without real evidence, are typical of most biographical accounts of Shakespeare’s life. While these deficiencies in Shakespeare’s biography are serious, they are arguably less important than the anomalies which arise if the facts of the generally accepted chronology of Shakespeare’s plays and poems are compared with what is actually known of his life. It is very often the case that the dating of Shakespeare’s plays cannot be meshed in with the known events of his life. Three important examples will illustrate this. Around 1601, there was a great change in the nature of Shakespeare’s oeuvre. At that point—and not earlier—he wrote the Great Tragedies, starting with *Hamlet* in 1601–1602, *Othello* in 1602, and *King Lear* and *Macbeth* in 1605. To account for so great a change in his outlook, one which transformed him from a very good playwright to arguably the greatest figure in literature, it would appear that some traumatic event must have occurred to the author around 1600–1601. But no mainstream biographer has ever suggested a plausible explanation for this great change. Orthodox biographers normally account for it by delayed grief for the death of his son Hamnet, who died in August 1596, five years earlier, although in the interim Shakespeare allegedly wrote such comic works as *The Merry Wives of Windsor* (c.1598) and *As*

You Like It (c.1599). (Hamnet Shakespeare was named for his godfather, Shakespeare’s neighbor and friend Hamnet Sadler (d. 1624), a baker in Stratford; it has no connection with the play *Hamlet*.) Alternatively, the great change of 1601 was the result of grief for the death of his father, John Shakespeare, who died in September 1601. At that date, however, William Shakespeare was thirty-seven; men of that age do not normally go to pieces when their father dies; William Shakespeare was apparently not close to his father and did not follow in his trade as a wool merchant and glove maker. It is also sometimes explained, with greater accuracy, by Shakespeare’s sympathy for the Earl of Essex, who was executed in 1601, and for his followers, especially the Earl of Southampton, Shakespeare’s supposed patron, despite the fact that no evidence exists that Shakespeare had any connection with the Essex rebels or that the Essex rebellion had any effect upon the activities of the Lord Chamberlain’s Men, Shakespeare’s acting company. In fact, no good explanation has ever been given to account for the great alteration in Shakespeare’s oeuvre, or the deep pessimism apparently underlying it. But once Sir Henry Neville is regarded as the real author, this mystery is resolved.

Equally opaque are the reasons for the wording and meaning of the famous Dedication of *Shake-spears Sonnets*, published in May 1609:

To. The. Onlie. Begetter. Of.
 These. Insuing. Sonnets.
 Mr. W.H. All. Happiness.
 Promised.
 By.
 Our. Ever-Living. Poet.
 Wisheth.
 The. Well. Wishing.
 Adventurer. In.
 Setting.
 Forth. T.T.

There are so many mysteries and anomalies about this small but universally known volume of poems that one hardly knows where to begin. Rather curiously, its title is *Shake-spears Sonnets*, with Shakespeare’s name hyphenated, not *The Sonnets of William Shakespeare*. “T.T.” is always taken to be Thomas Thorpe, the book’s publisher, although it is not the publisher of a book who writes its dedication, but its author, who signed the dedication with his initials rather than his full name. Who is “Mr. W.H.”? In what sense was he the book’s “onlie begetter”? And what does this term mean? Even more basically, the book consists of 154 sonnets (with another longer and little-known poem, *A Lover’s Complaint*, printed in the

book following the sonnets). Were they published with the knowledge and approval of William Shakespeare or without his knowledge and approval? If the latter, how and from whom did Thorpe obtain *all* of the 154 sonnets, and why did their author not object? If they were obtained from their author with his knowledge and approval, why did he not sign his full name or write its dedication? Finally, what is meant by “the well wishing adventurer”, and how was this relevant to the publication and sale of this small volume of poetry? Each of these questions has been asked countless times over the centuries, with no satisfactory answers ever given. However, if Sir Henry Neville is posited as the author of *Shake-spears Sonnets*, these mysteries are clarified.

The third authorship mystery which should be noted here is William Shakespeare’s knowledge of the Strachey Letter, one of the main sources for *The Tempest*, a play first performed in November 1611. This work was certainly based in significant measure on what was later published as *A True Reportory of the Wracke and Redemption of Sir Thomas Gates, knight*, a lengthy letter reporting on a ship sent out to Virginia by the London Virginia Company in 1609, which was wrecked on Bermuda, and whose crew subsequently and almost miraculously returned to England. The letter was written by William Strachey (1572–1621), one of the survivors, and is known as the Strachey Letter. It existed in manuscript from 1610 but was not published until 1625. The Strachey Letter is unquestionably one of the main sources for the dialogue of the play, with dozens of passages in *The Tempest* clearly drawn from the Letter (Cawley, 1926; Culliford, 1965; Kuhl, 1962; McCrea, 2005). However—and here is the mystery—the Strachey Letter could only be read by directors of the London Virginia Company, who took an oath to keep the Letter confidential and not let anyone else read it (Clarke, 2011). But William Shakespeare had no connection of any kind with the London Virginia Company. He was not among the 500 or more men who bought a share in the Company (costing £12 10 shillings) and was obviously not a director of the Company. Yet he had clearly not only read the Strachey Letter but was allowed to copy out significant passages from it to use in a play. How was this possible, and why was he not stopped? And why would William Shakespeare have had any particular interest in this Bermuda shipwreck or in the affairs of the London Virginia Company, when he had no connection or association with it? No one knows, and, again, many theories have been proposed, especially that he was shown the Letter to read and copy out by a director with whom he was friendly, although the Letter was presumably kept at all times in the offices of the Company. Once again, this mystery is resolved if Sir Henry Neville is posited as the

play’s author. It should be noted that well-known Oxfordian researchers have argued that the “Strachey Letter” was not used as a source for *The Tempest*. The most important work that argues this contention, at length and with many contemporary sources is Stritmatter and Kositsky (2013).

Why Not Sir Francis Bacon or the Earl of Oxford?

Because so much of our knowledge of William Shakespeare is dubious—indeed, little more than guesswork—by the middle of the nineteenth century, a number of writers and researchers had become convinced that someone else, someone far better qualified than William Shakespeare, had written the plays and was their real author. The first alternative “candidate” proposed was Sir Francis Bacon (1561–1626), the great lawyer and philosopher who served as Lord Chancellor (as Lord Verulam) from 1617 till 1621. Although Bacon was apparently well qualified by his learning to write the plays, as the ‘real Bard’ he has many deficiencies. His pompous and dense prose style is nothing like Shakespeare’s; he was a strong opponent of the Earl of Essex and his supporters, while the real author—whoever he was—was apparently sympathetic to Essex. Bacon lived until 1642, although Shakespeare wrote his last play in 1613, leaving nearly thirty years of silence from the prolific author of the plays. Although he was first proposed over 150 years ago, no real evidence has ever been found in support of the Baconian theory.

Since the case for Bacon is unconvincing, other “candidates” have been put forward. Today, apparently, the most popular alternative Bard is Edward De Vere, 17th Earl of Oxford (1550–1604), who has a large following. De Vere was certainly associated with the theatre, was a poet, and apparently a playwright (although none of his plays survive, some of which, given his birth date, must have been written before “Shakespeare” began writing plays around c. 1590), highly regarded, it seems, in his lifetime—although some of this praise may well be due to his aristocratic rank. Since none of the plays he certainly wrote before c. 1590 survive, one cannot judge his ability as a writer or his resemblance in style to Shakespeare. The case for Oxford also has many blatant deficiencies. In particular, Oxford died in 1604, while, according to all mainstream scholars, no fewer than eleven of Shakespeare’s plays, among them *Macbeth*, *King Lear*, *Anthony and Cleopatra*, and *The Tempest*, were written after 1604. Oxfordians (naturally) claim that these plays were actually written before 1604 and later “released” and attributed to William Shakespeare. Apart from the inherent implausibility of this suggestion—why were these great classics not presented in Oxford’s lifetime?—there is compelling

evidence that at least several of the plays were irrefutably written after 1604 and contain clear references to events that occurred after Oxford's death. *Macbeth*, probably written in 1605–1606, contains (Act II, Scene III) an apparent reference to the Gunpowder Plot of 5 November 1605 and to its Jesuit leader Henry Garnet (1555–1606); *The Tempest*, dated to 1611, was, as spelled out above, clearly derived in substantial measure from the Strachey Letter of 1610; *Cymbeline* (Act V), usually dated to 1610, contains apparent references to the newly discovered four moons of Jupiter. These were first seen by Galileo in November 1609, using a telescope. Galileo reported his discovery in a book in Latin published in the same year. The moons of Jupiter can only be seen through a telescope, which was invented in 1607 or 1608 (Falk, 2014; Usher, 2019). Sir Henry Savile (see below) had a copy of this book in his library. Savile was a noted astronomer who endowed the Savilian Professorship of Astronomy at Oxford; it was probably read soon after its publication by his close friend Sir Henry Neville, who also had a keen interest in astronomy. Finally, it should be noted that Thomas Heywood (1573–1641), an actor and author, in 1612 wrote *An Apology For Actors*, in which he attached an “Epistle” to the printer William Jaggard, protesting against the incorporation of two *Love Epistles* in his reprint of *The Passionate Pilgrim*, a work attributed to Shakespeare, and stated that “the Author I know [was] much offended with M. Jaggard that (altogether unknown to him) presumed to make so bold with his name” (Heywood, 1841, p. 62). The [unnamed] “Author” must, therefore, have been alive in 1612. Oxfordians respond to these points by claiming that the chronology of the plays was different from that accepted by scholars, a claim for which there is no evidence and is contrary to common sense. In addition, Oxford was born in 1550, and was thus around forty when the earliest plays by “William Shakespeare” were written. Oxfordians claim that earlier plays—now lost, with similar titles to those by “Shakespeare”—were actually written by Oxford and later revised, but, again, this implausible assertion is unsupported by any evidence.

Sir Henry Neville, the Real Author

The backgrounds of Sir Henry Neville (1563–1615) and William Shakespeare were very different. Neville was descended from several aristocratic families, although his father, also Sir Henry Neville (and later he himself) was “merely” a knight rather than a peer. Just as importantly, our man's mother was the niece of Sir Thomas Gresham, the great London merchant who founded the Royal Exchange and Gresham College, London. Our Sir Henry Neville was born in 1563 (not, as often claimed, in 1564). Most

of our man's childhood was spent at their country residence, Billingbear House, at Waltham St. Lawrence, Berkshire, about nine miles from Windsor. He was educated at Merton College, Oxford, where he was the star pupil and later close friend of Sir Henry Savile (1549–1622), known as the greatest Classical scholar of his time and also a significant mathematician and astronomer. In 1578–1582, Neville accompanied Savile and other young, well-born students on a four-year tour of the Continent, visiting many towns, including many places in Italy, which were later the settings of some of Shakespeare's plays. In 1581, Neville traveled through northern Italy, visited Padua, Venice, and Florence, and then passed through Vienna. Incidents in *Love's Labour's Lost* and *Measure For Measure* have been traced to France in 1578 and 1582, respectively, when Neville was in that country. In 1583, he traveled to Scotland. There is, of course, no evidence that William Shakespeare ever left England.

To his contemporaries, Neville was noted for his erudition and Classical learning. He served as an MP, mainly for New Windsor, during most of the period between 1584 and his death. He was also a landowner and (unexpectedly) a cannon manufacturer. He served as Ambassador to France in 1599–1600. On a short return visit to London, he became involved in the Essex rebellion and would probably have become Secretary of State had it succeeded. When it failed, he and his friend, the Earl of Southampton, were sent to the Tower of London and stripped of their titles, with Neville sentenced to remain there until he paid an enormous fine of £10,000. (Neville's role in the Essex rebellion was unknown until Southampton revealed it at his trial.) In the Tower, Neville could still write, and basically do anything he wished except leave. When Queen Elizabeth died in 1603 and James I came to the throne, both were released and their titles restored. Neville expected high office, but the King apparently took a dislike to him and he never held any important position. He also had to find ways of restoring his diminished fortune, and became a director of the London Virginia Company. He was also involved in other political matters, generally favoring a “mixed Constitution” in which the Monarch, Parliament, and the people would all possess powers. He died on 10 July 1615, aged only fifty-two. It will be seen that Neville was an almost exact contemporary of William Shakespeare, who lived from 1564 until 1616. The similarity in their dates has helped to disguise Neville's role, although it also means that he did not die too early (unlike Oxford) or too late (as did Bacon) to have been the real Bard.

Although the theory of Neville as the real author is only twenty years old, a significant number of telling points have been amassed by researchers, strongly sug-

gesting that he was the real author. One point which should be made clear is that pro-Neville researchers always accept the standard chronology of Shakespeare's works and never invent a new one because the accepted chronology is contrary to the known facts of their candidate's life. The chronology of Neville's life and career always mesh in perfectly with the accepted dating of Shakespeare's works. The most significant evidence about Neville as Shakespeare includes the following points:

1. Neville's Library and Handwriting

In 1780, the large library accumulated by Neville and his successors was taken from Billingbear Park to Audley End near Saffron Walden in Essex, the home of Lord Braybrooke, Neville's descendant. A handwritten list of the books taken to Audley End was compiled at the time, and is now held by the Berkshire Record Office. It contains the book titles and author's names of about 500 books in many languages, of which about 150 were published before Neville's death in 1615. Ken Feinstein, a Neville researcher who has discussed these books on his blog "Ken Feinstein's Neville Research", has shown that some of these books are known as the sources of some of Shakespeare's plays, although it is unclear if these particular volumes were those actually used by Neville when writing. Many of these books have handwritten marginalia, apparently written by Neville. These books and others were also discussed in the book I co-authored with John Casson, *Sir Henry Neville Was Shakespeare: The Evidence* (Casson & Rubinstein, 2016). Perhaps the most striking evidence that exists in favor of Neville as Shakespeare are photographs of the handwriting in "Hand D" of *Sir Thomas More*, the only surviving manuscript of Shakespeare's literary works, and photographs of the same words in Neville's handwritten letters and the marginalia in books that he owned. Examples of these are given in Casson and Rubinstein (2016), and also in Casson's (2010) *Much Ado About Noting*. These are reproduced at the end of this article. The Worsley Manuscripts include papers and annotated books in Neville's handwriting which were inherited by his descendants in the Worsley family and are currently held in the Lincolnshire Record Office. The examples given here show that the words in "Hand D" and in other writings of Neville are identical and were obviously penned by the same man. Many other examples of this can be given, especially similar photographs of the identical words in "Hand D" and in Neville's letters, compiled by the Neville researcher John O'Donnell.

2. The Great Change of 1601

As noted above, a great change in Shakespeare's oeuvre

occurred in 1601, when he wrote the Great Tragedies, beginning with *Hamlet* in 1601 and *Othello* in 1602. Nothing in the known life of William Shakespeare provides a cogent explanation for this alteration. In complete contrast, the life of Sir Henry Neville offers a convincing explanation: Neville became involved in the Essex rebellion and spent three years in the Tower of London alongside his friend the Earl of Southampton. Clearly traumatized, there he wrote several of his most famous plays, as well as other works. That *Hamlet* is "about" the Essex rebellion, with the Earl of Essex depicted as Hamlet, was first suggested by Winstanley (1921) in her *Hamlet and the Scottish Succession*. One point of interest is that Neville inherited an ordnance and canon manufacturing business from his great-uncle, Sir Thomas Gresham. Many of his canons were shipped to Elsinore on the Danish coast. See James's (2008), *Henry Neville and the Shakespeare Code*. Similarly, *Othello* is really "about" Essex and Elizabeth. In my opinion, it has nothing to do with race relations. Othello was depicted as a Moor purely to disguise the fact that he was writing about the Earl of Essex, who was, like Othello, a famous military leader. Iago is clearly based on Henry Cuffe, Essex's secretary, who lured Neville into joining the ill-fated conspiracy. Another product of this time was the poem *The Phoenix and the Turtle*, written in 1601. Again, it was obviously based on Elizabeth and Essex and mourns the fact that they could not have collaborated for the betterment of England. It was buried in a longer book consisting of many poems, *Love's Martyr*, edited by Robert Chester, again to disguise the fact that Neville was writing about the Queen and the executed traitor. Many critics suggest that the poem was "about" Sir John Salusbury (1567–1612), a Welsh political figure and minor poet, but his life bears no relationship to the facts which may be inferred from the poem (Casson & Rubinstein, 2014; Honigmann, 1998). Salusbury was a noted opponent of Essex, which makes it likely that Neville buried his poem in a collection of poems "about" the Welshman, where the poem's strongly pro-Essex intent would not be readily deduced. Neville's mood of creating great tragedies and great tragic figures continues with *Macbeth* and *King Lear* and then apparently becomes more balanced.

3. Shakespeare's Silence at the Death of Queen Elizabeth

When Queen Elizabeth died in 1603, her life was praised in print by every significant author and poet of the day—with one exception: William Shakespeare. His silence about the Queen's death was remarked upon at the time, but characteristically, no mainstream biographer has been able to account for it. During her reign, William

Shakespeare rose from the son of an unknown provincial wool merchant to a well-known and respected author, who was certainly not poor. Shakespeare had no rational reason not to pay tribute to her. However, if Neville was the real author, his silence, writing either as “William Shakespeare” or under his own name, has a rather good explanation: he was incarcerated for an indefinite period in the Tower of London (along with the Earl of Southampton) for his role in the Essex rebellion, and was, indeed, fortunate not to have been made shorter by the head for what was regarded as treason. Queen Elizabeth took a particular dislike to the treachery of the greatly respected Ambassador to France and was only persuaded with difficulty to spare his life. Neville’s real thoughts about the Queen were expressed in Sonnet 107, almost certainly written shortly after he was released in 1603, where he lamented his “confined doom” in the Tower of London.

4. *The Northumberland Manuscript*

The so-called Northumberland Manuscript is a faded and charred folio of papers held at Alnwick Castle in Northumberland, the seat of the Dukes of Northumberland. On its front cover, the name “William Shakespeare” has been repeatedly written. According to the scholar Burgoyne (1904), who was the first to discuss it in print, it was owned by Sir Henry Neville. Also written on it are the name “Neville” and the family’s motto *Ne Vile Velis*. Burgoyne dated the manuscript to 1596–1597. Its cover also contains the earliest known references to William Shakespeare as a playwright: before 1598, all of his plays were published anonymously. Just below Neville’s name are the words “Rychard the Second” and “Rychard the Third”, as well as other references to Shakespeare’s works. The folio was apparently meant as a wrapper for other works, including several essays by Sir Francis Bacon. Its provenance before it was discovered in the nineteenth century is unknown; possibly it was brought to Alnwick by a descendant of Neville who had married into the Duke of Northumberland’s family. Short of a handwritten autobiography by Neville, this is clear evidence that he was “William Shakespeare”.

5. *The Encomium of Richard III*

In 1603, apparently while both were still imprisoned in the Tower of London, the Earl of Southampton copied out by hand a book titled *The Encomium of Richard III*, which was written by William Cornwallis the Younger (Kincaid, 1977). (Southampton’s handwritten copy is held by the British Library.) Cornwallis’s book was one of the first works to depict Richard III not as a diabolical villain but as a wronged and able ruler. Southampton’s hand-

written copy includes a flowery dedication by “Hen. W.” to Sir Henry Neville. The relevant question is just why Southampton would care whether Richard III was a monster or a saint. Southampton was Neville’s closest friend. The answer is obvious: Southampton knew of Neville’s career as a playwright, thought that his depiction of Richard III as a villain was quite wrong, and wanted to set the record straight. It is very important to note that, so far as anyone knows, Southampton did *not* copy out *The Encomium* and send it to William Shakespeare, the play’s supposed author, but only to Neville, and despite the fact that Southampton was allegedly Shakespeare’s “patron” (for which no evidence exists). Even if Southampton did have another copy of *The Encomium* sent to William Shakespeare—for which, again, no evidence exists—it is a mystery why he also had a copy prepared for Sir Henry Neville, who had no known connection with the play. First published with William Shakespeare given as its author in 1598, the play was reprinted as by Shakespeare in 1602. It is likely that Southampton may have read the 1602 edition and then written out the *Encomium* while he and Neville were both in the Tower. (On the *Encomium* see the Introduction to Kincaid, A. N. (Ed.). (1977). *The encomium of Richard III: By Sir William Cornwallis the younger*. Turner & Devereux.)

6. *Shake-spears Sonnets*

Some of the many mysteries about this renowned volume were set out above. While much remains opaque—and will always remain so—a great deal can be clarified if it is supposed that Sir Henry Neville rather than William Shakespeare was their real author. First, the circumstances and meaning of the famous Dedication becomes clear. The Dedication is signed “T.T.”, which is always taken to be Thomas Thorpe, it’s publisher. But why would the publisher, rather than the author, of a book of poems, write its dedication if its author was still alive? Why would its publisher dedicate the book to a “Mr. W. H.”, described as its “onlie begetter”? How did Thorpe obtain all the 154 sonnets printed in the book, and from whom, given that these must have been written over a long period of time and addressed to many different recipients? And why did Shakespeare not object to their publication? (As seen above, in 1612, only three years later, “Shakespeare” objected to the publication of someone else’s poem without his permission.) In my view, only one person could have owned copies of all 154 sonnets: their author, just as only he could legally authorize their publication. Thus, Sir Henry Neville was certainly the author of the book’s Dedication as well as of the sonnets themselves. Since Neville’s endeavor throughout his life was to remain anonymous, he signed the Dedication as from “T.T.” (and not from

Thomas Thorpe, who may well not have given his permission to use his actual name). Similarly, Neville may have lacked William Shakespeare's permission to use the latter's name for any works other than plays, and so titled the book *Shake-spears Sonnets* rather than *The Sonnets of William Shakespeare*. "Mr. W.H.," the likely subject of some of the sonnets, was almost certainly Neville's close friend Henry Wriothesley, Earl of Southampton, in remembrance of the three years the two spent together in the Tower for their roles in the Essex rebellion, when they were stripped of their titles, making Southampton simply Mr. Henry Wriothesley. Their reversed initials, W.H. rather than H.W., probably was a private joke between them. By "onlie begetter," Neville may well have meant that it was Southampton who advised him to have his *Sonnets* published for others to read.

That Neville was the author of the sonnets also fits in extremely well with wider but highly relevant events which occurred at the same time. On 20 May 1609 *Shake-spears Sonnets* was recorded on the Stationer's Register (i.e., was officially published). On 23 May 1609, King James officially approved the Charter of the London Virginia Company. A few weeks earlier, on 2 May 1609, Neville's eldest son, also named Henry, married Elizabeth, daughter of Sir John Smyth (or Smith), at St. Margaret's Lothbury Church in the City of London. Smyth was an MP, a wealthy landowner, and a City merchant. The dedication of the *Sonnets* was almost certainly connected with the official launch of the London Virginia Company three days after their publication. Apart from the references in the dedication to "the well-wishing adventurer"—an "adventurer" was an investor in a risky business venture (echoed today in "venture capital")—at the same time (Revd.) Robert Gray published *A Good Speed to Virginia*, based on a sermon he delivered at his church, St. Benet Sherehog (sic), where he served as its rector from 1606 until 1612. This work's dedication reads:

To the Right Noble and Honourable Earls, Barons, and Lords, and to the
 Right Worshipful Knights, Merchants, and Gentlemen, Adventurers to the
 Plantation of Virginia, all happy and prosperous success, which may either
 augment your glory, or increase your wealth, or purchase your eternity ...
 Your Honours and Worships in all affectionate well-wishing. (Gray, 1969, p. 314)

It seems clear that the author of the *Sonnets'* dedication drew on Gray's work. The strangely named St. Benet Sherehog, located at the center of the City of

London, was near the offices of the London Virginia Company. It seems likely that many of the directors and other officials of the Company heard Gray's sermon or read his work, a theological justification for the colonization of Virginia that was directed specifically at the directors of and shareholders in the Company. As noted above, William Shakespeare was not a director of the Company, and had no connection with it. Similarly, Thomas Thorpe ("T.T.") had no connection with the Company. In complete contrast, Neville was a director of the Company and had a strong financial interest in its success. The publication of the *Sonnets* three weeks or so after the marriage of Neville's eldest son to the daughter of a wealthy landowner and merchant also strongly suggests that the first seventeen sonnets apparently addressed to a young man and advising him to marry "for love of me" and stating "you had a father, let your son say so" suggests that these Sonnets were written by Neville to his son, advising him to marry—which he did. The fact that these sonnets were published first in the collection also suggests that the publication of the book was a celebration of his son's fortunate marriage.

Although the real meaning of a great many of the sonnets remains unclear, and probably always will, the identification of Sir Henry Neville as their author provides clarification of what was meant by many of them. A particularly striking example is the little-known Sonnet 81:

Or shall I live, your epitaph to make;
 Or you survive, when I in earth am rotten;
 From hence your memory death cannot take,
 A though in me each part will be forgotten.
 Your name from hence immortal life shall have,
 Though I, once gone, to all the world must die;
 The earth can yield me but a common grave,
 When you entombed in men's eyes shall lie.
 Your monument shall be my gentle verse,
 Which eyes not yet created shall o'er-read,
 And tongues to be your being shall rehearse,
 When all the breathers of this world are dead.
 You still shall live, such virtue hath my pen,
 Where breath most breathes, even in the mouths
 of men.

There, in the words "your name from hence immortal life shall have ... Your monument shall be my gentle verse", Neville is clearly and certainly addressing William Shakespeare, whose "name ... immortal life shall have". This is a precise description of what actually occurred: William Shakespeare became known from that day as the immortal writer, while Neville was totally unknown until recently. *If* the author of this sonnet was

not Neville but William Shakespeare, the poem makes absolutely no sense: it is William Shakespeare's "name" which has unquestionably achieved "immortal life", not someone else's. Stratfordians try to explain this—if they ever try—with explanations that are clearly unconvincing. For instance, the Folger Library's online presentation of this sonnet states that "the poet, imagining a future in which both he and the beloved are dead, sees himself as being completely forgotten while the beloved will be forever remembered because of the poet's verse." But the author of this sonnet has said nothing about his addressee being his "beloved", and, even more importantly, has emphasized that it is the "name" of the addressee which will have "immortal life". It is precisely that name which is never stated in this or any other sonnet. In the Arden Shakespeare edition of *Shakespeare's Sonnets*, edited by Katherine Duncan-Jones, Katherine claims that it is the "fair youth" who is the addressee and whose "name" will have "immortal life"; once again, Sonnet 81 says nothing about a "fair youth", while again it is precisely the "name" of the addressee which remains unknown throughout the *Sonnets* (Shakespeare, 2016). The title page of this work states that "Shake-spear" was their author; Sonnet 81 clearly states that he will be given the credit, then and down the ages, for the real author's work.

The meaning of many other sonnets also becomes clear once it is known that Sir Henry Neville was their author. A very clear example of this occurs in Sonnet 107:

Not mine own fears, nor the prophetic soul
Of the wide world, dreaming on things to come,
Can yet the lease of my true love control,
Supposed as forfeit to a confined doom.
The mortal moon hath her eclipse endured,
And the sad augurs mock their own presage;
Uncertainties now crown themselves assured,
And peace proclaims olives of endless age.
Now with the drops of this most balmy time
My love looks fresh, and death to me subscribes,
Since 'spite of him I'll live in this poor rhyme,
While he insults o'er dull and speechless tribes;
And thou in this shalt find thy monument
When tyrants' crests and tombs of brass are
spent.

The lines "The mortal moon hath her eclipse endured" is almost always presumed to be a reference to the death of Queen Elizabeth in 1603, but the line "supposed as forfeit to a confined doom" has remained mysterious—that is, until it is realized that this is clearly a reference to Neville's release from the Tower (along with Southampton) by James I soon after the Queen died and he came

to the English throne. In contrast, William Shakespeare experienced no known "confined doom"; his status was not changed in any way by the accession of James I, the only exception being that his acting company, the "Lord Chamberlain's Men" then became the "King's Men".

Neville's family motto *Ne Vile Velis* ("Do not do anything base [or vile]") is clearly referred to in several of the sonnets and elsewhere. The clearest example is Sonnet 121, which begins:

Tis better to be vile than vile esteemed
When not to be receives reproach of being,
And the just pleasure lost, which is so deemed
Not by our feelings, but by others' seeing ...

The term "vile" seems very unusual in this context, and appears to have been employed because it has a special meaning to the author. (Nothing in this sonnet relates in any way to William Shakespeare.) Another significant use of this term is to be found in the two-line Latin quotation found at the beginning of Shakespeare's long poem *Venus and Adonis*, one of his earliest works, published in 1593:

Vilia mirentur vulgus, mihi flavus Apollo
Pocula Castalia plena ministret aqua.
This was translated into English by Christopher
Marlowe as
Let base-conceited wits admire vile things,
Fair Phoebus lead me to the Muses' springs.

The Latin lines used in *Venus and Adonis* have nothing to do with the substance of Shakespeare's long poem but must have made an impression upon Neville owing to their echoing of his name and his family motto.

Another sonnet which appears clearly to relate to Neville's life is Sonnet 35, which begins:

No more be grieved at that which though hast
done;
Roses have thorns, and silver fountains mud.

This sonnet was very likely to have been written by Neville shortly after he was sent to the Tower in 1601 and addressed to his fellow prisoner the Earl of Southampton, whose surname, Wriothesley, was pronounced "Rose-ly". At his trial, Southampton had stated that Neville was involved in the Essex Rebellion, something which had not been known before, leading to Neville's arrest and imprisonment.

7. *Three Men Who Knew the Truth—And Said So*

Three men, all of whom were close to Neville and his circle, actually stated that he was a notable writer or that “William Shakespeare” was a pseudonym. The first and most remarkable was John Chamber (1546–1604), a noted astronomer, philosopher, and opponent of astrology. Chamber was educated at Merton College, Oxford, where Neville was educated, and which was also the home of Sir Henry Savile, Neville’s mentor and friend. Chamber graduated with a B.A. from Merton in 1564 and was a Fellow of the College. He later became Canon of Windsor; Windsor is located eleven miles from Billingbear House, Neville’s country home. In 1583 Chamber was appointed to a committee convened to decide whether the Gregorian calendar should be adopted by England. Its other members were Savile and Dudley Digges, a relative by marriage of Neville, and the father of Leonard Digges, who wrote commendatory verse published at the beginning of the First Folio. When, in 1582, Neville and Savile returned from their four-year journeys around Europe, they had obtained for Chamber the manuscript of a work by Barlaam of Calabria, a fourteenth-century mathematician, which Chamber had wished to see. In 1600, Chamber published this book (in Paris, where Neville was Ambassador) as a printed work. It began with the dedication “To the most distinguished man, the Lord [sic] Henry Neville, Ambassador of the Most Serene Queen Elizabeth to the King of France.” The first three paragraphs of this dedication, translated from the original Latin, read as follows:

You may count your family and ancestors in long succession, so that kings’ high courts grant you access. Yet nothing in such great good fortune is so greatly deserving as the admirable quality of your character and the glory of your genius. It is with these qualities that you manage all your royal duties and conduct such high negotiations, and in the same spirit, leaving the earth behind, you joyfully enter the realm of the stars. Joyfully, you go to the stars. Where your many faceted qualities make you immortal and admit you amongst the gods before your time. Too little is your excellence seen by the common people of the earth, were it not for the kindly company of the Muses who sing through you, granting you various arts; the refined Muse of Comedy [“Thalia” in the original] giving you the eloquence to pour forth what you will”. (Casson & Rubinstein, 2016, p. 118)

This dedication is truly remarkable. Neville had written nothing whatever under his own name, let alone

“Comedies”, while William Shakespeare had already written eight of his Comedies. He did not write *Hamlet* until the following year. The last word given here is written in Latin as “Velles”, clearly a pun on Neville’s family motto, while the phrase “what you Will” (Will written with a capital “V”) strongly suggests that Chamber knew all about his pseudonym. The second Man in the Know was George Carleton (1559–1628), later Bishop of Llandaff and the Bishop of Chichester. From 1580 he was a Fellow of Merton College, Oxford, and from 1589 until 1605 was Vicar of Mayfield, Sussex, where Neville had lived from 1582 until 1598. After Neville’s death in 1615, Carleton married his widow Anne. In 1603 Carleton published *Heroici Characteres*, written in Latin verse, which was dedicated (in Latin) “To the most distinguished Knight, Henry Neville”, and which exhorted Neville to “grasp firmly the rewards of your achievements, you who will have the Muses to bear witness and your unspotted excellence to guide you.” The book contains two poems in Latin praising Neville, which refer to the Muses and to the theatre of Comedy and Tragedy. One of these poems asks (in Latin), “Who would deny that these should not be exalted on stage in Tragedy?” Again, Neville had no public connection with the “Muses” or with the theatre, a connection which would have been known only to his closest associates. The third member of the knowledgeable trio was (Rev'd.) Thomas Vicars (1589–1638), also an Oxford graduate and a noted theologian, who, in the 1620s, married Carleton’s daughter Anne; he had previously lived in Carleton’s household. In 1628, Vicars published the third edition of a book (in Latin) on Rhetoric. In this edition, he added the following to the original Latin text, which contained a list of noted English writers: “To these I believe should be added the famous poet who takes his name from shaking and spear” (“quassatione” and “hasta” in the original). Vicars thus apparently knew that “Shakespeare” was a pseudonym. He was, therefore, probably the first person to question the identity of the Bard of Avon, two centuries or so before anyone else. It will be seen that these three men all had close associations with Neville and with Merton College or his family and were thus in a clear position to know the truth.

8. *Connections Between Neville and Shakespeare*

Thomas Digges (1546–95) was a well-known astronomer and mathematician. He was married to Anne St. Leger (1555–1636), the daughter of Sir Warham St. Leger and Ursula Neville (d. 1575), Sir Henry’s cousin, a fact never made clear in previous discussions of the Digges family and Shakespeare. Digges was an important astronomer who did much to popularise the Copernican Theory of the

Solar System and who must have known Sir Henry Savile, Neville's mentor and another leading astronomer. Among Digges's sons were Sir Dudley Digges (1583–1639), an MP and a director of the London Virginia Company along with Neville, and also Leonard Digges (1588–1635), who, as noted, wrote a commendatory poem published at the beginning of the First Folio (FF). Its author was a close relative of Neville's. Leonard Digges was a minor poet who translated works from Spanish to English and an Oxford graduate (B.A., University College, 1603) who was close to others involved in the publication of FF, but the choice of Digges to write a commendatory poem for that volume seems somewhat curious unless it is known that he was a relative of the actual author. The plot thickens still further. After the death of Thomas Digges in 1595, his widow Anne in 1603 remarried Thomas Russell (1570–1634), who was—believe it or not—one of the two “overseers” of the will of William Shakespeare! (The other “overseer” was a local Stratford solicitor.) An “overseer” of a will was appointed to supervise the work of the will's executor or executors. The executors of Shakespeare's will were his daughter Susanna and her husband, Dr. John Hall. Shakespeare apparently did not trust them and appointed two other men to supervise their handling of the probate. Shakespeare, however, must have known and trusted Russell to have appointed him. If Sir Henry Neville was the real author, Shakespeare must also obviously have known him in order to allow Neville to use his name—for which he was presumably paid—and to act as his producer/director in the theatre. (See also below for an even more startling claimed connection.)

9. *The Performance of Richard II*

The day before the Essex Rebellion of 1600. Shakespeare's *Richard II* was performed at the request of participants in the rebellion, especially Gelly Meyrick, who would be hanged as a result of his involvement in the uprising. The play depicts the deposition of an English monarch. The request by Essex's supporters was made to the Lord Chamberlain's Men, Shakespeare's acting company, who were surprised at the request and described the play as “old and out of use”. Neville had agreed to support the rebellion five days earlier. If he was indeed the play's real author, it may well have been he who suggested its performance. He also knew that it had been initially performed by the Lord Chamberlain's Men rather than any of the other acting companies. Significantly, its supposed author, William Shakespeare, was never questioned, let alone punished, for the play's performance just before a treasonable insurrection. This fact has always puzzled historians. And neither were any of the other Authorship

“candidates”. Neville was fortunate not to be charged for requesting its performance, although he was severely punished for his role in the rebellion.

10. *“By the Dimme Light of Nature”*

A famous but mysterious passage in a poem concerning Shakespeare, apparently written by Francis Beaumont to Ben Jonson in 1615, the year of Neville's death, states that “our heirs shall heare/Preachers apte [sic] to their auditors to showe/ how farr sometimes a man may go/by the dimme light of Nature”. It is followed by the lines “What do you thinke of his/state, who hath now the last that hee [sic] could make/in white and Orange tawny on his backe/at Windsor?” This may well be a description of Neville's funeral at or near Windsor—Billingbear was eleven miles from Windsor—where Neville may have been laid out “in white and Orange tawny”, the colors of the livery worn by the English Ambassador to France, the highest position Neville ever held. (Until the Second World War, most European ambassadors wore a distinctive uniform or livery when on official diplomatic business.) (Bland, 2005).

11. *Ben Jonson, Gresham College, and the Publication of the First Folio*

Ben Jonson (1572–1637) knew Neville and wrote an Ode in his honor. Jonson contributed a commendatory poem to the First Folio (FF) and is often seen as its editor. On 20 October 1623, a month before the preliminary material in FF was believed to have been printed, Jonson appeared in the Court of Chancery to give evidence about the settlement of an estate. There, he signed himself as “Benjamin Jonson of Gresham College, gent.” What Jonson was doing at Gresham College is unknown; he had no known previous connection with this institution. Gresham College, which spread the “new learning” in England, was founded in 1597 at the will of Sir Thomas Gresham (c.1518–1597) and was physically located in Gresham's mansion in Bishopsgate in the City of London. Gresham, who founded the Royal Exchange and was a great London merchant, was the uncle of Neville's mother. Neville's father was the Chief Mourner at Gresham's funeral, and the Neville family had certain rights of appointment to its staff. It is a reasonable inference that Sir Henry Neville's family—presumably his eldest son—secured a post there for Ben Jonson (which Jonson greatly prized, as he very much wanted some academic recognition) as a reward for editing FF and fulfilling his wish to have Shakespeare credited with writing his works. Presumably, too, he was also paid for his efforts. It is otherwise difficult to see what Jonson was doing there.

The financial expenses of producing FF were colos-

sal. It was recently estimated that the cost of printing 750 copies of FF was around £250, an enormous sum, and in realistic terms, the equivalent today of hundreds of thousands or even millions of pounds, and was described recently by one historian as “enormously expensive” (Rasmussen, 2016). An estimated 333 copies would have had to be sold for the printer to break even (Rasmussen, 2016). Although it is now universally regarded as one of the most important works ever published in the history of Western civilization, it must not be forgotten that it was not necessarily so regarded at the time and might well have failed to sell more than a handful of copies, leaving its printers with enormous debts. The only precedent for the publication of the works of a playwright was the publication of Ben Jonson’s *Works* in 1616, which did not see a second printing until 1640 (Rasmussen, 2016). Moreover, the printer of FF, Edward Blount (1562–1632), was in severe debt at the time (Laoutaris, 2023). Agreeing to print what might have been an enormous flop at that time might well have bankrupted him, with all of the negative consequences of bankruptcy. It seems clear that a wealthy man or family *must* have paid the expenses of printing FF; these expenses might, perhaps, have been paid by Shakespeare’s acting Company, but no evidence exists for this, and it is unclear why they would have risked losing a good deal of money on their venture. Again, positing that Neville’s family paid for the printing of FF provides a clear explanation for what happened.

12. William Shakespeare and Sir Henry Savile

I now come to something so remarkable that one hardly knows what to make of it. I learned about this only recently and am grateful to the Neville researcher David Ewald for bringing it to my attention; Ken Feinstein, an excellent Neville researcher, also included it in his online blog some years ago, but I had missed it. In 1889 James Walter published an attractive, well-illustrated book, *Shakespeare’s True Life*. Walter (2000) noted that Shakespeare, when traveling to and from Stratford once or twice a year, “made a point of taking Oxford on his route, both going and returning, and that he on every such journey rested some days at [Sir Henry] Savile’s house in Oxford” (p. 61). Walter asserted that this statement was based on what “family traditions assert” and what he heard from the Roman Catholic order at Woolton Wawen, which is a suburb of Stratford-on-Avon. According to Walter (2000), Roman Catholic Cardinal Nicholas Wiseman (1802–1865) was also “satisfied that Shakespeare and Savile were in close intimacy during the period of the dramatist’s residence in London” (p. 61).

I will set out what I know about this truly extraordi-

nary claim. First of all, little could be found in any source about James Walter. He was born in 1817 in Bristol, the son of another James Walter, and died in January 1900 in Twickenham, Middlesex, a leafy suburb about ten miles from central London. By profession, according to several Censuses, he was a major in the 4th Lancashire Artillery Volunteers; it is unclear as to whether he had any form of employment besides being an officer in a Volunteer regiment. Throughout this time, he lived at Stratford Lodge, St. Peter’s Road, Twickenham. Walter had published an earlier volume about Shakespeare in 1878. Although his house and effects were auctioned off shortly after his death, and he must have been affluent, he does not appear in the English probate records, which is very unusual. Nothing else about him could be traced, and, in particular, nothing could be found about his interest in Shakespeare or his alleged knowledge of Shakespeare’s connection with Savile. Cardinal Wiseman—who, one hopes, lived up to his name—was born in Spain to English parents and, in 1850, was made the first Roman Catholic Archbishop of Westminster when the Catholic hierarchy was re-established in England. A controversial figure, he wrote a book about Shakespeare, published in the year of his death. Judging by his book, James Walter was apparently an enthusiastic Roman Catholic. In recent times, Shakespeare has frequently been depicted by biographers as a secret Catholic at a time when this was regarded in England as virtually treasonable, although he was (as noted) baptised, married, and buried as an Anglican. Savile, like Neville, was an emphatic Protestant; both men were attracted to the Earl of Essex because he, and they, wanted to ensure a Protestant succession to the throne after Queen Elizabeth’s death. Neither is known to have been particularly sympathetic to Catholics apart from the universal empathy expressed in Shakespeare’s works.

Let me now set out what I know and do not know about this extraordinary claim. So far as I am aware, it has never been set out or discussed in any of the endless number of biographies written about the Bard, or anywhere else. Secondly and centrally, it is difficult to believe that Savile, the greatest and most learned classical scholar in England, and William Shakespeare, who had no education past the age of thirteen or so, had any reason to meet, or the slightest interest in meeting. There is no evidence that Savile ever attended a play in London, or had the slightest interest in the theatre. It is even less likely that, if they met, Shakespeare lit up with enthusiasm when discussing Savile’s *magnum opus*, an eight-volume edition of the complete works of St. John Chrysostom, which occupied his time for years. It seems to me obvious that the real reason for Shakespeare staying with Savile, if this account is accurate, was to meet

with another Fellow of Merton College, Oxford, Sir Henry Neville, where they could discuss Neville's next plays, and where Shakespeare could give his opinion about whether Neville's suggestions were good ones, whether actors appropriate for the parts were available, what sources could be used, and so on, and where Shakespeare was probably paid for the use of his name and for acting as Neville's producer-director in the theatre. If Neville wanted to keep his authorship a secret, meeting in Oxford, where he was a Fellow of Merton College, was clearly superior to meeting in London. It seems very likely that Savile was also included in these discussions, both to give a second opinion about Neville's proposals and to suggest possible sources for future plays which would be known to Savile, the great Classicist; he thus may have been considerably more important in this venture than has ever been suggested—of course, no other source has ever suggested that Savile had any connection of any kind with Shakespeare's plays. Savile would certainly have known that Neville, his student and then close friend, was a secret playwright in common with the men discussed in Point 7 above. If all of this was indeed the case, we have just learned more about how "Shakespeare" actually operated in practice than had been learned in the previous four hundred years. Keep in mind that the suggestion that there were frequent meetings between Savile and Shakespeare is from a source written in the 1880s by an author who unquestionably believed that William Shakespeare wrote the works attributed to him.

What Walter wrote is, on the face of it, bizarre and unexpected, improbable, and arcane: there is nothing whatever to link Shakespeare and Savile, who is nevertheless specifically mentioned, and there is nothing whatever to link Savile with the London theatre or with Shakespeare's acting company or any other. Every literate person has heard of William Shakespeare, but everyone on Planet Earth who has ever heard of Sir Henry Savile could be seated together comfortably in any McDonald's on a Monday morning. It is difficult to see how anyone would or could invent this story. It is also crucial to note that Savile was Neville's intellectual mentor, while Neville was Savile's star pupil and close friend for over thirty years. In contrast, there is nothing whatever to link Savile with any of the other Authorship candidates. Anything known further about this claim should certainly be shared with other researchers.

DISCUSSION

It seems clear that the case for Sir Henry Neville is very strong and lacking in any aspects which must be explained away, often implausibly. For instance, one does

not have to explain how he could have written a play based on sources only available after his death, as supporters of the case for the Earl of Oxford, who died in 1604, have to do with *The Tempest*, written in 1611, and based, according to nearly every mainstream scholar, on the Strachey Letter of 1610. Apart from this, perhaps the most striking type of evidence in support of Neville is his handwriting. When this is compared with "Hand D" of Sir Thomas More, the only manuscript source widely believed to be in the handwriting of "William Shakespeare," it will be seen that they are identical and were certainly written by the same man. Positing Neville also, among other things, satisfactorily explains the reason for the great break in Shakespeare's oeuvre around 1601, when—and not before—he began to write his *Great Tragedies*, starting with *Hamlet* in 1601–1602. As noted, nothing is known to have occurred to William Shakespeare at that time to account for this radical break, while Neville's sudden and traumatic transformation from respected Ambassador to convicted traitor clearly explains and accounts for it. Similarly, Shakespeare's remarkable erudition and knowledge of Classical and recent sources in many languages, as well as his access to hundreds of books he used in writing his plays, are fully explained if Neville was the real author.

The case for Neville as Shakespeare has no obvious deficiencies, but, if he was indeed the real author, one must explain how he remained unknown as a "candidate" for the Authorship for so long. As this article points out, several of his friends and associates were, during his lifetime, aware of his authorship role, but no one suggested it in recent times, more than a century after Sir Francis Bacon was first proposed as the real author. Neville apparently wanted his role to remain a secret, probably because this fact would have impacted negatively on his political career. In addition, the fact that none of the "candidates" as the real author advanced in the last century or more has had their case supported by real and convincing evidence has almost certainly deterred further investigation by even open-minded scholars, who have concluded that there is no "authorship question," although in fact, the real author was hiding in plain sight, undiscovered.

Of the points made in this article, the most intriguing—it has been described to me as "mind blowing"—Point 12, that William Shakespeare met regularly in Oxford with Sir Henry Savile, Neville's mentor, and close friend. Since Savile had no known connection with Shakespeare or with the London theatre, and indeed has never previously been mentioned by anyone in connection with Shakespeare or his literary works, it is a reasonable inference that, if Neville was indeed the real author, the three men met regularly at Merton College, Oxford to discuss what "Shakespeare" would write next and be performed by his

acting company. This otherwise unknown and implausible connection between Shakespeare and Savile must surely be investigated in detail and, if successfully researched, may revolutionize our knowledge of the world's greatest writer.

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Appendix A: Casson and Rubinstein, *Sir Henry Neville was Shakespeare, p.15*

Capital C

The writer of Hand D used capital 'C' instead of the lower case, Melchiori noticed the occurrence of a capital 'C' instead of the lower case in the quarto of *Edward III*: "This may reflect the author's habit, noted in the three pages of Hand D ... of nearly always capitalising initial 'C'" not only in nouns and adjectives but also in verbal forms, a feature absent from the rest of that manuscript or in fact from any other manuscript of the time.⁵⁷ In Neville's 1601 letter the words 'Company', 'Counsaille', 'Conference', 'Contribucions' and 'Clothiers' on the recto and 'Coulour', 'Commodities', 'Content' and 'Complement' on the verso page are capitalised. None of these are at the start of a sentence.

Company and 'Counsaille', 'Conference' on the recto of Neville's letter 1601.

Bullom Commodities Complement

Coulour, 'Commodities', 'Complement': on the verso of Neville's letter 1601.

We can compare these with examples in Hand D:

Country and 'Command' in *Sir Thomas More*: Hand D.

Companys and Chartered in *Sir Thomas More*: Hand D.

But these show is that Neville closed his capital 'C' whereas in three of the above examples, Hand D left the top left corner open, perhaps due to writing at speed. Neville's here is a formal, neat italic letter to Robert Cecil. However in Neville's copy of *Leicester's Commonwealth*, Worsley MSS 47, there are many open capital 'C's:

Comon

Companie

Catholique

Appendix B: Casson, *Much Ado About Noting, p.72*

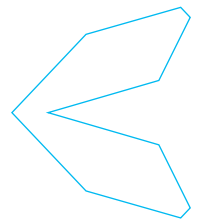
In *Sir Thomas More* the word 'him' is spelt 'hmi' three times in three lines and 'hmisealfe' once. (*The Sir Thomas More* manuscript is in secretary script whereas the Worsley annotations are in italic but this spelling is still clearly 'hmi'.)

Sir Thomas More: hmi (him, lines 10 and 8)¹²

Furthermore we can compare these with examples of 'hmi' in secretary script sections of Worsley MSS 47 (which were written perhaps 7 years earlier):

Worsley MSS 47, 2V: hmi; 6V

This opens the way for a palæographer to compare Neville's hand writing in his letters, Worsley MSS 47, Halle *Chronicle*, *Sir Thomas More* and Northumberland manuscripts.



ESSAY

The Hessdalen Lights Seen as the Aerial Counterpart of an Unsuspected Subsoil Phenomenon. Is the Earth Harboring a Multimouth Wormhole?

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SUBMITTED April 11, 2023

ACCEPTED August 17 2023

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20242965>

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HIGHLIGHTS

Certain types of mysterious aerial lights reported around the world might be caused by a small particle wormhole deep in the location's subsoil.

ABSTRACT

To date, Hessdalen lights (HLs) are misunderstood; nevertheless, these phenomena are surprisingly ignored by most of the scientific community. However, a few researchers, such as Erling Strand and Massimo Teodorani, have paved the right path by showing that experimental methods of physics can be applied to study HLs. Additionally, we believe that matter cannot simply be brushed aside and that it deserves a serious examination. Recently, we proposed a possible origin of HLs (Pascoli, 2021). The basic idea—a micrometric wormhole manifestation—is promoted here, and we suggest that the Hessdalen-type lights, seen pretty much everywhere in the world, may eventually be interpreted as a symptom of an unsuspected phenomenon deep in the subsoil of the considered site. The idea of a geological origin for the Hessdalen lights has already been proposed (Teodorani, 2004, 2014); however, this interesting suggestion is being reconsidered from an entirely new perspective. The present paper has to be seen as a working hypothesis, in which the main interests are to foster thinking on underlying physics and to suggest a full series of experiments that can be performed on these very enigmatic Hessdalen lights. Regardless of the strength of a hypothesis, the experiment is the final arbiter in science.

KEYWORDS

Hessdalen, wormhole, photoionization, model, magnetic field, magnetic monopole, ultrasound, geology, volcanism.

INTRODUCTION

In general, we believe traversable wormholes exist only in science-fiction movies.¹ Thus, so far, no one has proposed a method for large wormholes to form; without the hypothetical ingredient of negative mass or other phantom matter, wormholes are consubstantially unstable and not traversable within the strict framework of general relativity (Morris & Thorne, 1988; Blazquez-Salcedo, Knoll

and Radu, 2021 and references therein). In contrast, we know that these types of objects have naturally existed at the very beginning of the Universe, even though quantum fluctuations at the Planckian scale. In the very early (quantum) stage, the Universe should have a foam-like topological structure. The possibility thus exists that the inflationary phase has provided a natural mechanism for increasing such wormholes to a macroscopic size (Frolov



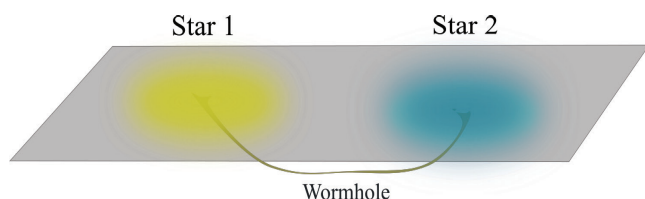


Figure 1. Illustration of galaxies (National Aeronautics and Space Administration (NASA)/European Space Agency (ESA) Hubble Space Telescope) connected from center to center by a wormhole, according to Dai and Stojkovic (2019, 2020).

& Novikov, 1998; Kirillov & Savelova, 2011). Admittedly, the question regarding the stability of wormholes is undoubtedly beyond the domain of general relativity. However, within other, more extended contexts, solutions for stable and even traversable wormholes have been tested. Gao, Jafferis, and Wall (2017) have emitted the hypothesis that quantum entanglement would provide an exotic ingredient needed for the stability of wormholes. Iqbal and Ross (2022) have attempted to construct traversable wormhole solutions using the negative Casimir energy. However, as recognized by the latter authors, the major conundrum is that it is very difficult to build wormholes larger than 10^{-21} m ! The existence of large, stable, traversable wormholes is not, however, definitely excluded (Maldacena & Milekhin, 2021; Blazquez-Salcedo, Knoll & Radu, 2021).

Thus, despite theoretical difficulties, an increasing number of astrophysicists believe that macroscopic wormholes could be existing in the real world. Wormhole gas that simulates dark matter has been envisioned (Kirillov & Savelova, 2011). Likewise, researchers have examined the possible existence of wormholes in the bulge and halo of the Milky Way (Rahaman et al., 2014; Bakopoulos et al., 2022; Das and Kalam, 2022). In addition, extradimensional connections between galaxies have been suggested repeatedly. In particular, some authors have questioned if the Milky Way center can reside in a wormhole instead of a black hole with its unwanted central point singularity (Dai & Stojkovic, 2019, 2020; Krasnikov, 2020). If a wormhole mouth indeed exists at the galactic center, the Milky Way could be connected to another very distant galaxy (Fig.1).

Figure 2. Stars connected from center to center by a wormhole, according to Dzhunushaliev et al. (2011).



Wormhole Connecting Two Stars

The case of two stars connected by a wormhole has also been examined (Dzhunushaliev et al., 2011). By following these authors, assuming first that stable wormholes exist in the galaxy, we can imagine that the mouths of these wormholes can act as condensation nuclei for the stars. In this case, the evolution of the two components of a binary stellar system would not only be influenced by the apparent gravitational forces between them but also by an extradimensional bridge connecting their central regions (Fig. 2).

If the existence of a galactic or a stellar wormhole is proven one day, we expect that there will likely be many types, most of which are microscopic or nanoscopic in size.² However, all the researchers quoted above attempt to find these exotic entities in very remote locations, whereas some of them may be at our fingertips. Especially Pascoli (2021) suggested that Hessdalen lights (HLs) can eventually be a manifestation of microscopic wormholes. We continue this idea here from an extended point of view, considering that, generally, some big ball lighting phenomena (BBLs) seen around the world could be explained by similar mechanisms.

Extradimensional Connection Between the Center of the Sun and the Center of a Planet in the Solar System

Is there an extradimensional connection between the center of the Sun and the center of a planet (the Earth) in the solar system? This idea is entirely speculative; however, it directly results from the suggestion made by Dzhunushaliev et al. (2011) regarding the connection of two stars by a wormhole. An important and obvious difference is that a planetary wormhole must be absolutely tiny compared to a stellar wormhole. By considering this statement, the question is then: What could be the maximal size of the mouth of the corresponding wormhole?

Gravity and Wormholes

Even though the question in itself deserves a deep examination (cf. note 2), we can consider that a wormhole and a black hole defined by the same mass parameter grossly produces gravitational effects of the same order of magnitude in the surrounding region. This point is illustrated by the fact that it is often difficult to know if we are handling a wormhole or a black hole (Dai & Stojkovic, 2020; Krasnikov, 2020).

Thus, for a star, the characteristic size, R_{WH} , of the mouth of the central wormhole can be approximately estimated by using the following relationship:

$$R_{WH} \sim R_{Schwarzchild} = \frac{2GM_{BH}}{c^2} \tag{1}$$

Where M_{BH} is the mass of the equivalent black hole, c is the speed of light, and G is the gravitational constant. We know the stability conditions of a star of a given mass. Then, it appears natural to admit that a hypothetical black hole or wormhole located at the center of a star necessarily has a mass much smaller than that of the host star, let $M_* \sim 2 \cdot 10^{30} \text{ kg}$. The condition is then:

$$M_{BH} \ll M_* \tag{2}$$

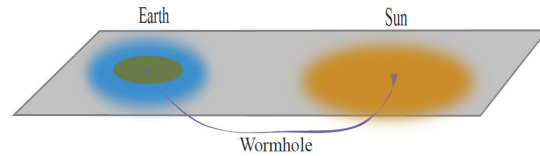
With (1), we obtain $R_{WH} \ll 1 \text{ km}$. Let us examine now the same situation but related to a planet. For the Earth, the mass is $\sim 6 \cdot 10^{24} \text{ kg}$. In this case, the largest size of the mouth of a hypothetical central wormhole is $R_{WH} \ll 10 \text{ mm}$.

Eventually, in the following paragraphs, our starting base is the existence of a Sun–Earth wormhole, assimilated to a microscopic channel allowing the passage of solar radiation and magnetic field but not traversable by matter. In addition, let us specify that the wormhole under consideration is assumed to connect two regions of space with a null gravitational field (the center of the Sun and the center of the Earth).

Heating the Inner Earth

The preceding result, based on very crude considerations, provides only a maximum radius. However, we must still drastically minimize this radius for geological reasons. It is well known that the external heat source of the Earth is the Sun. Energy from the Sun is transferred through space, passes through the Earth’s atmosphere, and reaches the Earth’s surface. However, the Earth is also heated from the inside, as attested by volcanism and plate tectonics. The sources are well known and listed: i. the radiogenic heat produced by the radioactive decay of isotopes, such as ^{235}U , ^{238}U , ^{232}Th , and ^{40}K , dispersed in the mantle and crust; ii. the residual heat from when our planet was first formed; and iii. various minor processes, such as tidal deformation and chemical segregation (Lay, Hernlund, & Buffett, 2008). Based on the arguments presented above, if the center of the Sun and that of the Earth are connected by an extradimensional path, another contributing source to the inner heating of the Earth could now come from a “mini-sun” located at its center, feeding it in energy.

Nevertheless, it seems that no place exists for a potentially detectable mini-sun because the value of the heat flux that comes from inside the Earth is well known,



Note. This figure is the same as Figure 2; however, in Figure 2, the wormhole is kilometric in size (here the size refers to the approximate dimension of the wormhole mouths, measured by an outer observer), whereas it is necessarily micrometric in size for a planetary wormhole

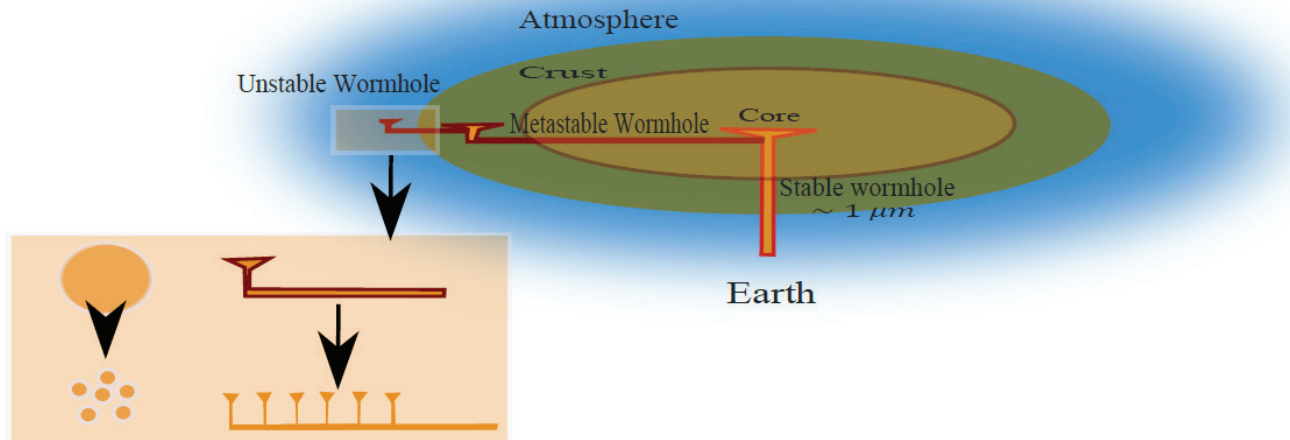
Figure 3. Hypothetical permanent microscopic wormhole connecting the center of the Sun and the center of the Earth.

and its sources are clearly identified. Then, we must imperatively impose a strong constraint on the magnitude of the power emitted by this mini-sun to make it undetectable. The flow of heat from the Earth’s interior to the surface is estimated at $5 \cdot 10^4 \text{ GW}$ (Davies & Davies, 2010). While the Earth’s surface heat flow is well measured, the various energy sources, such as radiogenic heating, secular cooling of the mantle, and heat flow from the core, are relatively poorly estimated by the models (The KamLAND Collaboration, 2011; Dye, 2012; Ruedas, 2017; Sammon & McDonough, 2022). Possibly the uncertainty in the models may increase to one-twentieth of the Earth’s internal heat budget (Davies & Davies, 2010). However, to be in agreement with future and more refined geoneutrino measurements, we have chosen to take a value largely smaller than 10^3 GW as an estimate of the corresponding uncertainty. This allows us to fix an upper limit for the size R_{WH} of the mouth of the central wormhole. By assimilating the mouth of this wormhole to a spherical black body of radius R_{WH} and with a temperature of $T_{WH} = T_s = 10^7 \text{ K}$, we can apply the well-known relationship:

$$P_{WH} = 4\pi \sigma R_{WH}^2 T_{WH}^4 \tag{3}$$

Figure 4. Multibranched wormhole (inspired from Emperan et al., 2021)





Note. This figure displays an architecture from the unique micrometric central wormhole (size $< 10^{-5} - 10^{-6} m$) to an unstable nanometric wormhole emerging in the atmosphere over a given site (the Hessdalen valley, for instance or still elsewhere).

Figure 5. Illustration of a possible hierarchy of wormholes in the Earth

where the Stefan-Boltzmann constant $\sigma = 5.67 \cdot 10^{-8} W m^{-2} K^{-4}$. We immediately deduce that $R_{WH} \leq 10^{-5} - 10^{-6} m$. We conclude that such a wormhole can easily reside at the center of the Earth in a permanent manner, i.e., since its formation 4.54 billion years ago (Fig. 3). Obviously, the condition that the size of the wormhole is microscopic is a prerequisite to satisfy both the gravitational criterion limiting the associated gravitational mass and, above all, the strong constraint imposed by the heat flow measurements. By considering these conditions, the presence of a wormhole of micrometric size at the Earth's center can remain unsuspected.

We start with the idea that a microscopic and undetectable wormhole mouth is readily present at the center of the Earth. However, a microscopic wormhole can be perceived as a fluctuating entity, and multiple branches can emerge from this central and permanent mouth. These branches can be formed from the division of the mouth. The idea of multimouth wormholes has been very

recently proposed and analyzed from a mathematical point of view by Emperan et al. (2021). Following these authors, it is possible to construct multi-mouth wormholes sufficiently long-lived to be traversable, even if detailed investigations are needed. Figure 4, which shows this division, is taken from this very interesting paper. A good image is that of a tree, with a trunk (a permanent wormhole connecting the center of the Sun and the center of the Earth) and branches connecting the trunk to another point in the subsoil of a given place in the Earth, from which a very tiny wormhole (seen here as the primary source of an aerial BBL) sporadically emerges into the atmosphere. This emerging entity will be termed a seed in what follows (see Fig. 6).

Hessdalen: Special or Accidental BBL Site?

In a preceding paper (Pascoli, 2021), we discussed this important question to determine whether the Hessdalen Valley is a special or an accidental BBL site. We have imagined that the space is a kind of topological porous medium, of which we distinguish only three spatial dimensions (the smooth surface of the porous medium). The wormhole can then percolate in a purely accidental manner toward a specific point and, for a finite moment (a few years), i.e., in the present situation at Hessdalen. Figure 2 of the abovementioned paper exhibits a direct connection between any area taken in the Sun and the Hessdalen valley. This view is obviously oversimplistic, as presented for illustrative purposes. Herein, it is up to us to specify the details of the mechanism.

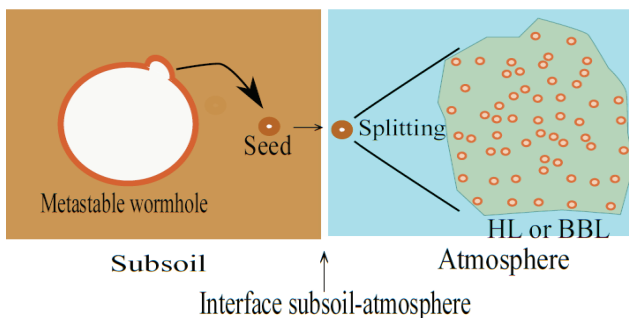
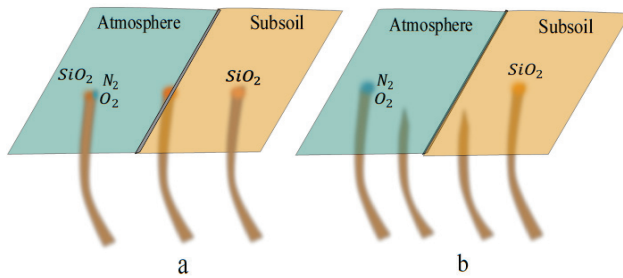


Figure 6. Metastable wormhole producing an embryonic entity (a seed) of a BBL



Note. Fig. 7a. Direct apparition through the interface subsoil-atmosphere. In this case, an observer can see the BBL erupting from the subsoil with a rising plum of molten tiny silicon clusters. Fig. 7b. Apparition by retraction. In this second scenario, the wormhole appears instantaneously in the atmosphere, and only the air molecules are ionized. Then the observer sees the BBL suddenly popping up in the middle of the sky.

Figure 7. Apparition Modes of an HL Into the Atmosphere

In the present scenario, we imagine a fluctuation appearing from the main permanent wormhole mouth at the center of the Earth. This fluctuation creates a new wormhole mouth that can appear anywhere inside the Earth; then, this mouth rises to the surface, where rare offshoots can emerge, eventually producing a visible aerial phenomenon known as a BBL (Fig. 5).

A direct analogy can be made with volcanism, where a hot spot rises from deep within the Earth. In a more precise manner, we first imagine that the fluctuation issued from the central and permanent wormhole mouth creates a metastable wormhole mouth that is fixed somewhere under the surface at a given site. This site can be located anywhere, but accidentally we can assume that this one is today situated deep just under the Hessdalen valley. Let us note that it is not fully excluded that the emer-

gence of this metastable mouth located just under the free surface of the Earth could possibly result from the geological nature of the site under question. We know that Hessdalen lights have been mostly frequent over the period between 1981 and 1984, even though the phenomenon existed before and still exists today; however, it is far less frequent. The phenomenon will probably disappear in a few decades and show up elsewhere. For the time being, we can reasonably propose the idea that an active HL (or more generally BBL) “tank”, similar to a magma chamber in the volcanism domain, was present deep under the Hessdalen valley for a few hundred years; this “tank” was very active between 1981 and 1984 and is far less active now (the analogy with volcanism seems to be very strong and can help us understand the phenomenon). We then have the following hierarchy (inspired from the paper of Emperan et al., 2021):

- i. A stable wormhole mouth at the center of the Earth with a radius of $1\sim\mu m$ for a power of the order of 1 GW.
- ii. A metastable wormhole mouth situated deep below the Hessdalen site with a radius of $\sim 3 \cdot 10^{-8} m$ for a power of 1MW. This metastable wormhole mouth is assimilated to a “tank” from which a seed of $\sim 10^{-9} m$ occasionally emerges. Then, this seed passes through the intersurface soil-atmosphere and becomes visible by the photoionization of the ambient air.
- iii. A swarm of unstable and very tiny wormhole mouths globally forming the skeleton of a BBL. This skeleton is obtained from the division of the seed. In the swarm, the individual units successively appear, divide, and retract within a time scale of the order $10^{-4}-10^{-3} s$. However, these individual units remain correlated. The time scale is derived from the results presented in the paragraph 6, and it can persist between these very sudden phases over a few seconds, minutes or hours. The swarm of very tiny correlated wormholes is randomly fed by the metastable wormhole mouth presumably located under the Hessdalen valley to date (maybe a few kilometers deep) (Fig. 6 and Table 1).

Table 1. Synoptic Table of the Wormhole Types

Wormhole Type	Size	Number	Lifetime
Central	$\sim 1 \mu m$ ($P \sim 1 GW$)	1	$\sim 5 \times 10^9$ years
Metastable Underground	$\sim 10 nm$ ($P \sim 1 MW$)	1000	$\sim 100-1000$ years
Unstable Atmospheric	$\sim 1 nm$ ($P \sim 10 kW$)	> 1 following the observations	~ 1 second–1 hour

Note. The numbers in this table are provided purely as an indication only. The characteristic sizes of the wormhole mouths are approximately scaled to the emitted powers. The central wormhole ($P = 1 GW$) can simultaneously feed 1000 metastable wormholes ($P = 1 MW$) distributed all across the world. The central wormhole is assumed to be permanent. Each of the metastable wormholes is assumed to reside in the underground of a defined area (for instance the Hessdalen valley) for a duration of a few centuries.

The Hessdalen valley covers an area of approximately $1.5 \cdot 10^7 m^2$ ($15 km \times 1 km$). By assuming that the metastable wormhole mouth is 10 km under the site of the Hessdalen Valley and this mouth radiates in an isotropic manner, we find excess heat flow of $\sim 15 mW m^{-2}$ at a surface under the Hessdalen site. On the other hand, the mean flow at the surface of the Earth is estimated to be $65 mW m^{-2}$ over the continental crust (Pollack et al., 1993; Fuchs et al., 2021). It would be interesting to measure this

flow in the subsoil of the Hessdalen valley, and to compare it to the flow in the surrounding areas, to see if the ground heat flux is not slightly higher in the Hessdalen valley than in the surrounding areas. The measurement of the flow would allow us to estimate the depth of a hypothesized metastable wormhole. In fact, even after these measurements are realized and yielding a hopeful outcome, we could still legitimately claim that it is not a wormhole but, rather, that an unknown source of energy is hidden in the subsoil of the Hessdalen valley. In this case, measuring the ground heat flux could nonetheless be very positive for understanding HLs.

Transition Subsoil-Atmosphere

A wormhole branch moving from the BBL “tank” can pass across the interface subsoil-atmosphere by using two different modes. First, this passage can be direct, and a diffuse plasma of silicate matter can be driven by the wormhole mouth (Fig. 7). In this case, the presence of silicon and magnesium/calcium ions should be detectable in the spectra of BBLs.³ In the second situation, the wormhole can retract and reach the atmosphere without truly crossing the interface. Then, the BBL must be exclusively composed of atmospheric gas (dinitrogen and dioxygen). It would be interesting to know the relative probability of a direct crossing against an underground air transition without crossing.

Number of Potential Hessdalen-Type Sites in the World

How many Hessdalen-type sites simultaneously exist in the world? By following our previous reasoning, the central wormhole (with an assumed power ~ 1GW) can feed 1000 BBL “tanks” (power ~ 1MW). In reality, there are fewer than 1000 Hessdalen sites in the world; instead, the number of Hessdalen sites is of the order of tens (Te-

odorani, 2004, 2014). However, most of these sites are inactive, and only a few of them are active. The analogy with volcanism can help us understand the situation. How many volcanoes are there in the world? Although volcanologists have no set rules for defining an active volcano, there are approximately 1500 potentially active volcanoes worldwide. However, most of these volcanoes can be dormant for lengthy periods. How long does it take to erupt a dormant volcano? A simple response is that dormant volcanoes are waiting until conditions are right to erupt. There are approximately 100 volcanoes actively erupting each year in the world (following the Global Volcanism Program at the Smithsonian Institution, see Siebert et al., 2010). By a very crude comparison, this may be the number of BBL sites that are active in the world each year. Let us note, however, that even though tectonic activity and BBL phenomena are considered fully independent in the present paper, some geological studies instead claim that many BBL sightings have been seen around volcanoes or other tectonically active areas (Bach, 1993; Thériault et al., 2014; Straser, 2016). In any way, if it’s actual, this alleged non-accidental correspondence between tectonic activity and BBLs needs to be confirmed.

Photoionization Model for Hessdalen Lights

The power of a BBL reaches values up to 19 kW (Teodorani, 2004). Before division, the energy source of the seed exiting the soil is assumed to be supplied by the mouth of a wormhole located at its center of this seed. By adapting the power $P_{WH} = P_{BBL} = 10 \text{ kW}$ and with the temperature $T_{WH} = T_s 10^7 \text{ K}$ (T_s is the temperature estimated by the solar models at the center of the Sun) of the wormhole, we obtain the radius of the wormhole mouth:

$$R_{WH} = 10^{-9} \text{ m} \tag{4}$$

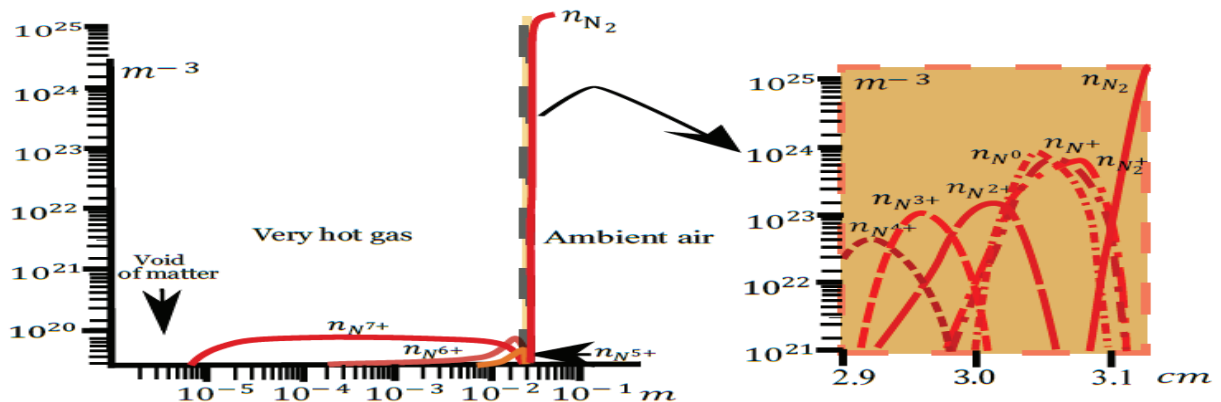


Figure 8. Structure of a BBL Seed

The source of energy of a mean seed exiting the soil can eventually be an insignificant object of nanometric size.⁴

A temperature of 10^7 K is indeed very high, and the radiation pressure at the mouth of the wormhole hole is $\sim 2.52 \cdot 10^{12} \text{ N m}^{-2}$. The net effect is to push back the atmospheric gas and create a very small cavity, i.e., a void of matter surrounding the wormhole⁵. This very small cavity is full of radiation at very high temperature⁶. However, around the mouth of the wormhole, the mean radiation temperature decreases as the inverse of the square root of the radius r . Then, beyond a very short distance of $10 \mu\text{m}$, the radiation pressure is much lower than the atmospheric pressure ($P_a = 10^5 \text{ N m}^{-2}$). The method of calculations has been presented in a previous paper (Pascoli, 2021), and the panel of formulae will not be again fully incorporated. However, we add some complements given that the temperature T_{WH} of the mouth of the wormhole and the ionization degrees of the nitrogen atoms are much higher.

The total recombination rate coefficients $\alpha(i)$ for the transitions $i + 1 \rightarrow i$, where i expresses the ionization degree (i varies from 0 to 6 for the nitrogen atom), are issued from Péquignot et al. (1991). The molecular recombination coefficients $\alpha_D(i)$ are taken from Tamadate et al. (2020). For the photoionization cross sections of the atomic N and its ions, we have chosen a well-known and easily handled law for the species :

$$\sigma_{L\nu}(i) = 10^{-22} \left[\alpha \left(\frac{\nu_i}{\nu} \right)^s + (1 - \alpha) \left(\frac{\nu_i}{\nu} \right)^{s+1} \right] \text{ m}^2 \quad (5)$$

Where α and s are coefficients that are supplied in the paper by Henry (1970), and ν_i are the threshold wave-

lengths in Table 2 (see also Osterbrock and Ferland, 2005). We dispose of many refined calculations for photoionization cross sections (Brumboiu, Eriksson, & Norman, 2019 and references therein); however, the theoretical data must be fitted, and the results cannot easily be manipulated. In any case, for energies of approximately 10–100 eV, the photoionization cross sections are typically of the order of one megabarn or 10^{-22} m^2 . Thus, given that the list of photoionization cross sections is still not complete for high degrees of ionization, we have chosen to fix $\alpha = 3$ and $s = 2.5$ when $i \geq 3$ in Eq. 5.

For molecular nitrogen N_2 we fit published tabulated values using the downloading link <https://home.strw.leidenuniv.nl/~ewine/photo>. A counterpart curve has been used for the corresponding mono-cation.

The equation system, already presented in the preceding paper (Pascoli, 2021), has been completed by the data supplied just above; then it has been normalized and solved by an iterative method at each point of radius r (the zero of r is taken at the wormhole mouth). MATLAB numerical software is used throughout the calculations. This software has been implemented on the MatriCS calculation platform at UPJV to date. The results are displayed in Fig. 8.

Let us note that the seed is not a full object with a diffuse aspect; it is instead a sharp-edged hollow ball filled with a very hot and very low-density gas. A quick rule of thumb for the calculation of the Strömgren radius of the seed can be made. The spectral radiant emittance of a black body is provided by the following relationship:

$$M_\nu = \frac{2\pi h \frac{\nu^3}{c^2}}{\exp\left(\frac{h\nu}{kT_{WH}}\right) - 1} \quad (6)$$

Table 2 Threshold Frequencies and Wavelengths for the Ionization Degrees of the Nitrogen Atom (NIST Atomic Spectra Database. Last update to data content: October 2022).

	Ion Charge i	Ground Shells	Ground Level	Ionization Level	Ionization Energy (Ev)	Frequency (Hz)	Wave-lengths (nm)
N I	0	$1s^2 2s^2 2p^3$	$4S^0_{3/2}$	$2p^2 \ ^3P_0$	14.53	$3.5 \cdot 10^{15}$	85.7
N II	+1	$1s^2 2s^2 2p^2$	$3P_0$	$2p \ P^0_{1/2}$	29.60	$7.1 \cdot 10^{15}$	41.9
N III	+2	$1s^2 2s^2 2p$	$P_{1/2}$	$2s^2 \ ^1S_0$	47.44	$1.1 \cdot 10^{16}$	27.0
N IV	+3	$1s^2 2s^2$	$1S_0$	$2s \ ^2S_{1/2}$	77.47	$1.8 \cdot 10^{16}$	16.5
N V	+4	$1s^2 2s$	$2S_{1/2}$	$1s^2 \ ^1S_0$	97.89	$2.3 \cdot 10^{16}$	12.9
N VI	+5	$1s^2$	$1S_0$	$1s \ ^2S_{1/2}$	552.07	$1.3 \cdot 10^{17}$	2.3
N VII	+6	$1s$	$2S_{1/2}$		667.05	$1.6 \cdot 10^{17}$	1.9



Then, for the photon flux at the mouth of the wormhole, we obtain the following equation:

$$\mathcal{N}_{ph} = 4\pi R_{WH}^2 \int_{\nu_i=6}^{\infty} d\nu \frac{M_\nu}{h\nu} \tag{7}$$

It is found that $N_{ph} \sim 1.3 \cdot 10^{19} \text{ ph s}^{-1}$ With the electronic density $n_e \sim 7n_{N^{7+}} \sim 9 \cdot 10^{19} \text{ m}^{-3}$, a rough estimate of the Strömrgren radius is as follows:

$$R_S = \left(\frac{3\mathcal{N}_{ph}}{4\pi\alpha_{N^{7+}}n_e^2} \right)^{\frac{1}{3}} \gtrsim 1 \text{ cm} \tag{8}$$

As in the preceding paper, relative to the topic of Hessedalen lights, we find a seed of centimetric radius.⁷ This seed is composed of a quasi-hollow bubble with a weak density, $n_{N^{7+}} \sim 9 \cdot 10^{19} \text{ m}^{-3}$, and a very high temperature of 10^7 K This temperature appears impressive; however, the energy contained in the bubble is very weak $\sim 1 \text{ J}$. This energy instantaneously dissipates within $\sim 10^{-4} \text{ s}$ without the energy input from the wormhole mouth (power 10 kW). A similar result was found in a previous paper (Pascoli, 2021). Let us notice that this very hot bubble is hidden from the view of the observer by an ionized shell, approximately one millimeter thick, with mean densities varying from approximately $4 \cdot 10^{23}$ to $2 \cdot 10^{24} \text{ m}^{-3}$ (**PER AUTHOR NOTE: SPECIFICITY FOR WHERE -3 GOES**) and mean temperatures varying from approximately 10^4 K to $2 \cdot 10^3$

K from the inside to the outside. This is inside this thin shell, assimilated to a black body, that the visible spectrum is produced with variable colors. The energy stored in this envelope is $\sim 1 \text{ J}$.

Dynamics of the Ionized Envelope

It is interesting to study the dynamics of the ionized shell. A series of equations must be considered:

- The dynamic equation for a spherical envelope:

$$\frac{d}{dt} \left(M_{env} \frac{dR}{dt} \right) = 4\pi [R^2 P_i - (R + \Delta R)^2 P_a] \tag{9}$$

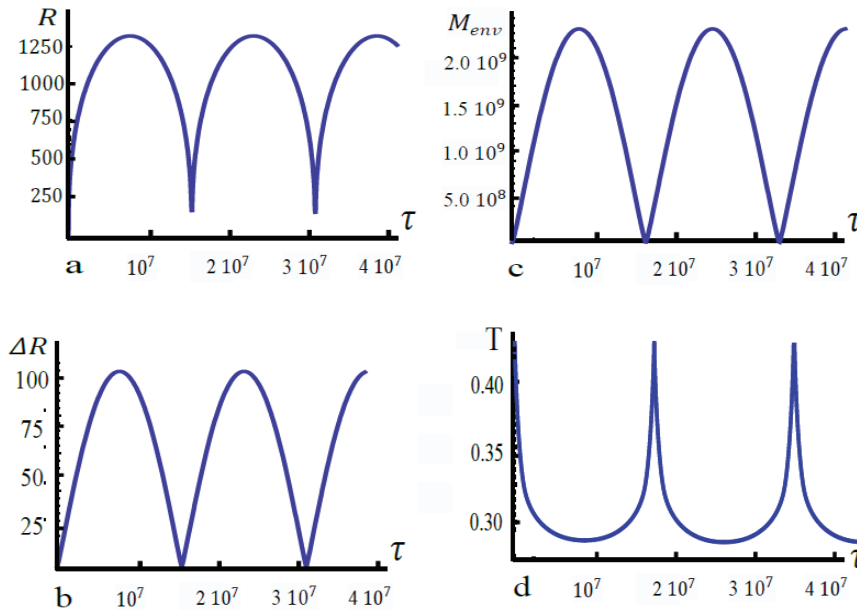
Where M_{env} is the mass of the envelope, $P_a = 10^5$ is the atmospheric pressure, P_i is the internal pressure within the very hot bubble, R is the mean radius, and ΔR is the thickness of the envelope. By assuming that $\Delta R \ll R$ (thin shell approximation), the equation transforms as follows:

$$\frac{d}{dt} \left(M_{env} \frac{dR}{dt} \right) = 4\pi R^2 (P_i - P_a) \tag{10}$$

$$\frac{dM_{env}}{dt} = 4\pi R^2 \rho_a \left(1 - \frac{1}{2} \left(\frac{R(0)}{R(t)} \right)^{\frac{3}{2}} \right) \frac{dR}{dt} \tag{11}$$

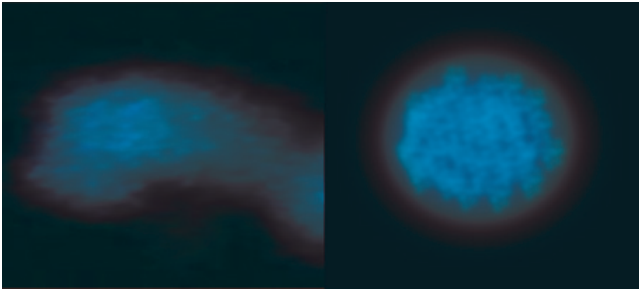
- Thickness

$$\Delta R = \frac{M_{env}}{4\pi R^2 \rho_{env}} \tag{12}$$



Note. Fig. 9 a displays the mean radius of the shell (unit reference = $1.8 \cdot 10^{-5} \text{ m}$), Fig. 9 b displays the thickness of the shell (unit reference = $1.8 \cdot 10^{-5} \text{ m}$), Fig. 9 c shows the mass of the shell (unit reference = $2.4 \cdot 10^{24} \text{ kg}$) and Fig. 9 d shows the mean temperature of the shell (unit reference = 10^4 K).

Figure 9. Pulsating BBL



Note. Left: BBL (E. Strand, Hessdalen.org); right: multimouth wormhole model.

Figure 10. Visualization of a BBL and its Interpretation.

Where ρ_{env} is the mean density of the envelope. By assimilating the atmosphere to an ideal gas, we obtain the following equation:

$$P_a = \frac{\rho_a}{m_a} k_B T_a \tag{13}$$

Where ρ_a is the density, T_a is the temperature ($T_a = 293\text{ K}$), and m_a is the mean mass of an air molecule, $m_a = 4.8 \cdot 10^{-23}\text{ kg}$. The plasma in the envelope is essentially a mixture of the dominant species N^0, N^+, N_2^+ . Then, the pressure in the envelope is approximately given by the following relationship:

$$P_{env} = (n_{N^0} + n_{N^+} + n_{N_2^+} + n_e) k_B T_{env} \tag{14}$$

By assuming the electric neutrality⁹, we obtain the following equation:

$$P_{env} = (n_{N^0} + 2n_e) k_B T_{env} \tag{15}$$

$$T_{env}(0) = 10^4\text{ K}$$

By considering the results of the preceding paragraph¹⁰, we obtain the following equation:

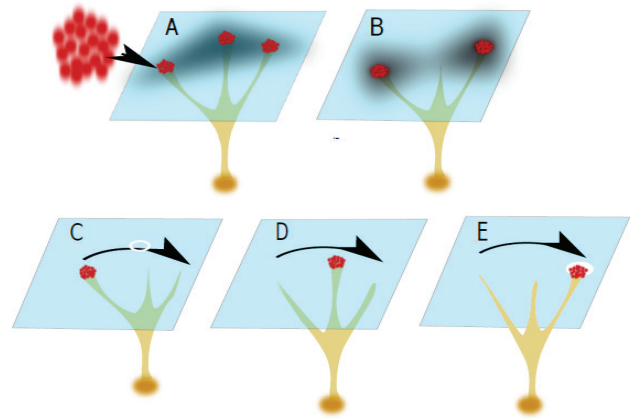
$$P_{env} \simeq 5 n_{N^0} k_B T_{env} = 5 \frac{\rho_{env}}{2m_a} k_B T_{env} \tag{16}$$

There are fewer equations than there are unknown variables $M_{env}(t), R(t), \Delta R(t), \rho_{env}(t), T_{env}(t), P_i(t), \rho_i(t)$, and the system is underdetermined. Additionally, other factors based on the results of the detailed model (paragraph 5) must be added.

An analysis of the data in paragraph 5 shows that both the density and the temperature grossly vary in the envelope in a quasi-adiabatic manner, starting from

$$T_{env}(t) = T_{env}(0) \left(\frac{\rho_{env}(t)}{\rho_a} \right)^{\frac{2}{3}} \tag{17}$$

The gas filling the central cavity is at the temperature T_s . This very hot gas forms a bubble (a coronal phase) that



Note. A: triangular configuration; B: dumbbell configuration. The dark area is a contrast effect against the sky background; C, D, E: Three groups of composing elements successively turn on by retraction of the wormhole mouths, simulating an incredibly rapid, even though fictive, "motion" without real translatory displacement of matter (and consequently without violation of the principle of inertia and, obviously, without sonic boom)

Figure 11. Macroscopic Effects Often Described by the Observers.

pushes the envelope with pressure $P_i = 2(x + 1) \rho_i / (m_a / 2) k_B T_s$, where $x = 7$ is the highest degree of ionization of the gas ($N_2 \rightarrow 2N^{7+} + 14e^-$). The density ρ_i in this bubble varies according to the following law¹¹

$$\rho_i(t) = \rho_i(0) \left(\frac{R(0)}{R(t)} \right)^{\frac{3}{2}} \tag{18}$$

where $\rho_i(0) = \rho_a$. We solve the system as follows:

$$\frac{d}{dt} \left(M_{env} \frac{dR}{dt} \right) = 4\pi R^2 \left[2(x + 1) \frac{T_s}{T_a} \left(\frac{R(0)}{R(t)} \right)^{\frac{3}{2}} - 1 \right] P_a \tag{19}$$

$$\frac{dM_{env}}{dt} = 4\pi R^2 \rho_a \left(1 - \frac{1}{2} \left(\frac{R(0)}{R(t)} \right)^{\frac{3}{2}} \right) \frac{dR}{dt} \tag{20}$$

Eq. 12 is applied to determine the thickness. The initial conditions are $\rho_i(0) = \rho_e(0) = \rho_a, m(0) = 0$

We apply $t = R(0) / C_s \tau$, where $c_s = \sqrt{\gamma Z k_B T_s / m_N}$ (γ is the adiabatic index and Z the charge state), $R(t) = R(0) u(t)$, with $R(0) = 1.8 \cdot 10^{-5}\text{ m}$, and $M_{env}(t) = 4\pi / 3 \rho_a R(0)^3 m(t)$, and $4\pi / 3 \rho_a R(0)^3 = 2.14 \cdot 10^{-14}\text{ kg}$, with the variables τ, μ , and m are three dimensionless variables.

Eventually, the dimensionless governing equations are as follows:

$$\frac{d}{d\tau} \left(m \frac{du}{d\tau} \right) = a u^2 \left[\frac{b}{u^{\frac{3}{2}}} - 1 \right] \tag{21}$$

$$\frac{dm}{d\tau} = 3u^2 \left(1 - \frac{1}{2} \frac{1}{u^{\frac{3}{2}}} \right) \frac{du}{d\tau} \tag{22}$$

Table 3. Hypothesized Composition of a BBL.

Number of Composing Elements in a One-Meter BBL	Power (W) by Composing Element	Size of a Composing Element	Size of the Ionized Region Surrounding a Composing Element	Steric Occupation of the Plasma Phase
100	100	$10^{-10} m$	5 mm	10^{-5}
1000	10	$5 \cdot 10^{-11} m$	1 mm	10^{-6}
10 000	1	$10^{-11} m$	0.05 mm	10^{-9}

with $a = 3P_a / (\rho_a c_s^2)$ and $b = 4(x + 1)T_s/T_a$. The initial conditions are $\rho_i(0) = \rho_{env}(0) = \rho_a$ and $m(0) = 0, u(0) = 1, du/dt(0) = 0$ and A numerical calculation gives $a = 4.6 \cdot 10^{-6}$ and $b = 9.6 \cdot 10^5$. The results are displayed in Fig. 9.

We note that the seed does not have a constant radius, and it periodically oscillates as a function of time. The period is $\sim 5 \cdot 10^{-4} s$. This period is very short and could only be visualized with a high-speed video camera. In particular, the variation in temperature between 10^4 and $3000 K$ (Fig. 9d) must lead to a variation in color from the blue-white to the red. For instance, in the astrophysics domain, the colors of the stars indicate their surface temperatures. The color is blue-white when the temperature is approximately $10^4 K$, it is yellow for temperatures of approximately $5000 - 6000 K$, and it is orange-red for stars with surface temperatures of approximately $3000 K$ ¹². Proceeding by analogy, and given that the temperature curve is relatively flat (Fig. 9d) and around approximately $3000 K$, we can reasonably assume that the tiny seed must appear orange-red immediately after exiting the subsoil. However, the outlet of the subsoil may be rapid, and this phase could be difficult to observe. Then, after multipartitioning of this tiny seed, the ionizing elements are distributed in a very large volume of cold air, and the Rayleigh scattering by the molecules can eventually confer to a BBL a bluish aspect.

BBL Formation

Remarkably, the model here gives a very deceptive small object of centimetric size, itself fed by a nanometric wormhole mouth located at its center, whereas the observed BBLs are sometimes described with a size of a few meters. First, we specify that an HL (or, more generally, a BBL) is not a perfect luminous disk with uniform brightness (Fig. 10).

In Figure 10, we clearly see that the BBL is composed of numerous whitish spots, very likely a hundred or many more. These spots have variable brightness levels and the

environmental bluish aspect seems to be due to diffuse radiation produced by cold air molecules.

Then, how do you make a very patchy BBL of one meter in size with a tiny sharp-edged seed, i.e., the small ball of one centimeter in size described in paragraph 5? By considering the instability of this seed, we can imagine it splitting into a multitude of small components, each of them being fed by a point source, i.e., a very small wormhole mouth. In the following, we call composing elements these point sources.¹³ Their size is difficult to estimate; however, we give a table summarizing a panel of sizes (Table 3).

With reference to the steric occupation, we understand why the Hessdalen lights and other BBL-type phenomena are so elusive. A BBL is eventually a metric volume of cold air taken in its molecular form (temperature $\sim 293 K$), including a swarm of very tiny ionized regions $\sim 1 mm$ inside it (range of temperatures $\sim 2 \cdot 10^2 - 10^4 K$). We have then the image of a plum pudding model but with minute grape seeds, corresponding to the ionized fraction (Fig. 10). However, the BBL is continuously fed by a swarm of composing elements in it, and the power globally emitted by the BBL is high $\sim 10 kW$ (maybe $\sim 100 kW$ in a few cases). When the swarm of wormholes retracts outside of space in totality after a relatively long period, of the order of a few seconds or minutes, the source of energy suddenly shuts down; the BBL turns off very rapidly, within $10^{-4} - 10^{-3}$, leaving no trace. Conversely, if the totality or part of the swarm of composing elements reappears, the BBL quasi-instantaneously turns on with changing forms. If the phenomenon repeats periodically, we see a flashing BBL with changing colors. Notably, this second period, of the order of a few seconds or minutes, is easily perceptible by the observer; it occurs mainly due to the successive retractions and reappearance of wormhole mouths in the atmosphere. Groups of composing elements can turn back independently, leading to various effects producing different impressive geometric shapes (Fig. 11).

Approaching a BBL

A spherical BBL with a radius of 1 m has an area of 12 m^2 . The area of a hand is approximately $10\text{ cm} \times 10\text{ cm} = 10^{-2}\text{ m}^2$. With an isotropic power of 10 kW for a mean BBL, the power received by a hand directly at the surface of the BBL is 10 W . The solar energy that reaches the Earth at sea level is roughly 1000 W m^{-2} or 10 W over an area of a hand. The values are identical (10 W). This phenomenon is a direct indication of the sensation that can be felt by touching a one-meter BBL with a mean power of 10 kW . As an illustration, a one-meter BBL has been seen lying on snowy ground without any traces of snow thawing after its disappearance (Nikitin *et al.*, 2018). The larger a BBL is, the less dangerous it is, even though it is not an intangible rule. BBLs can be dangerous if the power is larger than 10 kW , as assumed in some cases (Maccabee, 1996, referenced in Sturrocks, 1998). Conversely, for the same power, a one-centimeter BBL (for instance, the seed emerging from the BBL “tank” at the very beginning of the process before division) can trigger a fire in a house. Fortunately, according to the FAO Global Land Cover Share database, only 0.6% of Earth’s land surface is defined as artificial cover, such as construction. Moreover, a BBL is an extremely rare phenomenon, and the probability that a one-centimeter BBL goes from the subsoil to the atmosphere by crossing a residential building is very weak.¹⁴

Absence of a Sonic Boom

Another aspect of the HL phenomena is the absence of a sonic boom when the BBL moves with a supersonic velocity. First, the term “move” associated with the BBL poorly describes the phenomenon. In reality, whereas the swarm of point sources (composing elements) moves, the small volume of ionized air surrounding each composing element does not move. The air is ionized on the spot and renewed continuously around each composing element. This effect simulates an apparent translatory motion without real displacement of atmospheric matter. This may be the key to why no sonic boom is heard. Thus, a BBL is a phenomenon, not a definite object (or, following the terminology, an unidentified aerial phenomenon (UAP) rather than an unidentified flying object (UFO), even though the swarm of composing elements contained in it can be assimilated to an “object”).

However, another motion is real, which is the oscillation of the ionized shell surrounding each composing element. By following the results presented in paragraph 6, this ionized shell (thickness $< 1\text{ mm}$) surrounding each composing element (size $\sim 5 \cdot 10^{-11}\text{ m}$) oscillates. Part of the energy of the oscillatory motion is very likely dissipated in the form of shock waves. However, a shock wave pro-

duces a sonic boom. This finding seems to be contrary to what we said above. Eventually, it is difficult to escape to a sonic boom. How can this problem be solved?

A ballistic crack of a supersonic small bullet (size $\sim 1\text{ cm}$) is characterized by a frequency that is much higher than that of a bang of a supersonic fighter jet (size \sim a few meters). Obviously, the frequency spectra of a sonic boom or a ballistic crack are strongly dependent on the velocity and shape of the object. However, very crudely, the mean characteristic frequency of a supersonic object is grossly equal to the inverse of its size. The audible frequencies of the sonic boom of a fighter jet are approximately 100 Hz (even with a very large band of frequencies around this mean value); for a small bullet, the mean frequency is approximately 10 kHz . We can reasonably assume that the frequencies of a supersonic object that is approximately one-millimeter peak at approximately 100 kHz . Then, it is possible that the acoustic frequencies emitted by the oscillation of the ionized envelope (size $\sim 1\text{ mm}$) surrounding each composing element are located in the ultrasonic domain and are thus inaudible to humans. In addition, the range of ultrasounds in the air is smaller than the range of audible sounds, even though the attenuation considerably depends on the properties of the gas medium: temperature, pressure, and humidity (Vladišauskas & Jakevičius, 2005). As a result, the intensity of ultrasounds emitted by a tiny oscillating envelope can substantially be weakened before the reception by any device. Nevertheless, it would be most interesting to install an ultrasonic sensor on the Hessdalen site to know if this type of wave is emitted (or not) by the BBLs. For the model proposed in this paper, the aim of these measurements is to fix the size of the composing elements and to estimate their number in a one-meter BBL for a power of 10 kW . Clearly, the analysis will be complex due to the interferences between the various shock waves produced by a multitude of small oscillating sources; however, it can be an interesting topic.

DISCUSSION

After the works of Strand, Hauge, and a few other researchers and the seminal paper by Teodorani (2004), we know that the Hessdalen lights and other BBLs of sizes of $\sim 1 - 10\text{ m}$ seen around the world can naturally be studied by physics. We have attempted to follow this path in this paper. By following the scenario described here, a BBL with a size of $\sim 1 - 10\text{ m}$ is essentially a volume of air at ambient temperature (293 K) and pressure (10^5 Pa). In this volume of cold air, it is assumed that the source of radiation can be a swarm composed of unstable tiny wormhole mouths of sizes of $\sim 10^{-10} - 10^{-11}\text{ m}$; each of these mouths

feeds a small ionized region of 1 mm in size. The thin shell surrounding each of these pulsating ionized regions has a mean temperature of 2500 - 3000 K at its maximum extension. In addition, the composing elements of the swarm of wormhole mouths are not independent; their relative positions are strongly correlated because they are linked to a “tank” (itself a wormhole of a size of $\sim 10^{-8}$ m) located deep in the subsoil of the site under question (for instance, the Hessdalen valley). The model predicts that 1000 Hessdalen-type sites may exist in the world with a low proportion of active sites at the same moment (by analogy with volcanism).

The first item of importance of the model is to advance the physics of BBLs:

- i. The production and analysis of spectra, which have already begun, must be continued. Two types of HLs are predicted by the model: HLs composed of only air molecules (resulting from an extradimensional transition between the HL (BBL) “tank” in the subsoil and atmosphere) and HLs composed of a mixture of cold air molecules and silicon particles (resulting from a three-dimensional transition between the subsoil and atmosphere). In the first situation, spectra of N^2 and O^2 molecules only appear, and in the second situation, the spectra of silicon or other terrestrial elements (scandium, for instance) must be present.
- ii. The detection of a monopolar magnetic field would be direct proof of the existence of a wormhole, as already proposed in a preceding paper (Pascoli, 2021). Notably, the presence of a monopolar magnetic field can explain the division of the initial seed, originating from the subsoil, into an aerial swarm of subnanometric wormholes over a large extension (~ 1 m) because monopolar magnetic fields of the same polarity repel one another. It will be interesting to conduct a theoretical study to investigate this topic.
- iii. Measurements must be performed concerning the production of ultrasonic waves, which are possibly emitted by the BBLs; these measurements made it possible to estimate the sizes of the entities composing the swarm of subnanometric wormholes. The signature of a BBL could be a series of cracks in the ultrasonic domain. This signature would allow us to immediately discriminate between true BBLs and other misinterpretations (planet, headlight, etc.). In addition, ultrasonic signal measurements may be easier to realize than the obtention of very high-resolution optical spectra.
- iv. We know from geophysics that the acquisition of thermal datasets allows the detection of enhanced geothermal flow in a localized region. Due to the in-

ferred presence of a BBL “tank” deep in the subsoil under the Hessdalen valley, the geothermal gradient can be somewhat higher than that in the nearby valleys. The temperature of subsoil over a few meters under the surface results almost entirely from heating by the Sun and cooling through radiation; for this reason, a shallow exploratory drill hole of a few meters would prove to be totally ineffective. Also, highlighting an anomalous geothermal gradient under the Hessdalen Valley must require drilling a borehole deeper than a few hundred meters. Various mechanized drilling techniques are operative, and several highly experienced borehole drilling companies can easily make it, though unfortunately, at high costs (with minimal values of approximately 10,000 dollars for 100 meters, depending on ground properties, knowing that a minimum of four or five boreholes, one in the Hessdalen valley and the other ones in the nearby valleys, are needed). Let us note once again that the fact that the Hessdalen lights appear in the Hessdalen valley and not in the nearby valleys clearly indicates that the source of the phenomenon hidden in the subsoil must nonetheless be relatively close to the surface. In any case, if we want to solve the puzzle of the Hessdalen light phenomena, we must give ourselves the means to do so.

The second and very important item would be to confirm the existence of planetary wormholes. Galactic wormholes of size ~ 10 AU and stellar wormholes of kilometeric size have recently been predicted. However, these seemingly elusive entities could be closer to home as one might think about them, even though they have a much smaller size. The discovery of planetary wormholes of micrometric-nanometric size would be a major breakthrough in the wormhole domain. Even though entirely speculative for the time being, the present idea could simultaneously solve the BBL enigma and eventually prove the reality of stable wormholes in the Universe. One last question: What is the probability that wormholes are at the origin of the HL phenomena? Maybe we can believe that this probability is very thin, but in reality, a belief has nothing to do with science. The true referee in science is experimentation. Only and only experimentation can validate an idea in physics, no matter how weird it sounds. Also, we should leave no avenues unexplored in order to understand the BBL phenomena.

ACKNOWLEDGMENTS

I thank the anonymous referees for their very relevant comments.

ENDNOTES

¹ The interest in the proposal of wormholes against black holes in the field of astrophysics and related domains is that black holes have a troublesome central singularity, whereas wormholes do not. Thus, a traversable wormhole has no horizon and allows an extradimensional passage through it. However, this implies that, in the strict context of general relativity, a violation of the weak energy condition must unavoidably occur when passing the throat of the wormhole. On the other hand, it is known that certain wormhole solutions, which have been constructed using various modified theories of gravity, do not require weak energy conditions violating matter. Unfortunately, this important point is not definitely fixed in the models (Roman, 1988; Frolov & Novikov, 1998; Lobo, 2018).

² Concerning now the complex issues related to the stability and the crossing of the wormholes, these are items largely debated today and are still inconclusive (Konoplya & Zhidenko, 2022). It is a continuing challenge that applies to both the families of galactic and stellar wormholes. Unfortunately, no solution can be supplied in the strict framework of the general relativity for which all wormholes are definitively unstable. We need a quantum gravity theory to solve this complex inquiry. On the other hand, the estimation of the gravitational mass of the wormhole has been made above in the framework of general relativity. In reality, other forces (for instance, the Casimir force, even though this one is limited to the quantum level) necessarily compensate for the gravitational force; otherwise, we know the wormhole will instantaneously collapse. In this case, the gravitational potential at the mouth of the wormhole does not slowly vary as $1/r$; in contrast, it is very likely screened, and then, it rather strongly decreases as $1/r e^{-r/r_D}$, where the constant plays the role of a gravitational Debye radius (maybe $r_D \sim 10^{-9} m$ for a nanometric wormhole). This type of gravity is related to modified gravity theories, which have already tentatively been applied to other fields of astrophysics, especially in the very large-scale domain (see Moffat, 2008), where a Yukawa-type potential is assumed. However, we know that modified gravity can lead to nonstandard yet traversable wormhole geometries that are fundamentally different from their unstable counterparts in general relativity. Unfortunately, modified gravity theories are overabundant and are facing various mathematical challenges. Hence, the theories of wormholes appear in the early stages of development. We must mention that the experimental point of view has been completely

neglected in all these theoretical studies. However, without experimental support, a theory cannot be fully validated and even appears irrelevant. In contrast, if the HL and BBL phenomena have any interrelationship with the wormholes as hypothesized in this paper, the study of HLs or BBLs would constitute a formidable experimental field of investigation for the wormholes.

³ Spectra of a few BBLs have been obtained (Teodorani et al., 2001; Hauge, 2007). The presence of elements like N, O and, Si, Ca, and Mg has been effectively suspected, but unfortunately, the too low-resolution of these spectra forbids a really reliable spectrochemical identification.

⁴ In the preceding paper (Pascoli, 2021), a size of $50 \mu m$ was found, but the wormhole temperature was then assumed to be much lower $\sim 10^5 K$.

⁵ The gas of the atmosphere is strongly pushed aside by the intense radiation stemming from the wormhole mouth and consequently cannot penetrate the wormhole. In this work, the wormhole is a canal for the radiation field, not for the matter. Consequently, a cavity devoid of matter appears surrounding the wormhole mouth (Fig. 8).

⁶ We recall the formula of the radiation pressure for a black body $P_{rad} = 1/3 aT^4$ where a is the radiation constant, $a = 7.57 \cdot 10^{-16} J m^{-3} K^{-4}$.

⁷ By taking $T_{WH} = 10^7 K$ for a power of 100 kW, we obtain a radius multiplied by 3, and for a power of 1 MW, we obtain a radius multiplied by 10.

⁸ Cf. note 10.

⁹ By imposing the electric neutrality, we have the following condition: $n_e = n_{N^+} + n_{N_2^+}$.

¹⁰ By considering the results of the simulation presented in Fig. 8, we have $n_e \sim n_{N^+} \sim n_{N_2^+}$. The mean density in the envelope ρ_{env} (m_o is the mean mass of an air molecule) can be simply expressed as follows:

$$\begin{aligned} \rho_{env} &= n_{N^0} m_{N^0} + n_{N^+} m_{N^+} + n_{N_2^+} m_{N_2^+} \\ &\simeq n_{N^0} m_{N^0} + n_{N^0} m_{N^0} + n_{N^0} (2m_{N^0}) \\ &= 4n_{N^0} m_{N^0} = 2n_{N^0} m_a \end{aligned}$$

This equation is indeed a very crude approximation that is sufficient for our purpose.

¹¹ ρ_i varies as $R^{3/2}$ and

$$M_i(t) = \frac{4\pi}{3} \rho_i(0) [R(0)R(t)]^{\frac{3}{2}}$$

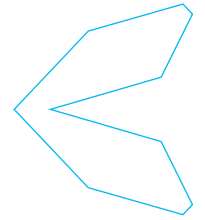
This equation results from the fact that the mass of the hot bubble (coronal phase) is not constant; instead, it increases at the expense of the thin shell, which erodes on its inner face.

- ¹² To the naked eye, all the stars appear white because they are too dim for the human eye to perceive color. In any way, the color restitution depends on the sensibility of the image sensor.
- ¹³ These composing elements are also wormhole mouths but of a size much smaller than $10^{-9} m$.
- ¹⁴ In contrast, ordinary ball lighting observed sometimes in a house seems to have a very weak power of the order of a few watts; they consequently do not produce any damage. Very likely, the BBLs described in this paper and the ordinary ball lighting are very different phenomena.

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RESEARCH BRIEF

A Plausible Thermo-Dynamic Cause of an Implausible Psicho-Dynamic Course From The CIA Archive

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SUBMITTED April 10, 2023

ACCEPTED April 19, 2024

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20242959>

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HIGHLIGHTS

Advanced analysis suggests that inexplicable temperature changes documented by a Chinese study within declassified US-government records could have a common hidden link to brain functioning.

ABSTRACT

The STAR GATE archive included an experiment from China of psicho-physical claim reportedly conducted on aqueous object (Wu et al, 1991). Over a time-lapse of approximately 208 seconds, total 7 phases of significant temperature deviation from the baseline temperature of 25 °C may be identified, without an explainable source of thermal generation. Not questioning the genuineness of the experiment, this work analyzes the thermal-energy transfer on the test-object that could have caused the reported temperature changes. A non-adiabatic single-compartment produces first-order low-pass responses between a thermal-input and the object's temperature. Whereas the input determines the steady-state condition, the thermal dissipation dictates the dynamics. Under the assumption of ONLY first-order responses and adjusting the input parameters including DC and AC magnitudes and time-constant of the single-compartment responses, multi-phase temperature changes resembling the reported patterns could be reconstructed. One rising phase and three falling phases with apparent oscillation were reconstructed by considering the thermal input to contain modulatory patterns of 0.4-0.5 Hz in frequency. Such modeled modulation of the thermal inputs would correspond to a correlation coefficient of 0.95 between the DC and AC magnitudes at a varying AC/DC modulation-depth of $\leq 94\%$. The low-frequency may suggest relevance to altered neuro-electro-physiology.

KEYWORDS

Psi, PK, China, CIA, STAR GATE, heat transfer.



INTRODUCTION

The vast volume of CIA's STAR GATE archive that has been declassified to the public [1] included an experiment originated from China in 1991 [2]. That experiment concerned an anomalous or an unexplainable change of the temperature of a body of aqueous object held in the hand of one individual claimed to have psycho-physical faculty. Since there was no additional information regarding the details of the experiment, the document included in the declassified archive needs to be taken in its original form and entirety towards any discussion concerning the experiment. However, before initiation of this present work, the author (Piao) discovered that he met the first author (Wu) of the referred document once in a professional setting more than 2 decades ago (between 1995 and 1998, a time when Piao had no prior knowledge of the referred document of Wu) when Wu was an advisor to the employer of Piao at that time. By tracing the declassified document, Piao was also able to access the original Chinese version of the report of the experiment with help from a friend (see Acknowledgement). Because of the personal knowledge of the professional credential of Wu as the first author of the referred document, the experiment reported in this declassified document will be discussed in terms of focusing on only the aspects that were mechanistically subjectable to model-analysis, without questioning the genuineness and complete controllable conditions of the experiment.

That original report appearing in Chinese presented only one figure which was slightly miss-aligned in terms of the leveling of the abscissa, as was archived in the English version. The English translation of that report fixed the alignment of the figure, as is snapshot reproduced in **Fig. 1** by overlapping with shades of different colors and siz-

es and addition of some numbers and symbols for the convenience of segmenting. What Fig 1 registered corresponded to the following results claimed in [2]: the temperature of approximately 5 ml of water contained in a test-tube that was held in one hand of an individual of psi-cho-energetics claim was monitored with semi-conductor temperature sensor having a time-resolution of 0.2 seconds. The temperature of the water in the test tube was registered over a duration of approximately 208 seconds, covering the claimed psi-cho-energetic tasking of the individual. The water temperature rose 27 °C above the baseline temperature of 25 °C in approximately 52 seconds, then fell 27 °C back to the baseline in approximately 142 seconds.

The global course of the temperature change registered, as is shown in Fig. 1, may be observed in more detail. The rising phase could separate to three consecutive stages differing in the patterns of temperature change: a stage lasting ~30 seconds making a slow and small temperature rise of ~1 °C from the baseline, a stage lasting ~8 seconds making a fast temperature rise of ~22 °C with resolvable oscillations, and a stage lasting ~14 seconds making a saturating-limited temperature rise of ~4 °C. Likewise, the falling phase could split to four cascaded stages with differing patterns of temperature change: a stage lasting ~57 seconds making a near linear temperature reduction of ~15 °C overlaid with apparently small and un-damped oscillations, a stage lasting ~63 seconds making a temperature reduction of ~3 °C with a small and frequency-relaxed undamped oscillation, a stage lasting ~19 seconds making a temperature drop of ~6 °C with a small oscillation, and a stage lasting ~3 seconds making a temperature drop of ~3 °C to the baseline.

The thermal response of any system depends upon the rate of heat transferred into the system by external

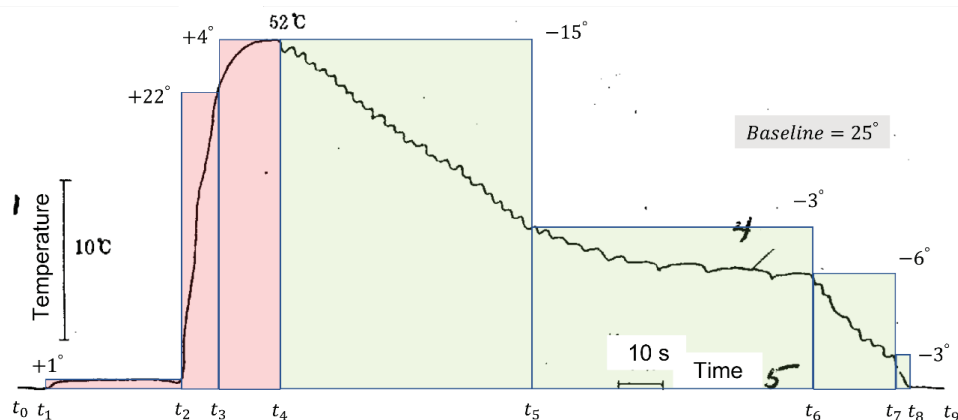


Figure 1. The course of temperature change reproduced from the open-accessed document of [1], with the Chinese words replaced and covered by English translation. The shaded areas mark the zones wherein the temperature deviated from the baseline. The phase of temperature rising from the baseline of 25° to 52° seems to have consisted of three stages, one of small increase with oscillation, one of fast increase with oscillation, and one of saturating increase with no oscillation. The phase of the temperature falling from 52° to the baseline of 25° seems to have consisted of four stages, one of near-linear reduction with undamped oscillation, One of reduction a saturating pattern overlapped with amplitude undamped but frequency-stretched oscillation, and two of fast reduction with undamped oscillation.

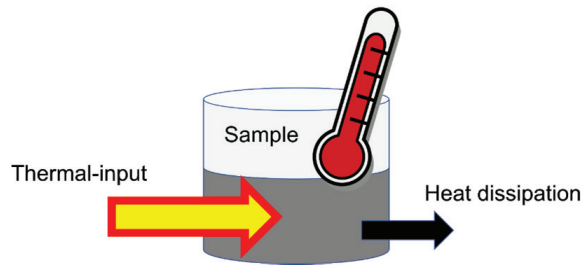


Figure 2. Simple model of the thermal energy change of a non-adiabatic object. The thermal input actively applied by an external source increases the temperature of the object, while the heat dissipation by the object passively interacting with the environment reduces the temperature.

source or internal generation that takes additional energy, and the rate of heat dissipation of the system to its environment. The dynamic patterns of the temperature changes as were registered in Fig. 1, the stages of rising and falling phases combined, could not be accounted for by local means of energy source or generation and the rates of passive heat-transfer that must have existed between the test object and its environment [2]. The difficulty of reconciling the temperature changes as were registered with the existing frames of physics has made the reported phenomenon unexplainable without resorting to anomalous faculty or fraud. However, it must be noted that the test-object was a volume of aqueous body, to which heat-transfer principles shall enable quantifying the effect on the temperature of the body when resulted from a given pattern of energy or heat actively introduced into the object-body and a known rate of heat dissipation by the object-body into the environment. This shall be true and practiced, regardless of whatever the root cause of the energy source might have been and whatever rate of heat-transfer could have become, in explaining the measured temperature changes of the aqueous body. This is especially important, considering the potential implication if such an experiment could be understood, even partially. By analyzing the heat-transfer or thermodynamics courses that may be congruent with the temperature changes of the test object, it may be plausible to minimize the unknown factors pertinent to the controls of that experiment to only those with psychophysical manifestation.

METHODS

Simple Single-Compartmental Model of the Thermodynamics of the Test Object

This section presents a simple model of the temperature change of the test object using a single-compartmental

model as is conceptualized in Fig. 2. For a non-adiabatic system, the net difference between the rate of the heat generated in (or actively produced into) the system and the rate of the heat passively dissipated from the system to the environment, contributes to the change of the temperature of the system scaled by the heat capacity of the system. By treating the test object as a compartment, i.e., the change to its internal energy is instantaneously distributed throughout the entire volume, a simple model of the rate of thermodynamic change is obtained as the following:

$$C_v \frac{dT(t)}{dt} = -K_{diss} \cdot \Delta T(t) + P_{in}(t) \quad (1)$$

Where C_v is the constant-volume heat capacity [$J, [J \cdot kg^{-1} \cdot K^{-1}]$], $T(t)$ is the absolute temperature [K], $dT(t)/dt$ is the differential change of the temperature $T(t)$ over a time-interval of dt , K_{diss} is the lumped rate constant of the passive heat transfer or dissipation to the environment [$J \cdot kg^{-1} \cdot K^{-1} \cdot s^{-1}$], $\Delta T(t) = T(t) - T_0$ is the temperature change from a previous value of T_0 , and $P_{in}(t)$ is the rate of heat generation from an external source [$J \cdot kg^{-1} \cdot s^{-1}$] that becomes the thermal input to the system.

Since $d\Delta T(t) = dT(t)$, we have from Eq. (1):

$$C_v \frac{d\Delta T(t)}{dt} = -K_{diss} \cdot \Delta T(t) + P_{in}(t) \quad (2)$$

Note that the ratio between the heat capacity C_v and the rate constant K_{diss} carries a unit of time therefore it effects a time-constant of the following:

$$\tau = \frac{C_v}{K_{diss}} \quad (3)$$

$$\frac{d\Delta T(t)}{dt} = -\frac{1}{\tau} \cdot \Delta T(t) + \frac{1}{K_{diss}\tau} P_{in}(t) \quad (4)$$

It is straightforward to obtain from Eq. (4) the transfer function between the active thermal input and the resulted temperature change as follows

$$H(s) = \frac{1}{K_{diss}} \cdot \frac{1}{s + \frac{1}{\tau}} \quad (5)$$

Equation (5) specifies a low-pass response characterized by a cut-off angular frequency of $1/\tau$ and a pass-band gain of $1/K_{diss}$.

The Response of the Single-Compartmental System to Step and Sinusoidal Inputs

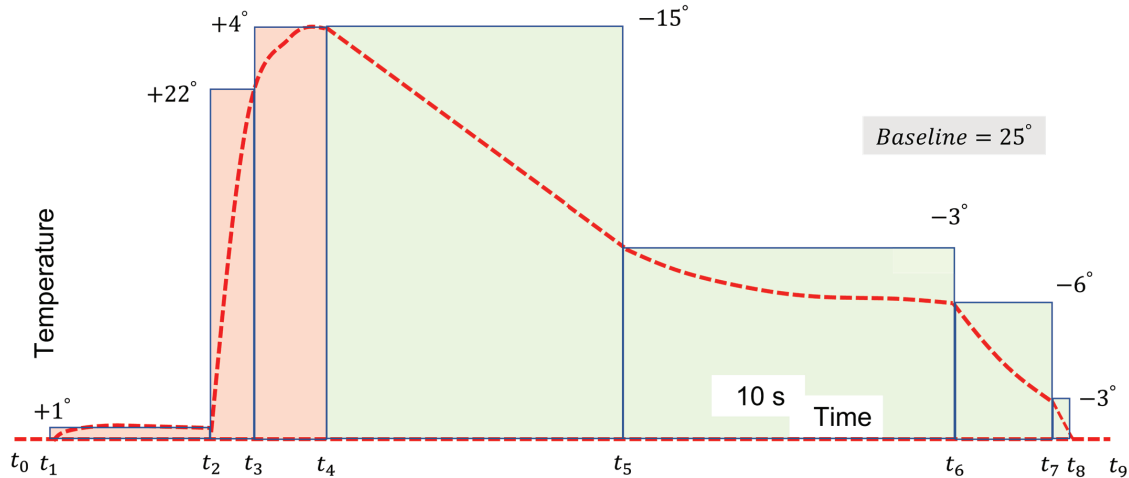


Figure 3. Hand-emulated trace of temperature change based on Fig. 1. The shaded areas are the same as those in Fig. 1. The hand-sketch only captured the global pattern of the change in each of the shaded segments. Overlaying the hand-sketched trace on simulated traces allowed gross-examination of the quality of the simulation reconstructions of the temperature change.

Now let’s examine two simple functions of the rate of heat generation as the input to the system. We consider a constant rate of external heat generation of the following:

$$P_{in}(t) = A_{step} \cdot u(t) \tag{6}$$

Where A_{step} is the amplitude of the rate of heat generation per weight [$J \cdot kg^{-1} \cdot s^{-1}$], and $u(t)$ is the Heaviside function. The transfer function of Eq. (5) will respond to this input with the following output:

$$\Delta T(t) = \frac{A_{step}}{K_{diss}} [1 - \exp(-\frac{1}{\tau}t)] u(t) = A_{step} \frac{\tau}{C_v} [1 - \exp(-\frac{1}{\tau}t)] u(t) \tag{7}$$

This is a first order “charging” curve with a time constant of $\tau = C_v/K_{diss}$ and a saturation value of $A_{step} \tau/C_v$ which becomes the saturated change of the temperature. Denoting the measured saturated change of temperature as A_{pc} [$^{\circ}C$], we have

$$A_{step} = \frac{A_{pc}}{\tau} C_v \tag{8}$$

We then consider an external heat generation that oscillates as the following:

$$P_{in}(t) = A_{sinu} \cdot \cos(\omega t) \cdot u(t) \tag{9}$$

Where A_{sinu} is the amplitude of the oscillation [$J \cdot kg^{-1} \cdot s^{-1}$], and ω is the angular frequency of the oscillation. The transfer function of Eq. (5) will respond to this input with the following complete output:

$$\Delta T(t) = \left\{ -\frac{A_{sinu}}{K_{diss}} \cdot \frac{1}{\sqrt{1+(\omega\tau)^2}} \cdot \exp\left(-\frac{1}{\tau}t\right) + \frac{A_{sinu}}{K_{diss}} \cdot \frac{1}{\sqrt{1+(\omega\tau)^2}} \cdot \cos[\omega t - \tan^{-1}(\omega\tau)] \right\} \cdot u(t) \tag{10}$$

Equation (10) represents an exponentially damping value overlaid on a steady oscillation that becomes the measured oscillating change of the temperature. Denoting the measured amplitude of the temperature oscillation as A_{AC} [$^{\circ}C$], we have:

$$A_{sinu} = C_v \frac{A_{AC}}{\tau} \cdot \sqrt{1 + (\omega\tau)^2} \tag{11}$$

Should the input be the linear combination of the two types specified by Eqs. (6) and (9), respectively, the resulting response will be the linear combination of the two patterns specified by Eqs. (7) and (10), respectively. And the steady-state temperature change in responding to that combination of the inputs shall manifest both a global change and an oscillating component. Identifying the global change and the oscillating component shall allow estimating the respective levels of step-input and the amplitude of the oscillating input, using Eqs. (8) and (11).

Gross Assessment of the Model-Data Fit Based on the Global Patterns

Examining the model-data fit requires access to the raw data. However, a digital format of the raw data of the temperature change as is depicted in Fig. 1 is unavailable. To facilitate the examination of the model output against the data of Fig. 1, an alternative strategy was implement-



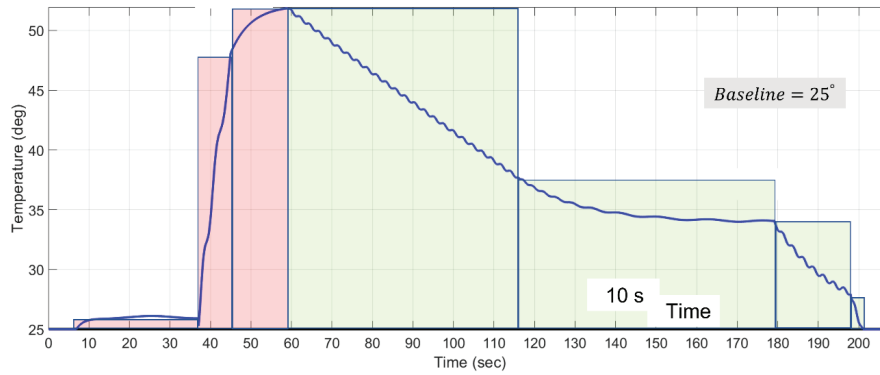


Figure 4. The estimated time-course of the temperature change. The shaded areas are the same as those in Fig. 1.

ed. The global course of the temperature patterns was hand-sketched along the traces of Figure 1 using computer mouse, by disregarding the oscillating patterns due to the resolution limitation of hand-sketching as shown in Fig. 3. The hand-sketching was tried many times until the lower and upper levels of a characteristic segment matched the respective levels on the figure. The time-lapse and the temperature change of each characteristic segment were estimated by referencing to a horizontal bar-scale representing a time-duration of 10 seconds and a vertical bars-scale marking a temperature change of 10 °C. The number of oscillations were also approximated for the pertinent segments. The estimated time-lapses and temperature changes of a total of 9 arbitrarily sectioned stages are given in Table 1.

For those sections manifesting relaxation (chirping) of the oscillating frequency, the frequency was given an exponentially-reducing time-variance with respect to the frequency at the beginning of the local segment as the following:

$$\Delta\omega = \eta \cdot \omega_0 \cdot \exp(-2\pi f_\omega t) \tag{12}$$

Where η is the total relative change of the frequency

scaled over the base (beginning) frequency of the segment, and $f_\omega \bar{A}$ [1/s] is a rate of the change of the frequency, or the ramping frequency.

RESULTS

The Estimated Course of Temperature Changes

The course of the temperature changes as estimated according to the methods detailed heretofore is shown in Fig. 4. Figure 4 has included the same 7 shaded areas as in Fig. 1 to visualize the global match of the model output with the data of Fig. 1.

Figure 5 replicates the course of the temperature change of Fig. 4 by also including the amplitude and the polarity of the targeted saturated total temperature change that is needed to make the recorded change over the given duration of time. Figure 5 also included the parameters fitted for each segment in an individual frame. Within each set of the parameters, \bar{A} represents A_{step} of Eq. (6), and \tilde{A} represents A_{sinu} of Eq. (9), The subscript of the parameter corresponds to the stage over which the associated set of parameters have been assessed for.

The stage of a small temperature rise of 1 °C over 30

Table 1. The Time-Lapses and Temperature Changes of a Total of Nine Arbitrarily Sectioned Stages

Section	Duration (seconds)	Ending time (seconds)	Temperature change (°C)	Ending temperature (°C)	Oscillating?
1	7	7	0	25	No
2	30	37	1	26	Maybe
3	8	45	22	48	Yes
4	14	59	4	52	Yes
5	57	116	-15	37	Yes
6	63	179	-3	34	Yes
7	19	198	-6	28	Yes
8	3	201	-3	25	Maybe
9	7	208	0	25	No

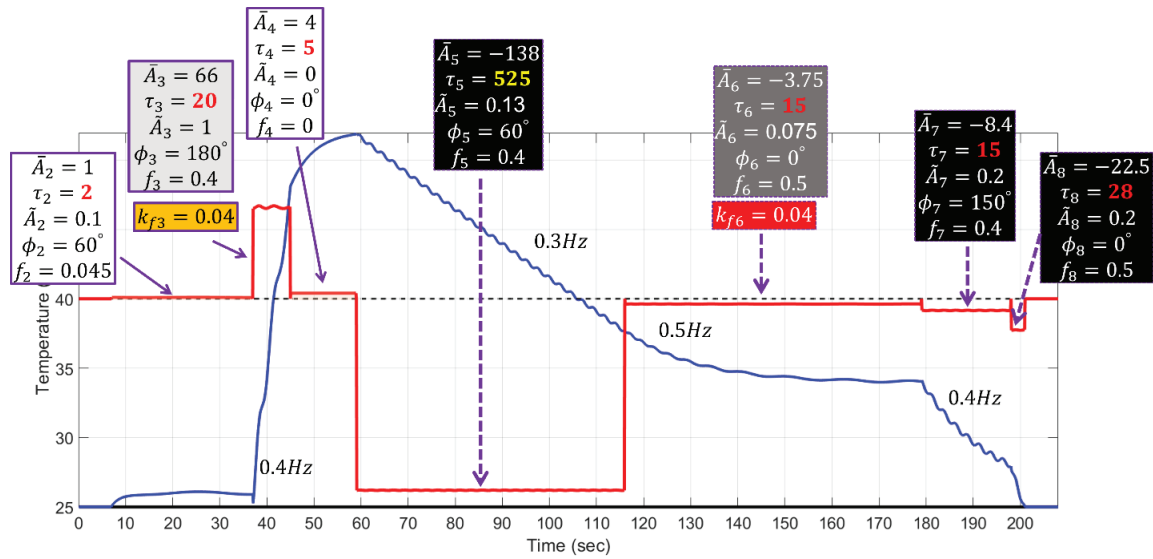


Figure 5. The reconstructed course of temperature changes overlaid with the corresponding courses of the targeted saturation-level change. The framed parameters were the numbers used in the model for producing the traces in each corresponding segment of temperature change.

seconds was fitted with a step change having a saturated temperature increase of 1 °C responded by a time-constant of 2 seconds. Adding a small oscillating pattern having an amplitude of 0.1 °C, a frequency of 0.045 Hz, and a beginning phase of 60° made that segment of trace grossly resembling the corresponding section of Fig. 1. The stage of a large temperature rise of 22 °C over 8 seconds was fitted with a step change having a saturated temperature increase of 66 °C responded by a time-constant of 20 seconds. Adding a small oscillating pattern having an amplitude of 1 °C, a frequency of 0.4 Hz, a beginning phase of 180°, and a ramping frequency of 0.04 Hz made that segment of trace grossly resembling the corresponding section of Fig. 1. The stage of a moderate temperature rise of 4 °C over 14 seconds was fitted with a step change having a saturated temperature increase of 4 °C responded by a time-constant of 5 seconds. No oscillating pattern was added to make that segment of trace grossly resembling the corresponding section of Fig. 1.

In continuation, the stage of a near-linear large temperature reduction of 15 °C over 57 seconds was fitted with a step change having a saturated temperature change of -138 °C responded by a long time-constant of 525 seconds. Adding a small oscillating pattern having an amplitude of 0.13 °C, a frequency of 0.4 Hz, a beginning phase of 60° made that segment of trace grossly resembling the corresponding section of Fig. 1. The stage of a small temperature dropping of 3 °C over 63 seconds was fitted with a step change having a saturated temperature change of -3.75 °C responded by a time-constant of 15 seconds.

Adding a small oscillating pattern having an amplitude of 0.075 °C, a frequency of 0.5 Hz, a beginning phase of 0°, and a ramping frequency of 0.04 Hz made that segment of trace grossly resemble the corresponding section of Fig. 1. The stage of a moderate temperature dropping of 6 °C over 19 seconds was fitted with a step change having a saturated temperature change of -8.4 °C responded by a time-constant of 15 seconds. Adding a small oscillating pattern having an amplitude of 0.2 °C, a frequency of 0.4 Hz, and a beginning phase of 150° made that segment of trace grossly resemble the corresponding section of Fig. 1. The stage of a small temperature dropping of 3 °C over 3 seconds was fitted with a step change having a saturated temperature change of -22.5 °C responded by a time-constant of 28 seconds. Adding a small oscillating pattern having an amplitude of 0.2 °C, a frequency of 0.5 Hz, and a beginning phase of 0° made that segment of trace grossly resemble the corresponding section of Fig. 1.

The amplitude parameters specified in the frames of the segments are the A_{DC} of Eq. (8) and A_{AC} of Eq. (11). By considering the fitted τ and ω in respectively Eqs. (8) and (11), the actual input level of A_{step} and A_{sinu} are deduced, by scaling over C_v . The resulting magnitudes of A_{step} and A_{sinu} are plotted in Fig. 6, after scaling 10 times more and added to a baseline of 25 to make it convenient for visual comparison. The trace of the temperature changes is kept as the reference of the time-course. The solid-line marked rectangles correspond to A_{step} of Eq. (6) and the dashed-line profile containing two damping traces corresponds to A_{sinu} of Eq. (9).

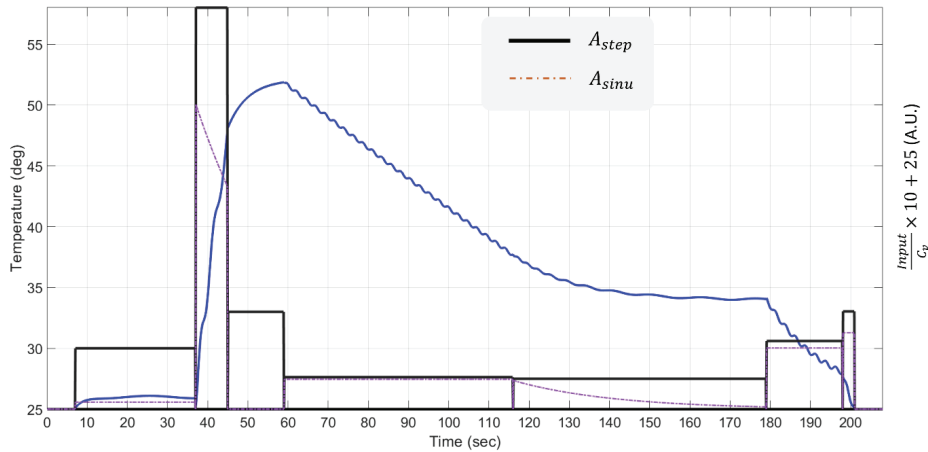


Figure 6. The reconstructed course of temperature changes overlayed with the same shaded areas as those of Fig. 1. The framed parameters were the numbers used for producing the traces in each segment.

Figure 7 displays the magnitudes of A_{step} and A_{sinu} over the 9 segments, of which 7 were associated with temperature deviations from the baseline. The values of A_{sinu} over A_{step} amount to a modulation depth of a maximum of 94%, and a cross-correlation coefficient of 0.95.

DISCUSSION

The temperature change of any mundane object when exposed to a conventional source of heat transfer that does not change the chemical composition of the object is common knowledge or experience. That common experience or knowledge is rigorized by the textbook physics governing simple heat-transfer processes: the rate of the rising or falling of the temperature of the object depends upon two factors, (1) the rate of the amount of heat transferred into or generated within the object and (2) the rate of the amount of heat lost to the environment. When translated to a model of heat-transfer, the rate of the amount of heat of a non-adiabatic object lost to the environment determines the time constant of the change of the temperature of the object, regardless of the heating or cooling process. A faster response of the object-system due to more rapid heat dissipation with the environment will make both the temperature rise and temperature drop happen faster. Should the thermal input or the total dose of energy of thermal conversion be strong enough, the temperature of the object-system will rise to saturation. And if the thermal input is removed or reduced due to natural or forced cooling, the temperature will drop at a time-prorated change the same as the change happening to the rising phase when exposed to a steady-source of thermal input. Therefore, given a FIXED experimental condition under conventional physical con-

figuration, the rate of the amount of heat transferred into or generated within an object may be controllable, but the rate of the amount of heat lost to the environment shall remain fixed. This will dictate that all rising or falling phases of the object’s temperature change must have the same time-constant of the first-order response if described by the single-compartment, at a fixed boundary of the object when interfacing with its environment. In other words, a variation of the time constant of an object in its heat-transfer with its environment is incongruent with a conventional non-adiabatic system.

When it concerns the test-object of the referred document, the only temperature change that could have happened to the object due to physical source could be a slow temperature rise by the bodily heat transferred

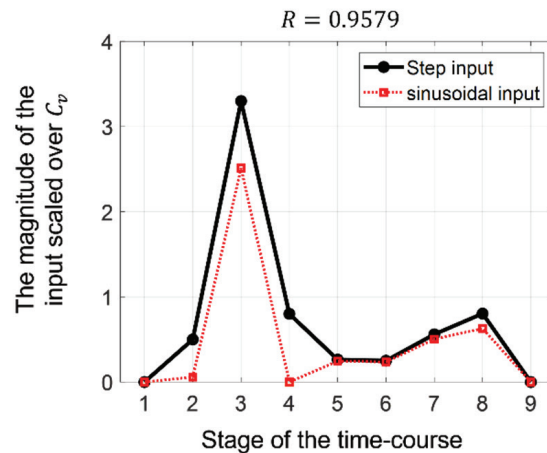


Figure 7. The magnitudes of the step-input and oscillation input used in fitting the temperature changes in all 9 stages.

through the holding hand of the subject of the claimed psi-cho-physical faculty. However, once set, the temperature should not deviate from the set value in the absence of any known exterior source of heat transfer. On the other hand, should there be an exterior source of heat transfer producing heat into or extracting heat from the said test-object, the rate of the temperature change shall be accounted for by the same time constant of the rising or falling phases. And it may be in the sense of the much different rates of the temperature changes over the multiple phases of measurement that makes the reports of the referred document difficult to be placed in a normal physical perspective.

It is not the intention of this work to attempt to validate the results of the referred experiment in its entirety, because there was no additional information regarding the experimental conditions to enable that kind of validation. In virtue of the arguments above applying to a non-adiabatic system, what this work has intended to demonstrate has been that, if the experiment did happen as was reported, and the resulted temperature change of the test object was true as reported, which kind of thermal process, or the system of heat-transfer, could perhaps cause that kind of temperature changes as were reported. The conclusions that can be drawn are that all the reported changes of temperature could be explained in terms of a first-order response that is characteristic of a single-compartment system to an input that may contain a modulation. However, such a projection of the first-order response must be combined with a substantial variation of the time-constant of the responses over the multiple phases of the temperature changes. A variation of the time-constant of the response to an external input will not be congruent with a single non-adiabatic system of fixed physical configuration.

On the other hand, modeling the test-object to exert a first-order response only has made it possible to make the input of the system to be only one kind, that is a modulated input of various DC values having a depth of modulation that can go as low as 0% and as high as 94%. Reports of psychokinetic concerns such as the one reported in the declassified archive have always been extremely difficult, if not impossible to verify, because of reasons that congregate at the following two: (1) any efforts of mechanistic explanations will be stopped by the wall of physical principles that cannot be consolidated by the present understanding of space and time; (2) any efforts of replication are likely futile due to difficulty to replicate exactly the experimental conditions that also have to include the human subject. Any observations or reports of psychokinetic essence would unlikely be accountable unless some kind of consciousness awareness or attention or inten-

tion be taken into consideration. And any consciousness awareness must have an associated neuro-physiological states that in principle could be measured instrumentally, modeled analytically, and modulated experimentally. Should the input to the modeled single-compartment system of the text-object of the referred document be attributable, it must be initiated by or associated with the intention of the said subject of psi-cho-physical faculty. And that psi-cho-physical process may incur a correlative but short-lived neurophysiological state. The modeled low-frequency input of sub-Hertz modulation may suggest that, should the reported experiment be verifiable, the verification would be demanded to concurrently monitoring the neuro-electro-physiology of the test subject, to examine the time-stamped presence of a low-frequency patterns of the neuro-electro-physiology at the sub-Hertz range. Such a test, if can be rendered, would help determine the partial physical nature of the reported phenomenon documented by the declassified archive.

CONCLUSION

This work used a single-compartment model of heat-transfer to analyze the patterns of thermal energy production and dissipation associated with the test object that could have caused the temperature changes reported in an experiment in China appearing in the STAR GATE archive. A first-order low-pass transfer responses between a thermal-energy input and the temperature change is used as the basis of the analysis. The time-constant of the response characterizes the rate of thermal-energy dissipation, whereas the input determines the steady-state condition. For each of the 7 stages of the temperature changes occurring within the total duration of 208 seconds, the time-constant and other input parameters including DC amplitude, AC magnitude, frequency, starting phase, and a rate of frequency relaxation when needed are adjusted to make the estimated temperature change to globally resembling the corresponding reported trace. One rising stage and three falling stages revealed harmonic patterns of 0.4-0.5 Hz, suggesting neurophysiological connections. The DC and AC magnitudes of the sourced inputs over the stages with temperature change made a correlation coefficient of 0.95, and an AC/DC modulation-depth of as high as 94%.

Disclosures. The authors declare no conflicts of interest.

Data availability. Data underlying the results presented in this paper are not publicly available at this time but may be obtained from the authors upon reasonable

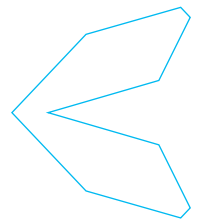
request.

ACKNOWLEDGEMENTS

This manuscript is based upon a full-member workshop presented by the author to the Society for Scientific Exploration on May. 14, 2021. The author thanks the audiences of that workshop for their insightful discussions and encouragements. The author thanks Dr. Leping Zha for helping access the Chinese version of the referred document archived in the declassified STAR GATE files.

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INTRODUCTION
TO THE SPECIAL
SUBSECTION

Frontier Science with ‘Dirty Test Tubes’ - Flaw or Feature?

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<https://doi.org/10.31275/20243425>

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JSE readers are undoubtedly familiar with psychology’s classic demonstration of cognitive bias known as the ‘duck-or-rabbit illusion’—an artfully constructed image that can appear as either animal simply by shifting one’s mental perspective (Jastrow 1899, 1900; cf. Brugger & Brugger 1993). Likewise, there is often hot debate about whether the use of ‘dirty test tubes’—i.e., looser, naturalistic methods that collect observations or measurements under real-world conditions—are ‘flaws’ or ‘features’ in academic studies. This too is a matter of perspective (Mo, 1981). For instance, many scientists encourage rigid experimental protocols to minimize confounds that can contaminate research results. Others adopt more open, in-field designs to optimize the ecological validity of data that better support interpretive frameworks. In fact, Mitchell and Tetlock (2022) argued that social science’s over-emphasis on internal validity versus construct and external validities only leads to theories which fail to replicate in the field and thus cannot be used to understand or address the phenomena in question.

James McClenon’s Target Article (“Online Group-PK Experiments: Hypothesis Testing and Theory Development”) presents a provocative move in this latter direction, which hopefully will stir constructive dialogues and eventual advancements concerning gainful methods in parapsychology and anomalistics more broadly. In full disclosure, this paper received strongly mixed reviews upon submission. Some of the original peer-reviewers appreciated McClenon’s intentional and realistic approach to what is undoubtedly a multivariate phenomenon, whereas others sharply criticized his efforts for an ostensible lack of structure or controls. There were even frank assertions that his work did not qualify as legitimate ‘research.’

But what exactly constitutes ‘research’? Aziz (2017, p. 101) clarified that the term simply denotes a systematic method of obtaining information pertinent to some question or set of questions. There are several ways to obtain data that form the subsequent answers. The procedure selected depends on several factors, including the nature of the issue, the setting in which the research is to be conducted, and the background or disciplinary orientation of the investigators. While basic research aims to discover the fundamental principles of the topic in question, applied research is undertaken with specific practical problems in mind. Naturalistic observation is a valuable tool in this context because of its flexibility, external validity, and suitability for topics that cannot be studied as easily in laboratory settings. Yet, naturalistic observations can involve a lack of scientific control, ethical considerations, potential for bias from observers or participants, and limited generalizability.

These and other important matters are discussed by three diverse researchers who kindly accepted the invitation to prepare Commentaries on McClenon’s approach and conclusions: *James Carpenter* (applied and clinical parapsychology, e.g., Carpenter,



2012), *Walter von Lucadou* (psi and physics, e.g., von Lucadou, 1995), and *Gerhard Mayer* (cultural and interdisciplinary studies of anomalistics, e.g., Mayer, 2009). These individuals did not peer review the original submission, so they represent fresh eyes and perspectives on the underlying issue of dirty test tubes as flaws versus features for hypothesis testing or theory development.

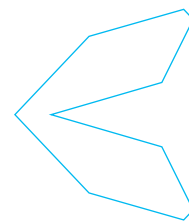
JSE's editorial team makes no judgment about the validity of McClenon's conclusions, but we heartily endorse frontier research using mixed or multiple methods that produce more robust and compelling results than single-method studies alone (Morse, 2003). Therefore, McClenon's naturalistic but controversial methods nicely illustrate the difference between the 'Trojan Mice' versus 'Trojan Horse' approach to solving for complex or unprecedented problems (cf. Bolton, 2020). This useful analogy was obviously inspired by the legendary Trojan Horse story. But instead of a massive wooden horse (i.e., homogeneous and rigid protocols) in this context, we imagine leveraging small, inconspicuous 'mice' (i.e., a diverse array of exploratory or naturalistic methods) to tackle big challenges. Waters (2021) explained it this way: "Picture a great maze that is all but impossible to solve. Two people stand ready to find the way through – a small girl with her shoebox full of mice and a great leader astride his horse. They start. The leader rides in with a plan to explore sector by sector. The girl releases her mice. Eventually a mouse emerges from the exit, while from within can be heard the rider, still executing the search plan. While the horseman is still applying his idea, a mouse has found a way through" (para. 3–4).

McClenon's research might thus be described as a single mouse exploring the real-world maze that represents the thorny and twisted landscape of putative macro-PK (psychokinesis) phenomena, i.e., directly observable 'mind-matter' interactions. The data that he collected with 'dirty test tubes' has yielded several practical insights deserving of careful consideration and follow-up study. Indeed, time will tell which 'mixed methods' (Trojan Horse or Trojan Mouse) will finally crack the code on putative psychokinesis. Meanwhile, hypothesis-testing and theory development often benefit from the simultaneous use of both rigidly controlled experiments that define the Trojan Horse and more naturalistic observations from the Trojan Mice. 'High-internal validity' and 'high-ecological validity' designs both strive to solve a research question and thus are complementary in that each has different flaws and features. Embracing both ap-

proaches from this vantage point, Schwenk (1982) would say that frontier scientists ultimately never need to sacrifice rigor for relevance.

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**SPECIAL
SUBSECTION
TARGET ARTICLE**

Online Group PK Experiments: Hypothesis Testing and Theory Development

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HIGHLIGHTS

A series of real-world experiments suggests that the behavior of certain social groups can influence a pinwheel's movements via mind-matter interactions.

ABSTRACT

The author conducted weekly online group psychokinesis (PK) experiments between Aug. 9, 2019 and Feb. 25, 2023, with the goal of experiencing collective PK. Participant observation experiments were designed to uncover variables associated with group PK experiences rather than prove the existence of PK. Early experiments seemed to increase individual propensity for spontaneous anomalous experience. The group began attempting to influence pinwheel turning on June 12, 2020. Direct observation seemed to reduce pinwheel turning. Certain conversational elements, such as emotion and discussion of psychical research, seemed to enhance turning. A motion-activated Blink camera was incorporated into the protocol on November 8, 2021, allowing documentation of 44 pinwheel experiments. Experiences involved ostensible anomalous pinwheel turning, equipment failures, poltergeist-like events, and trickster effects. Quantitative results included: (1) Significantly more pinwheel turning, as measured by camera activations, during group meetings compared to equivalent non-group periods; (2) Certain discussion topics were associated with rapid turning: occult traditions, psychic readings, psychical research; and (3) Other variables were associated with reduced turning: direct observation, relaxation exercise, miscellaneous discussion topics. Participants felt that the pinwheels exhibited a form of intelligence due to the pinwheel response to group discussion. Trickster effects included turning patterns that changed over time, unusual equipment failures, and 'hiding' behavior thwarting full verification. These features suggest that the replicability of findings may be limited, although a series of methodological guidelines are suggested to increase success. Grounded theory strategies allow theory development, and a new model is proposed to account for the phenomena in question.

SUBMITTED July 29, 2023

ACCEPTED May 10, 2024

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243089>

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KEYWORDS

Ecological validity, PK, psi, psychokinesis, sitter group, trickster effect.

INTRODUCTION

An online group met weekly, beginning August 9, 2019, with the goal of experiencing collective psychokinesis (PK). PK is the movement of objects in ways unexplained by known physical processes. Micro-PK refers

to PK so minute that it requires statistical analysis for detection; macro-PK denotes movements so great that all observers perceive them (for an overview, see, e.g., Cardeña et al., 2015). This study investigates practices that potentially facilitate experiences of group macro-PK.

The research methods featured participant observa-



tion, a well-established social science strategy. Here, researchers immerse themselves within a particular group or social setting to document participants' behaviors, interactions, or practices. Qualitative data from participant observation can include field notes, interview transcripts, photographs, and video documentation. During recent decades, qualitative research has further employed grounded theory, which is a strategy designed to evaluate data in areas with limited theoretical development (Glaser & Strauss, 1967, 2017). Grounded theory involves generating qualitative data (often through participant observation), coding and analyzing these data, refining and quantifying the coding process, and evaluating emerging hypotheses. This procedure results in interpretive frameworks progressively 'grounded' in data. Grounded theory requires flexible approaches since researchers often begin without a formal plan or hypothesis.

Participant observation and grounded theory have proven beneficial in a variety of disciplines, such as anthropology, sociology, religious studies, art therapy, music, health, and education (Bryant & Charmaz, 2007). Participant observation has been used to investigate scientific parapsychology (McClenon, 1984), Asian shamanic practitioners (McClenon, 1994, 2002a), and a sitter group that attempted to conduct psychical research (McClenon, 2018). The present study used participant observation to explore hypotheses derived from Batcheldor's model (Batcheldor & Giesler, 1994) and the ritual healing theory (McClenon, 1997, 2002a) which are explained below. Specifically, the research aimed to: (1) Determine how PK might manifest in an online environment, (2) Identify conditions that facilitate collective macro-PK, and (3) Refine theories regarding belief in PK and shamanism. It is important to note that this research focused on identifying variables associated with collective macro-PK rather than proving its authenticity.

Skeptics routinely question the validity of experiments documenting macro-PK, because witness testimonies seem implausible (McClenon, 2018). In fact, such individuals often regard macro-PK studies as pseudo-scientific. Grounded theory overcomes these presumptions through ongoing evaluations of experimental hypotheses. The *Oxford Dictionary* defines "experiment" as "a scientific procedure undertaken to make a discovery, test a hypothesis, or demonstrate a known fact." The present study fulfills these criteria. It formulates and tests hypotheses with categorized independent variables and quantified dependent variables (macro-PK incidence). The process resulted in identifying variables associated with macro-PK and refinement of a recipe for facilitating group PK experience.

Batcheldor's Model

Batcheldor's theory originated from field experiments involving 'table-tipping', a common form of macro-PK (Batcheldor, 1965-66, 1984; Batcheldor & Giesler, 1994; cf. Björkhem, 1994, for an independently-derived parallel model). In table-tipping, séance participants place their hands on a table and attribute strong movements to paranormal forces. Batcheldor's model describes how artifacts—i.e., events that seem paranormal but are not—allow groups to achieve sufficient belief that authentic PK subsequently occurs. The model assumes that belief facilitates authentic PK. Batcheldor argued that table-tippers unconsciously push the table, thereby generating perceptions that the table moved inexplicably. With sufficient exposure to 'unexplained' movements, participants come to believe in PK, and this enables authentic PK to manifest. Brookes-Smith (1973) likewise demonstrated that the artifact of deliberate fraud can facilitate putative PK through inducing belief. On the flip side, Batcheldor argued that PK is inhibited by: (1) Fear of witnessing psi ('witness inhibition'), and (2) Fear of producing psi ('ownership resistance'). Psychologists note that repeated exposure to fear-inducing stimuli can reduce phobias (Choy et al., 2007); in parallel fashion, exposure to PK artifacts should result in habituation and thus reduce fear of psi.

Batcheldor evaluated his hypotheses through table-tipping experiments. His groups reported table movements, levitations, unexplained breezes, and rapping sounds. In harmony with grounded theory, Batcheldor's experiments facilitated hypothesis testing and theory development. He found that tightening experimental controls reduced PK, a *decline effect*, prevalent in parapsychology (Colburn, 2018; Hansen 2001; Kennedy, 2001, 2016; Lucadou et al., 2007; Radin, 2006). He sought advice from Lucadou, who attributed psi's decline to its quantum nature (Lucadou & Wald, 2014). Quantum 'entanglement' includes the finding that frequent observations of subatomic particles prevent change (Zeno effect). Psi is hypothesized to have similar properties; it is thwarted by skeptical observation, and, as a result, may decline due to past, present, or future observers (Lucadou et al., 2007; Millar, 1978; Radin, 2006).

Batcheldor extended his theory to explain decline effects (Batcheldor & Giesler, 1994). He proposed that a Universal Creative Principle maintains normal reality, but group belief, operating within *pockets of indeterminacy*, allows PK. This idea implies that PK, a rearrangement of normal reality, operates in opposition to normal consciousness. As a result, PK is inherently unstable, a localized disruption of 'shared, normal, or consensual' reality. This idea coincides with: (1) Asian folk beliefs regard-

ing normal consciousness as an obstacle to psi (Bryant, 2009), (2) Parallel ideas supported by parapsychological Ganzfeld research (Baptista et al., 2015), (3) Philosophical theories concerning the supremacy of consciousness over physical reality (Chalmers, 1996; Lanza, 2010), and (4) Parapsychological discussions of 'fear of psi' and the elusive nature of psi (Cardeña, 2015; Hansen, 2001; Kennedy, 2001, 2016, 2024; Tart, 1984).

Batcheldor's model, derived from his sitter-group experiences, offered a recipe for experiencing PK: (1) Regular meetings with the same people; (2) Working in darkness to reduce scrutiny; (3) Stoking a light-hearted or jovial atmosphere; (4) Talking about PK; (5) Tolerating artifacts; and (6) Reducing analytical thought (Batcheldor, 1986-1987; McClenon, 2018, pp. 319-326). Note that Batcheldor's model markedly differs from J. B. Rhine's experimental research paradigm. Rhine sought to preclude artifacts; Batcheldor regarded artifacts as part of the process of facilitating sufficient belief to enable psi.

Owen and Sparrow (1976) described a field experiment that extended Batcheldor's model. In 1973, eight members of the Toronto Society for Psychical Research devised a fictional story regarding a spirit, "Philip." He was supposedly a 1600's English aristocrat who committed suicide after failing to speak up when his mistress was burned at the stake. After spending a year attempting to induce a shared apparitional experience, they followed Batcheldor's suggestions regarding a relaxed session atmosphere. After further meetings, the group witnessed anomalous table movements, levitations, raps that could answer questions, unexplained breezes, and dimming or brightening of lights on command. Because the raps' answers did not exceed the information in Philip's narrative, they attributed these phenomena to group consciousness. Other groups replicated these findings (Laursen, 2016). These results suggest that: (1) Spiritual phenomena might be a product of group consciousness rather than spectral entities, and (2) A group narrative or ideology facilitates success.

The first argument involves issues that psychical researchers, so far, have been unable to resolve (Ritson, 2021). The second argument is supported by the apparent ease with which Philip-type and Spiritualist groups generated PK experiences. Spiritualist groups seemingly have an advantage since their beliefs reduce ownership resistance. Spiritualist groups generating photographic evidence include the Society for Research in Rapport and Telekinesis (SORRAT), a table-tipping group that filmed ostensible PK within locked and sealed containers (McClenon, 1994, 2018, 2019; Richards, 1984), and the Scoble Experiment (1993-1998), which generated extensive photographic evidence of anomalous lights (Solomon & Sol-

omon, 1999).

Much controversy surrounds claims by groups reporting collective PK. Isaacs (1984) described weaknesses in Batcheldor's model. Batcheldor advocates tolerating artifacts that many parapsychologists aim to preclude. Moreover, the artifact induction process is time-consuming, difficult, and cannot untangle artifacts from authentic PK (Barham, 1988; Laursen, 2016; Isaacs, 1984; Wehrstein, 2018). Isaacs (1984) noted that researchers have limited access to Batcheldor's notes, a situation that inhibits direct replications. The present study seeks to overcome this criticism by providing links to video field notes. Batcheldor's model, coupled with a sociology of religion perspective (ritual healing theory), offers a starting point for a grounded theory investigation of group PK.

Ritual Healing Theory

The ritual healing theory provides an evolutionary scenario describing the origin of shamanism, which was humankind's first religious form (McClenon, 1997, 2002a, 2004). It argues that: (1) People in all societies throughout history reported anomalous experiences: apparitions, waking ESP, paranormal dreams, individual and group PK, out-of-body experiences, near-death experiences, synchronicity, sleep paralysis, spiritual healing, and miscellaneous unusual perceptions. These experiences shaped folk beliefs regarding spirits, souls, life after death, and magical abilities, the ideological foundation for shamanism; (2) As a result, Paleolithic peoples devised shamanic beliefs and rituals; (3) Shamanic ritual, involving trance, facilitated spiritual healing due to hypnotic and placebo effects. Spiritual healing provided survival advantages to those genetically pre-disposed to hypnotic and placebo processes; (4) Consequently, shamanism created an evolutionary cycle, selecting for genotypes associated with shamanism, a process that shaped modern spirituality; and (5) All societies have people with genetically-based propensities for anomalous experience, spirituality, and religiosity, making it possible for modern groups to experience collective PK with culturally-specific variations (McClenon, 2018).

The ritual healing theory falls within Winkelman's (2010) shamanic paradigm. Winkelman argued that the physiological variables associated with shamanism conveyed survival advantages. This paradigm is suitable for hypothesis testing and theory development.

Group PK Experiments - Introduction

Hoping to duplicate Batcheldor's research, I organized experimental table-tipping groups in 1982, 1986, 1992, and 1998. In all cases, we met for over three months

but did not experience anomalous phenomena. These replication failures of Batcheldor's model caused me to believe that something was missing from my recipe. Years later, Gimeno and Burgo (2017) attributed robust table-tipping results to a 'presumably gifted subject.' I hypothesized that recruiting gifted participants might lead to success. This presented geographical difficulties since gifted subjects were thought to be rare. But, online meetings allow geographically distant participants to interact with gifted subjects. Therefore, I added four elements to my previous recipe: (1) Recruit gifted subjects for online meetings, (2) Devise a core narrative or ideology, (3) Foster group rapport, and (4) Allow anomalous phenomena to manifest in harmony with its nature, a process facilitating theory development through grounded theory. I subsequently organized an online group experiment to evaluate my revised recipe with the new ingredient list.

This report discusses three experimental phases: (1) Initial group experiments: August 9, 2019 - June 12, 2020; (2) Pilot pinwheel experiments: June 12, 2020 - Nov. 6, 2021; and (3) Motion-activated camera experiments: Nov. 6, 2021- Feb. 25, 2023. Appendix A lists videos describing these experiments. The second and third phases should be regarded as an adjunct to Dullin and Jamet's (2018, 2020) findings. They measured airflow produced by a pump blowing air past a "light spinning object in a non-confined environment" (like our 'non-confined' pinwheels). This allowed them to compare observed effects, ostensibly due to PK agents, to mathematically calculated values which could be attributed to aerodynamic forces. Effects observed when PK-talented subjects attempted to influence the spinning object far exceeded possible aerodynamic effects. Although we did not determine possible aerodynamic forces, we witnessed activity that far exceeded averages during equivalent non-experiment periods. The phenomena *seemed* like macro-PK since it responded, at times, to our conversation and activities. Quantitative evaluations confirmed these observations. We acknowledge that pinwheel turning involves artifacts, but argue that the ambiguity surrounding pinwheels provides 'pockets of indeterminacy' that can facilitate legitimate PK.

Initial Group Experiments: August 9, 2019 - June 12, 2020 (Presentation Video 1: 24:30-36:41)

Five people, three with extensive psi experience, met on August 9, 2019. Previous experiences involved poltergeist-like events, synchronicities, apparitions, and waking ESP. We discussed developing a core narrative, as done by the Philip Group. During the initial meeting, Kate* (* indicates pseudonym) found that her souvenir plague mask

had fallen to the floor from its secure position on her mantle. She told us that she had previously experienced haunting events in her home. Five months later, when the COVID-19 virus arrived in the USA, participants suggested that Kate's poltergeist-like experience was an omen regarding COVID. Although skeptics may disagree with this interpretation, this event illustrates a recurring pattern: participants experienced an unusual event, sought an explanation, and interpreted the incident within the framework of their previous anomalous perceptions.

During later meetings, we failed to follow my PK group recipe: (1) Few participants attended regularly, (2) We did not achieve consensus regarding a core narrative, and (3) Disagreements emerged regarding psychological research, attitudes toward COVID-19, and personality conflicts. Although we did not experience collective macro-PK, the meetings seemed to stimulate increased frequency of individual anomalous experience. Three participants, with previous histories of anomalous experience, reported a series of incidents. Rosanne reported many PK and other anomalous events. For example, she arrived at her home and heard shouting from an upstairs room. She found that her computer had turned on and was loudly broadcasting a comedy program with a life-after-death theme. Other events included poltergeist-like PK, a precognitive dream, synchronicities, anomalous sounds, and unexplained malfunctions of her electrical system. In contrast, Steve described two visionary incidents: (1) An NDE-like vision coinciding with the mystical philosophy advocated by the founder of SORRAT, John J. Neihardt. Steve perceived himself as walking up a spiral staircase to join the All-in-all — like a raindrop uniting with the ocean; and (2) A vision of William Edward (Ed) Cox, deceased SORRAT investigator. In the vision, Ed Cox attempted to provide information to prove his survival after death, an idea he did not advocate during his life (Cox, 2004). His information failed to support afterlife belief but directed us to a further investigation that, ironically, also failed to support afterlife belief. Lastly, Kate related a series of synchronicities involving keys, and images of keys, which she attributed to her recently deceased mother (Presentation video 1: 28:14-31:13). Her experiences implied paranormal processes, supporting afterlife belief.

Over time, we heard voice-like sounds during our meetings, probably feedback noises, but with unusual qualities. The unintelligible sounds were like electronic voice phenomena. In harmony with Batcheldor's model, I hoped these sounds would evolve into evidential messages.

Between April 16, 2020, and May 15, 2020, I conducted a series of informal computer-generated group PK tests. After a few weeks, these experiments achieved sta-

tistical significance ($p = 0.02$). I ended the second series when participants complained that the tests were boring (grounded theory allows methodological flexibility). My observations resulted in two hypotheses: (1) People reporting a particular type of anomalous experience (PK, for example) were likely to report similar experiences ('consistency hypothesis'), and (2) Hearing about, or being with, people reporting anomalous experiences, stimulates others to have similar experiences ('contagion hypothesis'; e.g., Houran & Lange, 1996, Laythe et al., 2017; Ritson, 2021).

Consistent with the contagion hypothesis, I experienced a series of personal poltergeist-like events with themes similar to those described by Rosanne (e.g., raps, unexplained computer behavior, unexplained movement of objects): (1) I heard an unexplained rapping sound in my room at night; (2) Without my knowledge, my computer sent out seven emails, all pertaining to SORRAT – with text derived from previous emails. Five were sent to my email account, but two went to the editor of the *Journal of Parapsychology*; (3) I conducted a candle ritual, recommended by participants, to indicate thanks for these phenomena. Afterward, a photo of Ed Cox inexplicably fell forward, seemingly due to the ritual; and (4) A chair inexplicably overturned in front of a table holding SORRAT photographs (Presentation video 1: 26:06-31:41). Grounded theory recommends paying attention to subjective evaluations; I found these events astonishing since I had no previous history of personal spontaneous PK. I attributed these phenomena to my participation in the group. However, participants began dropping out, perhaps due to personal disagreements or our failure to experience collective macro-PK. I recruited new people and sought innovative ways for PK to manifest.

Pilot Pinwheel Experiments (Presentation Video 1: 22:54-50:27; Presentation Video 2: 13:44-33:50).

In May 2020, I read about successful attempts to influence pinwheels through PK (Auerbach, 2017; McNamara, 2021). I set up a pinwheel and conducted personal experiments, attempting to get the pinwheel to turn through PK. It remained still. The pinwheel was still during my meditation periods each day before our June 12, 2021 meeting.

I set up a cell phone camera so that the group could watch the pinwheel during the meeting. Like the other participants, I watched the pinwheel from another room, with the door closed. The pinwheel was still during the first hour but began turning sporadically during the second hour. Participants addressed questions to the pinwheel, hoping to determine what entity was involved. The

results were inconclusive. When asked a question, the pinwheel remained still but afterward made small turns. After the session ended, the pinwheel became still and was still when I monitored it during the following week.

During our next meeting (June 19, 2020), I was amazed when the pinwheel began turning simultaneously with the first person's arrival. We decided that the pinwheel could indicate "yes" by turning and "no" by remaining still. We asked questions, but responses were ambiguous. The turning stopped when the meeting ended.

I monitored the pinwheels closely during the following week. I left the meditation room door open and observed the pinwheel whenever I passed its doorway. It was still during my meditation sessions and during all other observations. The next week (June 26, 2020), Loyd Auerbach conducted an online spoon-bending party with our group. A new participant, Boris, created a remarkable bend during this session. Poltergeists had troubled him for decades. He described a recurring motif: an object would disappear, he searched for it, and, after giving up, he found it in an obvious place (Barrington, 2018, labels this as JOTT, "just one of those things").

I taped over the air vent in my meditation room to reduce air currents and placed two aluminum pinwheels and one paper pinwheel on the meditation altar (Presentation videos, Appendix A, portray these pinwheels). The pinwheels were still during my daily meditation and whenever I checked on them. I closed the door of the meditation room and made a point to entering and exiting in a manner that reduced my disturbance of the air in the room. Immediately before our July 3, 2020, meeting, I checked the air vent to ensure it was sealed. I observed that the pinwheels were still. I set up the cell phone camera, left the room, and closed the door. The room was "sealed off" from outside air currents. I monitored the pinwheels through the cell phone camera. They were still.

The center pinwheel began turning when the first participant arrived, another remarkable 'coincidence'. The pinwheel stopped turning when the group focused their attention on it. It also stopped turning during our relaxation exercise but began turning when the exercise ended. It stopped turning when the last person left. I found these correspondences astonishing. Although skeptics argue that anecdotal testimony is inadequate to establish paranormal claims, these experiences affected my belief. I regarded the 'PK hypothesis' as equivalent to a counter explanation, the 'heat convection' hypothesis. Rising warm air, passing through a pinwheel, could cause it to turn.

The pinwheels (seemingly) remained still throughout the week. I set up mirrors around them so that the camera could monitor the entire room. A mobile, hanging in

the room, functioned as a kind of control device. When I entered the room, the pinwheels often remained still, but the mobile sometimes turned slightly. This indicated that the air in the room had been disturbed. The pinwheels were sometimes disturbed, but their movement declined after about a minute, suggesting that the air disturbance had declined.

On July 10, 2020, I again set up the cell phone camera. The mobile and pinwheels were still. The air vent and door were closed. As before, the center pinwheel turned when the first person arrived. The mobile was still. I entered the meditation room and placed a plastic dome over the turning pinwheel. The pinwheel stopped turning. Later, I removed the covering and left the room. The pinwheel remained still for a time, then began turning sporadically.

Most participants advocated the belief that the center pinwheel was turning paranormally. Boris explained that PK pinwheels, having no aerodynamic blades, are not designed to turn when exposed to air currents. Blowing on a PK pinwheel does not cause it to turn regularly. He argued that steady turning in a closed room should be interpreted as PK. Bob* disagreed. "Nothing paranormal is happening," he said. "When you enter the room, the air is disturbed. The fact that it does not turn when you cover the pinwheel means that nothing paranormal is happening." Other participants suggested, in line with Batcheldor's theory, that scrutiny thwarts PK. "It stops turning when we look at it," they noted. During that experiment, some unusual sounds, probably microphone feedback, occurred while the pinwheel was turning rapidly. At one point, a voice seemed to say, "So strong" and later "Black Elk." Although I dismissed these voices as artifacts, I explained to the group that Black Elk was the friend and mentor of John G. Neihardt, the founder of SORRAT. As before, pinwheel responses to our questions were ambiguous. I thought that, unless there were further messages, the words should not be given much credence. We had no recording of the words.

During subsequent weeks, I was repeatedly amazed when the center pinwheel began turning when, or just before, the first participant arrived. Sometimes, two pinwheels turned, often in opposite directions. Placing a plastic dome over a turning pinwheel caused it to stop. Sometimes, after I placed a dome over a turning pinwheel, a nearby pinwheel began turning. Merely saying, "Look! It's turning" seemed to cause the pinwheel to stop. Our attempts to attribute the turning to a spiritual entity, such as Black Elk, failed to generate conclusive results.

As the weeks passed, I noticed patterns: (1) typically, the center pinwheel turned clockwise while the others were still; (2) When two pinwheels were turning, the center one tended to turn more rapidly; (3) Pinwheels often

turned in opposite directions; and (4) The pinwheels revealed a variety of configurations regarding turning direction, speed, and number of pinwheels turning. The variety of configurations reduced my faith in artifact explanations since my heat convection hypothesis was unable to explain pattern variations.

I increased my attention to 'security' surrounding the pinwheels. I kept the meditation room door closed. I entered the room as rarely as possible. I regularly inspected the sealing over the air vent. I avoided entering the meditation room during experiments unless required by an experimental procedure. I wanted to identify variables correlated with turning. My impression, in Jan. 2020, was that frequency of activation and speed had declined. I tried to quantify the turning. From Feb. through April, I asked participants to evaluate pinwheel activity using a subjective scale ('0' = no turning; '10' = turning faster and more often than ever before). I calculated weekly consensus scores by averaging responses. This strategy revealed variations but no clear patterns. Although I assumed that heat convection currents were a factor, this hypothesis did not allow accurate predictions.

In late April, the pinwheels revealed a new pattern, difficult to evaluate. They remained still much of the time, but sometimes exhibited bursts of turning, particularly when someone expressed an intense emotion, described an anomalous experience, or explained a psychological research theory. Participant evaluations diverged; we did not agree regarding whether bursts of activity, coupled with stillness, indicated declining or increasing activity. My scoring system seemed invalid and unreliable, and in May, I ended my attempts to quantify the turning.

On June 19, 2020, I experienced the first of seven 'disappearing-reappearing' events (Barrington, 2018, JOTT). I had not had this type of experience before. The JOTT events were like those described by Boris (Presentation video 2: 16:46-18:27). My hearing aid batteries, on the nightstand beside my bed, disappeared. I searched diligently for two days, gave up, and on the third day, I found them, in clear sight, on top of a stack of papers that I had moved during my search. Further, JOTT incidents varied in the degree that they might be explained as artifacts (Presentation Video 1: 32:52-34:32). Two events, which seemed authentic at the time, were discovered to be possible artifacts in ways that seemed strangely improbable. I considered the idea that these events were 'staged' by the unknown 'energy' so that I would understand, on an experiential level, how artifact induction worked. During the final JOTT event (Nov. 27, 2020), my wife helped me search, increasing my certainty that the event was authentic. After Nov. 27, there were no further JOTT incidents. These events increased my belief in Batcheldor's

model. Although ‘exceptional claims require exceptional proof’, my new opinion was that paranormal perceptions were not as unusual as I had assumed. Experiences which happen somewhat often cannot be deemed ‘exceptional’.

During the summer of 2020, the pinwheels behaved more erratically. The center pinwheel sometimes began turning a half-hour before anyone arrived and continued hours after everyone left. During the August 13, 2020, session, the pinwheels became still, and the mobile began turning inexplicably. The pinwheels exhibited unexpected and innovative patterns. For example, for many months the center pinwheel had turned clockwise, and the other pinwheels turned in various directions. The center pinwheel began turning counterclockwise while the other pinwheels were still. Then, during another phase, the center pinwheel remained still while the uncovered pinwheel, on the right, was active. Artifact hypotheses seemingly did not provide explanations for these patterns. I speculated that a feature of the phenomena (assumed to be PK) was unexpected change.

On August 27, 2020, the pinwheels ended a low-activity period with an unusual burst of turning, mainly by the center pinwheel, six revolutions per minute, with only intermittent periods of dormancy. The turning seemed more rapid and consistent than during all previous sessions. During this experiment, we played two simple games with a new deck of cards. I broke the seal and fully shuffled the deck. The deck included 52 cards, a joker, and two extra jokers (replacement cards). Our first task was to guess the color (red or black) of the seven cards that I drew. Although our guesses did not deviate much from chance, two of the seven cards were the two extra jokers, a highly improbable combination. I pondered this situation. The pinwheels were turning strongly. Were the two jokers connected to this?

We then conducted ‘readings’ for each participant. I randomly drew a card, and we discussed the meaning of this card for that person. I then returned the card to the deck, shuffled the deck, and drew a card for the next person. To my surprise, Bob and David got the same card, the ten of diamonds, another statistically rare outcome. What was going on? When my turn came, I drew the true Joker. “What does this mean?” I asked. “You’re the joker,” Melanie replied. I was unsure how to interpret these events. The improbable card combinations, coupled with the rapid turning, seemed meaningful. It was as if I had done a magic trick to fool myself. I hypothesize that shamanism, for authentic practitioners, was like that. Skeptics assume that fraud or dissociation are involved, but I speculated that a creative force played a role. The series of JOTT experiences had changed my attitude. The Aug. 27 events were a continuation of this process.

The Aug. 27 events were so improbable that I decided to videotape the pinwheels before each session to document their pre-experiment stillness. I had previously hesitated to do this because documentation seemed to disrupt the turning. My ‘control videos’ sometimes showed stillness but sometimes captured $\frac{3}{4}$ turns (much less than what we observed during our experiments). I did not try to video the pinwheels during the meetings because mere observation seemed to thwart their turning.

Bob sent me a long email explaining that, unless I got the pinwheel to turn within a sealed container in the direction specified before the turn, the results could not be considered valid. I noted that, although some people claim to be able to do this (Cory, 2020), Batcheldor regarded highly controlled conditions as not psi-conducive. I have observed, over the years, that skeptics often require psi to have characteristics that it lacks. The turning again declined. I placed a small candle by the pinwheels to see if this would help them turn. I hypothesized that the candle’s heat would introduce artifact effects, increasing the turning. Although the pinwheels sometimes wavered erratically (probably in response to the candle heat), the heat did not have consistent effects. Instead, we witnessed other unexplained events. During one meeting, the candle flame wavered vigorously, as if affected by a strong breeze, while the pinwheels remained still. The entire candle burnt down during this session. Another time, a pinwheel turned strongly while the candle flame remained still. On another occasion, the pinwheel closest to the flame was still while one further away turned strongly. After Nov. 12, 2020, I discontinued burning candles since the effects were inconsistent. I had hoped to discover artifact strategies for getting the pinwheels to turn more strongly, but the candle experiments failed to generate consistent results.

On March 16, 2021, I noted that the center pinwheel was turning reliably. I opened the meditation room door and aimed my iPad video camera at it. It came to a halt. Subsequent attempts resulted in videos showing a pinwheel, previously turning, slowing down, and becoming still. Although I was not able to document rapid turning, the videos repeatedly captured a pinwheel demonstrating ‘hiding behavior’. The pinwheel became inactive when observed by the video camera. Was my presence disrupting the air currents which caused the turning? I subsequently devised a strategy to record turning without opening the meditation room door. Sound directs the visual focus of the Zoom system, so I turned on the Zoom video system and knocked on the closed meditation room door. The knocking sound caused pinwheel activity to be recorded. As previously, the videos showed a turning pinwheel coming to a halt. My observation seemed to thwart

the pinwheel's turning.

In response to extremely critical comments by a woman who identified herself as an official from the Society for Scientific Exploration, I placed a clear plastic dome over the left pinwheel for many weeks. As had occurred previously, it stopped turning, and, in general, the pinwheel activity declined. I experienced a crisis of faith. Have my previous experiences been valid? In July 2021, Boris set up a kind of 'micro-lab', a plastic box with an airtight lid, like the original SORRAT mini-lab experiments (McClenon, 2018; presentation video 2: 23:35-27:00; presentation video 3: 10:20-12:07). He placed various objects and two pinwheels inside, which he hoped would turn anomalously. He set up a camera that took a photo every 3 seconds. On July 22, 2021, while in the room, he noticed that a pinwheel was turning. It continued turning in the sealed container with no source of air current inside the box. When he looked through past recordings, he found two other instances where his system had documented pinwheel turning in the sealed container. Following these results, his system documented no further anomalous turning.

Bob became increasingly irritated when others argued that the pinwheels were turning in response to our conversations. We noticed a common pattern—a pinwheel started spinning vigorously when someone spoke enthusiastically. The connection seemed obvious. Although Bob witnessed these rapid turns, he remained skeptical. During a session in which he and I were the only ones present, the pinwheels did not turn. In late August, he dropped out of the group. In August and September, I continued my attempts to video pinwheel turning. As previously, when I activated the camera, the turning slowed and stopped. Melanie suggested that I purchase a motion-activated camera, but I hesitated because I assumed increased documentation would thwart the phenomena. In October, the pinwheel activity seemed to increase, and on October 21, 2021, I successfully recorded the central pinwheel completing a full revolution in 39 seconds. I also documented a pinwheel turning while Boris spoke emotionally about German attitudes toward World War II (documenting the hypothesized emotion-turning relationship). These events led me to believe that the motion-activated Blink camera might generate useful evidence.

Motion-activated Camera Experiments (see Appendix A)

On Nov. 6, 2021, I installed a motion-activated Blink Camera, purchased through Amazon. On Nov. 11, 2021, I again placed a plastic dome over the pinwheel on the left.

This "completely covered" condition fulfilled requests by skeptics to rule out air currents as an artifact explanation. Although the camera system functioned properly when I tested it, it activated on only two occasions (Nov. 14, 2021, and Dec. 9, 2021) in the next few months, recording $\frac{1}{2}$ revolution of the center pinwheel in 25 seconds. These successes were followed by apparent camera failures (the pinwheels turned, but the camera failed to activate). The Blink camera dysfunctions seemed anomalous since the camera activated properly whenever tested.

On Jan. 20, 2022, the camera captured an unexplained light moving across its field of vision. This event was followed by experimental success. During the Jan. 27, 2022 experiment, the Blink camera seemed to function properly, documenting turning 29 times in 2 hours. The pinwheel under the dome remained still. Due to this success, I began recording the number of Blink camera activations for each of the 24 hours of the day. This would allow documentation of a hypothesized relationship between daily heat patterns and pinwheel turning. I set the experimental time from 19:00 to 22:00 because the phenomena, at the time, seemed to "switch on" before people arrived (19:30) and remain active after they left (21:30). Each week, beginning Feb. 3, 2022, I calculated the 6-day average of Blink camera activations between 19:00 and 22:00 and compared this value to the number of activations between 19:00 and 22:00 during the group experiment.

This experimental strategy was followed by unexplained camera malfunctions. On Feb. 3, 2022, the Blink camera functioned properly before participants arrived. It stopped functioning precisely when the first person came (19:30) and started functioning exactly when the group meeting ended (21:30). During this meeting, we watched the center pinwheel turn on multiple occasions, but the Blink camera did not activate. This equipment failure exemplified a 'psi trickster' effect, i.e., a propensity for psi to manifest in ways that suggest its existence but inhibit its investigation (Hansen, 2001; Kennedy, 2024).

I purchased a candle chime to illustrate how heat convection currents can cause a pinwheel to turn. I considered using the candle chime as a PK target. When the chime candles are lit, hot air flows through the candle chime blades, causing attached rods to strike the chimes. On the afternoon of Feb. 10, 2022, the unlit candle chime was on our dining room table. My wife and I watched it turn for about 30 seconds, even though the candles were not lit. I placed my hand close to the chime but could not detect heat or air currents. On the afternoon of Feb. 12, 2022, our 11-year-old granddaughter, while alone, also observed the candle chime turn without explanation. This phenomenon has not occurred again and remains unex-

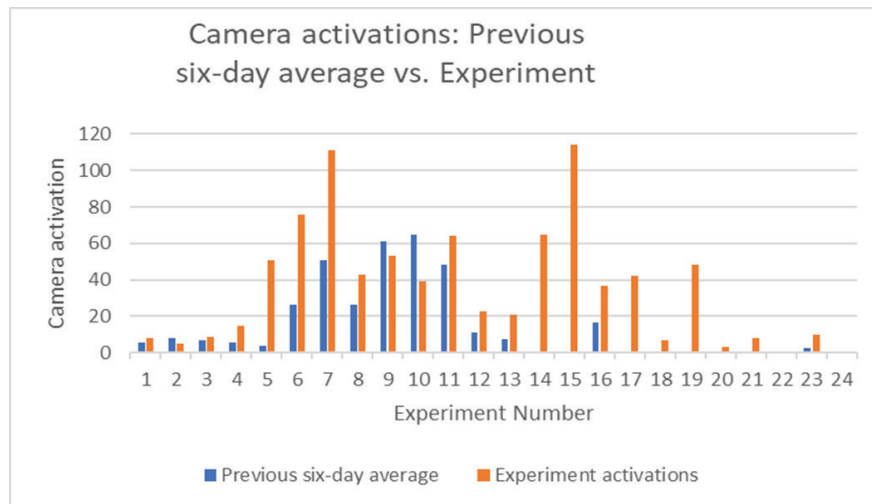


Figure 1. First Experimental Series, Jan. 28 - July 7, 2022; 24 Experiments.

plained.

During our Feb. 10, 2022 experiment, the Blink camera malfunctioned during the first half of the session but functioned properly during the second half (Nov. 2021-Feb. 2022 video: 24:36-26:24). On Feb. 17, 2022, after the pinwheels were very active, I began making weekly videos summarizing each session and supplemental videos for special experiments. Sometimes, the cellphone camera audio failed to function during these experiments. Appendix A lists three presentation videos, 44 experimental sessions (33 with good audio), and nine supplemental videos.

On Feb. 17, 2022, I devised two hypotheses, based on previous observations (Nov. 2021- Feb. 2022 video): (1) Hypothesis 1, group meeting hypothesis: Activations during meeting hours (19:00-22:00) were predicted to exceed average activations during equivalent times for the previous week. My discussion includes investigating counter and artifact hypotheses regarding heat convection currents. I hoped to accurately predict pinwheel activity, based on heat convection hypotheses, but these predictions were rarely successful; and (2) Hypothesis 2, conversation topic hypothesis: Certain variables were predicted to be correlated with rapid pinwheel turning (video examples provided): (a) talking about anomalous experiences (Feb 17: 8:10-8:25), (b) speaking emotionally (Nov. 2021-Feb. 2022: 16:20-16:45), (c) talking about psychical research (Nov. 2021-Feb. 2022: 16:45- 17:12), (d) laughter (Feb. 24: 6:07-6:44). Other variables were predicted to reduce pinwheel turning: (a) Relaxation exercise (Feb. 17: 8:27-8:44), (b) Direct observation of pinwheel turning (Nov. 2021-Feb. 2022, 20:17-22:08), and (c) Discussion of miscellaneous topics (topics not listed as enhancing turning).

Hypothesis 1: Group Meeting Hypothesis

This hypothesis was evaluated through two series of experiments. The first series ended after 24 experiments (Feb. 3, 2022 - July 21, 2022) when I departed for Scotland for a month. A second experimental series (Sept. 1, 2022 to Jan. 12, 2023) ended with our departure for a month in Panama.

Figure 1 portrays activation distribution during the first 24-experiment series. The average number of activations on non-experimental days (19:00-22:00) was 14.5. The average number of activations during the experiments (19:00-22:00) was 35.5. A *t*-test comparing the non-experiment to experiment activations achieved statistical significance ($t = 3.41$, $df = 23$, $p = .0024$). These statistics indicate that the probability that the difference between test and control means was due to chance was very slight (less than 3 in 1000). Although cell phone camera heat might affect pinwheel turning, special experiments reduced faith in this hypothesis (Video 13). Covering the cameras with plastic domes did not affect turning of the pinwheels. In addition, the 'cell-phone heat hypothesis' fails to explain why there were many experiments with no pinwheel turning.

On Feb. 22, 2022, I conducted a special experiment to test the group meeting hypothesis. At the time, the average number of activations during experimental sessions was 13.75. During the 'non-group' experiment, the camera activated 27 times, exceeding that average. This result indicated that 'group energy' was not required to achieve a high activation rate – reducing faith in the group meeting hypothesis.

While this experiment was in progress, at 21:26, my wife and I were in our kitchen, facing the counter. We heard three distinct thumps and turned around to see

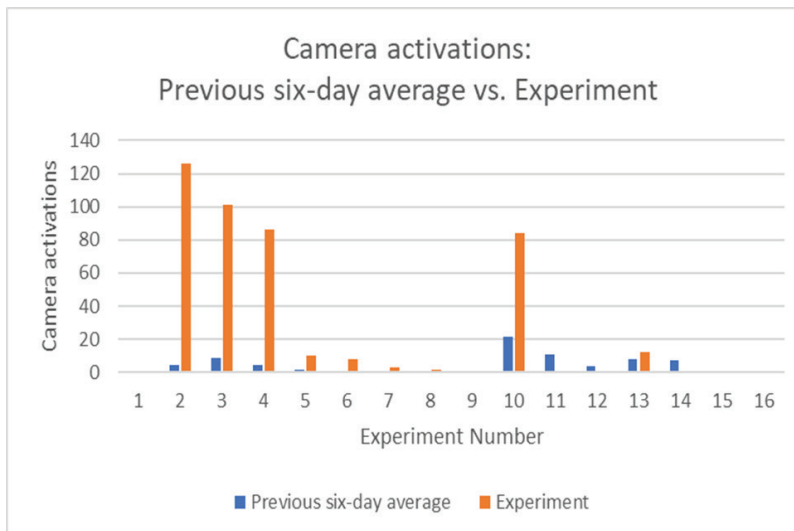


Figure 2. Second Experimental Series, Sept 1-Jan. 12, 2022 - 16 Experiments.

that a liquor bottle, previously in a secure position on top of the refrigerator, was now upright on the floor, with pieces of its cap on both the counter and floor. Apparently, it had fallen to the counter, broken its cap on the countertop (where a piece remained), and then struck the floor (leaving two other cap pieces), before bouncing to an upright position. No alcohol had spilled, except for a drop on the counter. The position of the capless, upright, half-full bottle on the floor seemed improbable.

I checked the Blink camera system and found that, during its 18th experimental activation, it recorded a 5/8 clockwise revolution in 25 seconds; the audio recorded the three distinct ‘thumps’ we heard in the kitchen (Video 3a, Feb. 22, 12:30-14:40). Later, I tried to simulate the bottle event (Video 16a, 18:06-12:23). I glued the cap pieces together, filled the bottle half full of water (equivalent to the previous alcohol level), and screwed the cap on the bottle. I placed the bottle in its original position (far from the edge), and gently pushed it off the edge of the refrigerator. The bottle shattered on the counter, throwing glass shards and cap pieces on the counter and floor. This outcome implied that the original event had poltergeist qualities. These events, counter to the *group meeting* hypothesis, suggest a *trickster* effect.

On June 16, 2022, following Eric Dullin’s advice, I modified the experiment protocol by turning over the left pinwheel’s plastic cover so that it was open at the top. The inverted dome created a situation in which lateral air currents would have limited effects, but skeptics could attribute pinwheel turning to heat convection or currents from above. By this date, we had given names to the pinwheels. The pinwheel inside the open dome was named “Alice”, and the center pinwheel was “Lefty.” Lefty began turning exactly slowly enough so that the camera did not activate (less than ½ turn in 25 seconds). Since Lefty had

previously turned more rapidly, this seemed unusual. Alice turned rapidly inside her open-mouthed container, but this motion did not trigger the camera (perhaps the plastic barrier disrupted the Blink camera motion detection system). Alice’s turning seemed anomalous since her container thwarted lateral air currents. On July 7, 2022, I introduced a second Blink camera, focused specifically on Alice. I hoped to document Alice’s turning inside the open dome. This camera functioned properly when tested but did not activate during experiments on July 7 and 14, 2022. These events fit a pattern observed previously, i.e., increasing experimental controls seemed to stimulate equipment failures.

On July 23, my wife and I left for Scotland, ending the first experimental series. During our first full day in Scotland (July 25, 2022), the Alice camera documented eight incidents in which unexplained lights fluctuated and moved mysteriously on the alter while the pinwheels were still (Video 26a, 5:11-9:34). The sky was overcast that day; this phenomenon had not occurred previously. During the rest of our month in Scotland, there were no further lights, and there was only one camera activation that showed a pinwheel turn.

During the second 16-experiment series (Sept. 1, 2022, to Jan. 12, 2023), I conducted experiments involving the Alice container covering. In harmony with artifact hypotheses, I found that fully covering the container ended all Alice turning, partial covering reduced turning, and no covering resulted in rapid turning (anomalous since the container blocked lateral air currents and the other pinwheels were still.) These experiments were associated with irregular camera failures. I am uncertain how to interpret these results.

Figure 2 compares the previous six-day average activations to group experiment activations during the

second series (videos 27-42). The mean of experimental activations was 27.12. The mean of the previous six-day averages was 5.58. A *t*-test comparing experimental activations to previous weekly averages was statistically significant ($t = 2.13$, $df = 15$, $p = .05$). The probability of this result occurring by chance was one out of 20. These results provided further support for the hypotheses that the group facilitated pinwheel turning, even though there were only four occasions during which the experiment activations far exceeded the previous six-day average.

Figures 1 and 2 suggest that the unexplained group effect was active only on particular occasions rather than consistent over time. Both series contained sessions when pinwheels turned rapidly, but the Blink camera inexplicably failed to activate.

Hypothesis 2: Conversation Topic Hypothesis

This hypothesis specified that rapid pinwheel turning was associated with conversations regarding specific topics (psychical research, anomalous experience, emotions, laughter, occult traditions, and psychic readings). Other variables were associated with reduced turning (pinwheel observation, relaxation exercise, and miscellaneous conversations). Available data consisted of my video notes from each session. Turning speed was measured by the number of revolutions during each 25 second camera activation. Activations with 7/8 revolution or less were deemed 'weak' while activations with more than 7/8 revolution were labeled 'strong.'

Appendix A lists 44 videos, 33 of which contain audio

narratives linked to camera activations. I devised guidelines to define the conversation variables. For example, *anomalous experiences* were defined as narratives mentioning apparitions, paranormal dreams, waking ESP, out of body experience, near death experiences, spiritual healing, synchronicity, UFOs, and spirit possession (McClenon, 2000, 2002b, 2012, 2013). An *emotional topic* was identified by specific words within the narrative associated with intense emotion (death, deceased, dying, cancer, COVID, sick, sickness, loss of child, heart attack, emergency, giving up smoking, race, stalking, terrible, war, foster child, horrible, any profane word, compassion, spiritual, mystical). An *observation* coding indicated that a speaker mentioned seeing a pinwheel turning. Narratives were labeled *miscellaneous* if they were not previously coded regarding a conversation topic.

The coding process uncovered two sub-categories, related to psychical research, hypothesized to be associated with rapid turning. If the narrative mentioned an attempt to gain information through ESP, it was coded *psychic reading*. Narratives referring to occult, mystical, or paranormal traditions were coded as *occult traditions*. Coding categories were not mutually exclusive; narratives could receive multiple codes. Coding resulted in 260 classifications within seven categories.

I regarded my guidelines for coding *emotion* as inadequate. Speakers sometimes revealed emotion without using an identifying word. Emotion was revealed through speed and quality of vocalization, rather than vocabulary. I felt unable to devise valid coding guidelines.

Table 1 indicates that the three categories most associated with rapid turning were *occult traditions*, *psychic reading*, and *psychical research*. The three categories most associated with reduced turning were *relaxation exercise*, *miscellaneous*, and *observation*. Strong turning occurred most frequently during the discussion of occult traditions (62.5%), never during the relaxation exercise (0%), and rarely (6.1%) during the discussion of miscellaneous topics. These patterns coincide with the conversation topic hypothesis.

Table 1. Narrative Code and Speed of Pinwheel Turning

Coding Category	Turning Speed		Total
	7/8 Turn Or Less	More than 7/8 Turn	
Predicted: Enhanced Turning			
Psychical Research	38 (55.9%)	30 (44.1%)	68 (100%)
Anomalous Experience	20 (69.0%)	9 (32.0%)	29 (100%)
Emotion	13 (61.9%)	8 (39.1%)	21 (100%)
Laughter	15 (71.4%)	6 (28.6%)	21 (100%)
Occult Traditions	6 (37.5%)	10 (62.5%)	16 (100%)
Psychic Reading	6 (46.2%)	7 (53.8%)	13 (100%)
Enhanced Total:	98 (58.5%)	70 (41.7%)	168 (100%)
Predicted: Reduced Turning:			
Miscellaneous	46(93.9%)	3 (6.1%)	49 (100%)
Pinwheel Observation	22(72.0%)	9 (29.0%)	31 (100%)
Relaxation Exercise	3(100%)	0 (0%)	3 (100%)
Reduced Total:	71(85.5%)	12 (14.5%)	83 (100%)
Totals:	175(67.3%)	85 (32.7%)	260 (100%)

Table 2. Variables Predicted to Enhance/Reduce Turning.

Variables Predicted to	Turning Speed		Total
	7/8 Turn Or Less	More than 7/8 Turn	
Enhance Turning	98 (58.3%)	70 (41.7%)	168 (100%)
Reduce Turning	71 (85.5%)	12 (14.5%)	83 (100%)
Totals	169 (67.3%)	82 (32.7%)	251 (100%)

Table 2 portrays a chi-square evaluation of the conversation topic hypothesis. Variables predicted to be associated with pinwheel turning were far more associated with strong turns than the variables predicted to be associated with weaker turns (41.7% compared to 14.5%). The chi-square result was highly significant ($\chi^2 = 18.7$, $df = 1$, $p < 0.000015$). The probability of this result occurring by chance was less than 2 out of 100,000.

I calculated the probability that the pinwheels remained still during the relaxation exercise. The relaxation exercises lasted, on average, about eight minutes. The proportion of time associated with the relaxation exercise was $8/120 = 0.067$ or 6.7%. There were 938 camera activations during the 30 sessions during which there were no audio or Blink camera malfunctions. The number of relaxation exercise activations expected by chance was $938 \times 0.067 = 62.8$. The actual number of camera activations during relaxation exercises was three, none of which were strong turns (proportion: $3/938 = 0.003$). A difference of proportion test (chance, 0.067 vs. actual, 0.003) yields $z = 7.54$, one-tailed test, $p < 0.00001$. It is very unlikely (less than 1 out of 100,000) that this result occurred by chance.

In summary, the statistical analyses imply that: (1) Group meetings were associated with increased pinwheel turning, and (2) Variables anticipated to be conducive for pinwheel turning were associated with greater pinwheel turning than the variables predicted to inhibit pinwheel turning.

These statistical analyses fail to fully capture the events that most affected belief. Some of the strongest turns occurred while Heather emotionally described a powerful precognitive dream and a strange synchronicity that shaped her life (May 5, 2022: 10:35-14:54). She described a symbolic precognitive dream about a bear and the loss of a child, coupled with a strange synchronistic event involving a bear cub found inside her car. Years later, she found that the dream coincided with a major life tragedy. She stated, while the pinwheel made its most rapid turn of the session, "It was such a strong, formulating, mystical experience that I ended up being a social worker and I worked in maternal child health." I agree with her when she says, "Do I doubt the experience? No! But something happened. I can't prove it!"

Although space does not allow further example cases, participants often observed the pinwheels suddenly turn rapidly when someone spoke with conviction. Our impression was that the pinwheels were encouraging rapport, advocating specific ideas, and supporting particular research strategies.

Artifact and Trickster Effects

The trickster archetype is a character, in mythology and folklore, associated with ambiguity, cunning intelligence, disruption, unpredictability, paradox, irrationality, deception, humor, anti-structure, and the paranormal (Hansen, 2001). Within Batcheldor's model, the psi trickster hides when scrutinized, a behavior that thwarts replication (Hansen, 2001; Kennedy, 2001, 2016, 2024).

Pinwheel trickster characteristics included hiding behaviors, camera failures, poltergeist-like events, and unexplained changes in turning patterns. The trickster marks a paradox. The phenomena reveal itself yet, when subjected to scrutiny, hides. Direct observation, and early attempts at video documentation, seemed to hinder pinwheel turning. Fully covering pinwheels ended their turning. Introducing the Blink cameras resulted in equipment failures, reduced turning, unexplained lights (Jan. 20, 2022 and July 25, 2022), and three poltergeist-like events (Feb. 10, 12, 22, 2022). Candle experiments, which introduced artifacts, resulted in unusual interactions between flame and pinwheels. Camera malfunctions had anomalous characteristics; a camera malfunction coincided exactly with the starting and ending time of an early Blink camera experiment (Feb. 3, 2022). Pinwheel turning speed, turning direction, and combinations of pinwheels turning direction, changed over time, without explanation.

The psi trickster complicates experimental replication. The phenomena sometimes seem to purposely violate expectations, refusing to reveal consistent patterns. For example, on Sept. 15, 2022 (video time: 6:00-7:00), I hoped to trigger pinwheel turning by asking a participant to tell an anomalous experience story. The pinwheels, previously still, activated four times during her brief narrative. Subsequent attempts to verify the *anomalous experience* hypothesis failed (examples: Jan. 12, 2023). It was as if the phenomena wished to both reveal and conceal its characteristics.

Trickster effects convey an absurd, unscientific quality. They render findings unsuitable for scientific analysis. Their appearance refutes attempts to portray the study as methodologically valid. Summarizing decades of experience, Beloff (1994) concluded that, "Paranormal phenomena may not just be elusive, but actively evasive" (p. 7).

Group PK Recipe Evaluation

Batcheldor's model identified guidelines for experiencing group PK (Batcheldor, 1987; McClenon, 2018, pp. 319-326) to which this study added four factors to the recipe. Fortunately, the results permit a partial evaluation

of these suggestions:

1. *Have regular meetings with the same people.* We did not fully meet this criterion. Attendance varied from two to six people per session, with two participants attending about 88% of the sessions. My impression is that regular attendance facilitated PK.
2. *Work in darkness to reduce scrutiny.* Our methodology differed from table-tipping. Blink cameras can 'see' in the dark, reducing darkness as a factor. Factors associated with scrutiny involved direct observation and video documentation. These variables were associated with reduced turning and equipment failures.
3. *Promote a light-hearted, jovial atmosphere.* Although quantitative results portrayed only a weak relationship between laughter and pinwheel turning, qualitative observations support this recipe suggestion. For example, we observed 15 occasions when laughter coincided with pinwheel turning and only a few occasions of laughter without turning. A cheerful atmosphere, therefore, seemed to facilitate pinwheel turning.
4. *Talk about PK.* Perhaps the category 'PK' should be broadened. Quantitative results supported the hypotheses that talking about occult traditions, psychic readings, and psychical research were associated with rapid turning. Discussions about miscellaneous topics were linked to reduced turning. I offer a caveat. Many attempts to generate turning through talking about a particular topic failed. My impression was that unknown factors were far more important for pinwheel turning than group behavior. The frequency of camera activations during the first hour of each experiment was more predictive of the subsequent activation rate than conversation factors.
5. *Tolerate artifacts.* Although, in general, we followed this advice, I conducted experiments to evaluate artifact hypotheses. These attempts often resulted in reduced turning and equipment failures. I covered pinwheels, installed cameras, and adjusted the covering of domes. As observed by Batcheldor and many others, investigating artifacts inhibited PK, while tolerating artifacts seemed to facilitate it.
6. *Reduce analytical thinking.* I think that my analytical attitude reduced the PK personally witnessed during previous psychical research investigations (McClenon, 2018, 2019). Participation in the pinwheel group changed my way of thinking. When I heard raps from the ceiling on Dec. 2, 2019, I was unsure about their origin (presentation video 1: 26:06-26:32). The group interpreted my account of the sounds as paranormal and described similar experiences. From their perspective, hearing raps was not unusual. This helped me to 'reframe' the memory (cf. Drinkwater et al., 2019), and I became more open to further anomalous experiences. My perception was that, by reducing my analytical thinking, I facilitated additional experiences. This process coincided with what I observed through interviewing Asian shamanic practitioners (McClenon, 1994, 2002a). Each described anomalous experiences as central to their acquiring shamanic roles. Their experiences generated intense belief, a process that involved folk beliefs rather than critical thinking. Intense belief, which has a contagious quality, allowed them to conduct rituals that provided hypnotic/placebo benefits for clients and audiences.
7. *Recruit gifted subjects.* This suggestion distinguishes my previous group PK failures from the present study's success. Our group contained people with extensive psi experience (e.g., loose mental boundary functioning per high levels of Transliminality or Paranormal Belief: Laythe et al., 2018, Ventola et al., 2019). They exhibited certainty regarding PK, and their attitude was contagious. Psi-gifted people also function as 'PK scapegoats.' Novices attribute the PK-like events they witness to psi-gifted people, bypassing ownership resistance.
8. *Devise a core narrative or ideology.* Although we failed to reach consensus regarding a core narrative or ideology, our experiment creates a story. We experienced what we interpreted as collective PK through online meetings. Although Batcheldor's model offers an ideology, we are open to Spiritualist and other theoretical interpretations. This report constitutes our core story. We predict that other groups, following this pattern, can also experience collective PK.
9. *Foster group rapport.* Although we did not quantitatively evaluate this hypothesis, rapport seemed important. There were many obstacles to overcome: (i) It is more difficult to establish rapport through online meetings than in-person; (ii) Modern environments may be less conducive to rapport than previous eras (Putnam, 2020); and (iii) Robust Spiritualist phenomena has declined during modern times (Gauld, 2022). Nevertheless, online meetings can provide a therapeutic milieu for isolated people with psi proclivities. Although my methodology did not allow a fully valid evaluation of the "emotion" variable (related to rapport), emotion and rapport may be the most important factors.

DISCUSSION

This study arguably demonstrated that an online

group can collectively experience PK-like phenomena, as long as researchers allow anomalous phenomena to manifest in harmony with their nature. Within Batchelder's model, PK is a rearrangement of waking reality, governed by a [poorly defined] 'Universal Creative Principle.' We sought to contribute to theory development through uncovering characteristics associated with this principle. The present data can certainly be interpreted in many ways, but I hypothesize that the features we encountered (i.e., group processes facilitate PK and trickster effects inhibit investigation) are related to dissociation and dream-like processes. Therefore, I offer a revised model from an evolutionary perspective.

Paleolithic people used shamanic trance to achieve anomalous experiences. Trance is a combination of waking and dreaming states, and the proposed model argues that psi has characteristics reflecting this combination. I argue that waking and dreaming consciousness were shaped by evolutionary processes. Waking consciousness evolved to filter input data, creating areas of awareness subject to rationality, emotionality, and critical thinking. The consciousness feedback mechanism enhanced decision-making, which provided advantages to survival. Dreaming requires different chemical systems and alternate advantages. It evolved among ancient reptiles, perhaps augmenting memory storage or offering preparatory exercises for unanticipated threats (Valli & Revonsuo, 2009). Dreams entail illogical and strange scenarios with strong emotional content, unexposed to critical thinking (Hobson, 2010).

Psi, like trance, is hypothesized to entail combinations of waking and dreaming consciousness (McClenon, 2018). PK, like dreams, violates the 'laws' governing waking consciousness. Both dreams and PK involve strange scenarios with strong emotional content, with PK moderated due to its stronger connection to waking consciousness. Everyone present during a PK event perceives it; it is a shared experience. Like dreams, PK has a vaguely preparatory element since it often coincides with death, stress, or difficulty (parallel to precognitive dreams). PK's hiding, trickster-like characteristics are parallel to dreaming's amnesia, the element of concealment. Like dreams, PK has a quirky strangeness and an aversion to critical thinking. This revised model hypothesizes that scientific exploration of the physiology of dreaming can shed light on the nature of consciousness and on disturbances of consciousness such as PK.

I hypothesize that 'belief in psi' and 'fear of psi' have different evolutionary roots. Fear of psi evolved due to the evolutionary costs of disrupting waking consciousness. Psi experiences are correlated with dissociation, childhood difficulty, and psychological symptoms (partic-

ularly psychosis); these stigmatized variables convey evolutionary handicaps (McClenon, 2012, 2013). Fear of psi is hypothesized to involve genetic propensity, like fear of snakes. In the opposite direction, shamanism enhanced believers' physical and psychological well-being through hypnotic and placebo processes. Shamanism involved dream-like trance, anomalous experience, and suspension of critical thinking. Psi manifests in ways that foster belief in religious ideology rather than scientific knowledge.

I hypothesize that the psi trickster reflects disjunctions between fear of psi and paranormal belief, parallel to the disjunctions between waking and dreaming consciousness. According to the proposed model, psi cannot permanently withstand the scrutiny of waking consciousness. As a result, it hides when examined, but like dreams, reappears under suitable conditions. The model thus predicts that participant observation of PK field experiments can offer insights into the nature of consciousness. My impression is that our data do not fully support the idea that *group consciousness* is the only source of the phenomena we experienced. Indeed, the phenomena had innovative qualities, often manifesting themselves in ways that refuted group expectations. Our findings predict that others can successfully experience group PK through online experiments. Multicultural research can reveal the degree findings reflect specific researchers, cultures, or experimental conditions.

IMPLICATIONS AND APPLICATIONS

Both qualitative and quantitative findings support the hypotheses that: (1) Group meetings facilitated pinwheel turning; (2) Discussions of occult traditions, psychic readings, and psychical research were associated with robust pinwheel turning; (3) Miscellaneous discussion topics, direct observation, and the relaxation exercise were linked to reduced turning; and (4) Pinwheel turning exhibited trickster-like qualities, e.g., equipment failures, hiding behaviors, unexplained bursts of turning, unexplained changes in turning patterns, anomalous lights, and poltergeist-like events. Like dreams, the pinwheel phenomena seemed to violate expectations. The occurrences generated surprise and wonderment, but not scientific certainty. Accordingly, the present results might help to inform or clarify the concept of an 'enchantment-psi loop' (Lange & Houran, 2021; Lange et al., 2023), i.e., the idea that the ontological shock and surrealism caused by anomalous experiences itself is a mental state conducive for additional anomalous experiences. Although trickster-like effects suggest that future researchers will encounter special obstacles, group PK studies following

the formula outlined here are anticipated to offer a path toward significant advances in model building and theory development.

ACKNOWLEDGEMENTS

The author offers thanks to earlier participants Rosanne Schaffer (a.k.a. Fahrusha), Keith Linder, and many others, and special thanks to present participants: Melanie Mann, Boris Creemers, and Janet Reberholt. Eric Dullin, Patric Giesler, Nemo Mörck, and Shannon Taggart offered valuable suggestions regarding previous versions of this paper. I also wish to thank James Houran for his editorial assistance and suggestions.

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4. Feb. 24, 2022 (15 activations). <https://youtu.be/XcWsNAMlKlc>
 5. March 3, 2022 (51 activations). meeting with PK conducive parapsychologist (5:11-6:45) <https://youtu.be/7AikR0xBclM>
5a March 5, 2022, Special Pinwheel Experiment (58 activations). https://youtu.be/P_6gTMpJVvc
 6. March 10, 2022 (76 activations). https://youtu.be/ZB49eBe2n_o
 7. March 17, 2022 (111 activations). <https://youtu.be/QWMIy7teMg4>
 - 7a. March 21, 22, 2022 Special Observations (Mar. 22, 2022: 59 activations). <https://youtu.be/m9sovB3i88Y>
 8. March 24, 2022 (43 activations). <https://youtu.be/kLK3pnyxieE>
 9. March 31, 2022 (53 activations). <https://youtu.be/FWL38C9NiyE>
 10. April 7, 2022 (39 activations). <https://youtu.be/gDI-2sy5jxfY>
 11. April 14, 2022 (64 activations). <https://youtu.be/sLN-Wrvm65co>
 - 11a. April 19, 20, 21, 2022. https://youtu.be/8uJxg_vCJJ8
 12. April 21, 2022 (23 activations). <https://youtu.be/MUAsEc6cMxU>
 13. April 25, 26, 27, 2022 - covering Blink and cell phone cameras to evaluate effects of camera heat. <https://youtu.be/41gYVuszBq8>
 14. April 28, 2022 (21 activations). <https://youtu.be/t-SlqnZaDE4>
 15. May 5, 2022 (65 activations). <https://youtu.be/8uRz9tgA1tg>
 16. May 12, 2022 (114 activations). https://youtu.be/Nhe5z_wM_CQ
 - 16a. May 16, 17, 2022 (85 activations). simulation of Feb. 22 poltergeist event: 18:06-12:23). <https://youtu.be/kvAW3FyHFpY>
 17. May 19, 2022 (37 activations). meeting with parapsychologist (0 activations). <https://youtu.be/qrs6uZy-12jA>
 18. May 26, 2022 (42 activations). audio problems. <https://youtu.be/HjXdxawhnm>
 19. June 2, 2022 (7 activations). https://youtu.be/tuHQi-IS_jOY
 - 18a. June 7, 2022, Special Pinwheel Experiment (20 activations). <https://youtu.be/m9MzMLqiARK>
 20. June 9, 2022 (48 activations). <https://youtu.be/wK-Py0d87-ds>
 21. June 16, 2022 (3 activations). audio problems. <https://youtu.be/pLSv1JOrfXo>
 22. June 23, 2022 (8 activations). camera failures. <https://youtu.be/meHQB0ajFvk>

APPENDIX A – VIDEOS OF ONLINE EXPERIMENTS

Presentation Videos

1. Ritual Healing Theory: Qualitative Evaluation of a Group PK Experiment (Theory 1:30-4:14) <https://youtu.be/clb0fg8Bhkw>
2. A Group PK Experiment: Testing Psychical Research and Sociology of Religion Hypotheses <https://youtu.be/cRv0VWZMj2c>
3. Evaluating Batcheldor’s Artifact Induction Theory: An Online Group PK Experiment <https://youtu.be/Lr7V4f-NgpEIl>

44 Group Experiments and 8 Special Experiment Videos

1. Feb. 3, 2022 (8 activations). Nov. 2021-Feb. 2022 Pinwheel Experiments (19:00-23:24) <https://youtu.be/ZfgmJHlg6HQ>
2. Feb. 10, 2022 (5 activations). Nov. 2021-Feb. 2022 Pinwheel Experiments (23:24-26:51) <https://youtu.be/ZfgmJHlg6HQ>
3. Feb. 17, 2022 (9 activations) <https://youtu.be/fjloaP-wxwQY>
- 3a. Feb. 22, 2022, Special experiment (27 activations). Bottle poltergeist (12:30-14:40) <https://youtu.be/E5p0tJC0wpA>



23. June 30, 2022 (0 activations). <https://youtu.be/DqEY94TQaMw>
24. July 7, 2022 (10 activations). <https://youtu.be/WVx-QgObwW6E>
25. July 14, 2022 (0 activations). Camera failures. <https://youtu.be/2xle2Jm20gck>
26. July 21, 2022 (0 activations). Camera failures. <https://youtu.be/7EZyt0qYoiE>
- 26a. Observations July 24-Aug 26, 2022 (July 25: anomalous lights: 5:11-9). <https://youtu.be/xLaxFxFbzc>
27. Sept. 1, 2022 (0 activations). Camera failures. <https://youtu.be/kC3jGjfAKvl>
28. Sept. 8, 2022 (126 activations). <https://youtu.be/CWoIDJgZgd8>
29. Sept. 15, 2022 (101 activations). Audio failure. <https://youtu.be/gylt7dSTvXc>
30. Sept. 22, 2022 (86 activations). <https://youtu.be/JC-CuoHM32Vc>
31. Oct. 6, 2022 (10 activations). <https://youtu.be/RUH-KY5Cz1WA>
32. Oct. 27, 2022 (8 activations). https://youtu.be/C1QcH-kkP_SQ
33. Nov. 3, 2022 (3 activations). <https://youtu.be/8-vp-gUeEfUU>
34. Nov. 10, 2022 (2 activations). <https://youtu.be/0d1wT-pcsajs>
35. Nov. 17, 2022 (0 activations). Audio problems. <https://youtu.be/293Q0792-KA>
36. Dec. 1, 2022 (85 activations). <https://youtu.be/o7Sml-3sONLs>
37. Dec. 8, 2022 (4 activations). <https://youtu.be/oZd32xr4mS8>
38. Dec. 15, 2022 (0 activations). <https://youtu.be/ONX-Ft6JPzUM>
39. Dec. 22, 2022 (11 activations). <https://youtu.be/3VO-Hh-zaaag>
40. Dec. 29, 2022 (includes Dec. 27, Special Experiment). Group experiment (0 activations). <https://youtu.be/YdkG-kQKU9c>
41. Jan. 5, 2023 (0 activations). <https://youtu.be/MWiIT-g9gPtk>
42. Jan. 12, 2023 (0 activations). <https://youtu.be/-XvpRymctRo>
- 42a. Jan. 12-Feb. 10, 2023 (1 activation). <https://youtu.be/fCC1vABDFLY>
43. Feb. 18, 2023 (non-group experiment: 1 activation; group experiment: 6 activations). <https://youtu.be/6qziw0GR9EQ>
44. Feb. 25, 2023 (1 activation), camera failures, <https://youtu.be/aIHb6NQFqC8>



A Multi-Method Perspective on Psi

SPECIAL SUBSECTION

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SUBMITTED May 15, 2024

ACCEPTED June 1, 2024

PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243461>

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James McClenon has many years of experience with sitter groups (McClenon, 2018); he has studied Kenneth J. Batcheldor's work (Batcheldor, 1984; Batcheldor & Giesler, 1994), knows the trickster effect (Hansen, 2001) and the predictions of the Model of Pragmatic Information (Lucadou, 2015). This led him to the fundamental view that controls hinder the occurrence of PK, and he was, therefore, reluctant to introduce controls. Without controls, however, the observations remain dependent on many possible factors, are difficult to interpret, and have little scientific significance. For example, if participants increasingly observe synchronicities or supposed PK phenomena, which has been described in some impressive ways, then this may be related to expectations and the associated selective perception. Another question that is not addressed: If the alleged psi phenomena observed during the sessions are actually psi effects, then it is still open whether they are experimenter psi, especially since there is no blinding at any time. McClenon took a long time before some control or quantitative approaches were introduced, after a period in which there was little systematic experimentation and variation. Often, something was abandoned if it did not seem to work, even if it was an interesting approach (e.g., placing a burning candle near the pinwheels as a kind of control).

It seems to me that McClenon's project suffers from a lack of clarity as to which theoretical model it is based on. He explicitly refers to Batcheldor's model, which assumes a *Universal Creative Principle* (UCP) creating and sustaining "normal reality" as well as "paranormal" phenomena in another way with "no normal causes"¹ under certain conditions. Under these conditions, the causes of paranormal phenomena experienced are ambiguous – Batcheldor calls this situation a "*pocket of indeterminacy*." The emergence of such a pocket of indeterminacy is contingent on the observers' state of mind. McClenon also takes his own *Ritual Healing Theory* (RHT) into consideration, which models the development of spiritual specialists (e.g., shamans) via an evolutionary principle, who are able to experience trance and hypnosis as well as cause spiritual healing in the community through creating belief in the paranormal and allegedly anomalous experiences. Healing processes can then be understood as the result of hypnotic and placebo effects (McClenon, 2005). Another theoretical influence is only mentioned in passing in McClenon's paper, but nevertheless seems to play a major role, is linked to the name Walter von Lucadou. His *Model of Pragmatic Information* (MPI) and the *Generalized Quantum Theory* (GQT; Walach et al., 2014), which are based on quantum physical principles, with its predictions on the elusiveness of psi phenomena, also appear to have a strong influence on McClenon's experimental approach (personal communication).

All three theories have points of commonality, but also incompatibilities. McClenon's own RHT is consistent with Michael Winkelmann's approach of understanding



shamanism on an evolutionary-biological basis (e.g., Winkelman, 2009), and is ontologically reductionist in that neither genuine psi phenomena nor an otherworldly agent need to be assumed. In contrast to the MPI and the UCP model, it tends to be person-centered, while those are explicitly non-person-centered, i.e., the occurrence of (alleged) psi phenomena is not caused by special abilities of particularly gifted persons. In the following, I will briefly describe the similarities and differences between the MPI and the UCP, as these are illuminating for the interpretation of the results of McClenon's series of experiments.

The core structure of the MPI and the GQT is derived from findings made in quantum physics. They have been transferred to the macrophysical and psychological realms. A central role is played by a property of quantum systems that allows "spooky action at a distance" (Einstein), i.e., a non-local correlation between two entangled particles, but which cannot be used to transmit information, as this use would cause the entanglement correlation to collapse immediately. This property, which has been confirmed for quantum systems, is transferred in the MPI and GQT as a non-transmission axiom (NT axiom) to macrophysical phenomena, psychology, and other areas of life. The axiomatization of the non-usability of psi for information transmission has significant consequences for the interpretation of the elusiveness of psi. Although it is a powerful explanation, it sometimes seems counterintuitive when one considers the phenomenology of some psi phenomena (e.g., concerning occasions of crisis telepathy and clairvoyance). The MPI and GQT allow psi-phenomena under certain circumstances, i.e., as long as the NT axiom is not violated. Their basic assumption and their method of argumentation are therefore anchored in modern physics and a mathematical formalism, although they also claim validity for the fields of psychology and art, and GQT thus also becomes a kind of epistemology (Römer, 2023).

Batcheldor's UCP concept, on the other hand, is a metaphysical theory according to his own characterization. He calls it "an abstract dynamic creative principle" (Batcheldor & Giesler, 1994, p. 109).² Both Lucadou and Batcheldor give explanations of the elusiveness of psi, the decline effect, and the trickster effect; both claim that reality³ is made up of "normal-causal" phenomena and "paranormal" phenomena, with the latter referred to by Batcheldor as *phenomena without a normal cause* and by Lucadou as *non-local* and *acausal phenomena*; both argue that strict experimental controls weaken the results of psi experiments. However, the basic assumptions of Batcheldor and Lucadou are completely different. The quantum physics-based models (MPI, GQT) exclude in-

formation transmission by psi due to the NT axiom. Since non-local phenomena are entanglement correlations and not causal relationships in this model, the question of the observer plays a central role. Direct observation causes the entanglement of a system to collapse. Psi phenomena are no longer possible under strictly controlled observation. This automatically leads to decline and displacement effects. Elusiveness is, therefore, to be seen as the consequence of observation and – in the MPI – as a decline in the novelty and thus as a loss of pragmatic information (Lucadou, 2015).

In Batcheldor's model, however, the elusiveness of psi is rooted in the conception of reality itself. Batcheldor writes: "Normal reality resists paranormality and prevents it (in various ways) from destabilizing the rest of reality" (Batcheldor & Giesler, 1994, p. 105). According to his theory, psi phenomena are not part of our stable physical reality, do not follow its laws, and therefore cannot be studied scientifically as a matter of principle. Psi phenomena only can occur outside of normal reality, in what he called *pocket of indeterminacy* situations or areas, "where there is an *ambiguity of causes*" (ibid., p. 100; italics in the original). In earlier writings, Batcheldor focused more on another factor that could hinder psi from occurring: the fear of psi. It leads to emotional resistance, which comes in two types, "ownership resistance" and "witness inhibition" (Batcheldor, 1984). Psi phenomena challenge our "normal" and stable reality and are therefore perceived as a threat. This is one reason why *pockets of indeterminacy* are necessary for psi phenomena to occur.

Both Lucadou's and Batcheldor's models consider ambiguous situational conditions to be psi-conducive. But again, the reasoning is different. While in the physical model the "macroscopic uncertainty principle" prevents the entanglement situation from collapsing, which makes psi possible, whereas in Batcheldor's model, the ambiguity of causes of the *pockets of indeterminacy* are conducive to the occurrence of paranormal phenomena because they are "blank spots," so to speak, that the UCP requires to create or express itself most easily.

Although Batcheldor's and Lucadou's predictions are the same in many respects, e.g., regarding the trickster quality of psi phenomena, they have different consequences for the researcher. To put it metaphorically in a nutshell: While quantum-physics-based models call for methodically *tricking the trickster*, Batcheldor's model encourages *playing with the trickster*. The integration of psi phenomena into a scientific theory, as is the case with the former, basically enables exact predictions and thus its verifiability.⁴ The latter, however, is considered a "metaphysical theory," a rigorous scientific investigation of paranormal phenomena impossible by definition. Batch-

eldor assumes, “that paranormal phenomena *have no normal causes* in terms of current science, and that they are created from outside of normal reality” (Batcheldor & Giesler, 1994, p. 98, emphasis in original). And further:

According to my definition, “paranormal” phenomena, *by definition*, are uncontrollable, unpredictable, and unrepeatable (in terms of normal science). (...) But I don’t say that the phenomena are totally uncontrollable, unpredictable, and unrepeatable, as I will discuss below – but only that *strict* control, repeatability, and prediction are impossible. (ibid., p. 99)

This relativization of the statement of the complete impossibility of the scientific investigation of psi phenomena is based on a differentiation made by Batcheldor. He distinguishes between *embryonic paranormal phenomena* and *paranormal phenomena with a track record*. While the former cannot be scientifically examined without destroying them due to their nature, this does not fully apply to the latter. According to Batcheldor, embryonic paranormal phenomena begin *a track record* with their first occurrence in a pocket of indeterminacy. The participants of sitter groups, for instance, get more and more accustomed to the phenomena and lose their fear – Batcheldor calls this “acclimatization” – which favors the reoccurrence and prolongs the track record of these phenomena.

This model allows repeated observation of psi phenomena with a track record and makes it, therefore, accessible to scientific investigation. It still initially requires ambiguity of causes (pocket of indeterminacy) but not an NT axiom and, therefore, does not necessarily have to reject a signal model of psi. The acclimatization of the “observers” (e.g., participants of sitter groups) as well as the track record help to overcome ambiguity and elusiveness of the phenomena and lead to a stabilization necessary for scientific investigations. This shows a significant difference to MPI, where reoccurrences do not lead to a stabilization in the long term, but to the disappearance of psi phenomena – due to decreasing novelty and pragmatic information.

McClenon seems to have been more guided by Batcheldor’s theory, although this is not clear from the project description in the article. The personalization of the pinwheels by giving them names, together with the variations in the experimental setup, represents a “playful approach to the trickster” and may have contributed to the occurrence of the sometimes impressive effects described.⁵ This also includes the malfunctions of recording devices or technical equipment, which are known from

many anecdotal descriptions in the field of anthropology,⁶ but also play a major role in the field of parapsychology, especially when it comes to macro-PK phenomena (Morris, 1986).⁷ After frequent camera malfunctions, it would have been obvious to immediately install a second camera to control technical failure as a variable. According to my understanding of the UCP theory, a second camera should not have a hindering influence on the occurrence of PK phenomena after they had a track record, especially since the recording cell phone camera was permanently present, anyway. Quantitative analyses of the pinwheel movements recorded by the blink camera also show that these anomalies do not escape observation, even if they react in a “trickster-like” manner.

McClenon’s experimental setup does not provide 100% proof of the existence of paranormal phenomena. There still remains a certain amount of macroscopic uncertainty due to a setting that is not perfectly controlled. Together with the possibility of assuming the existence of a group entanglement situation, this is sufficient to consider it a confirmation of the MPI. However, it also does not contradict the UCP theory. More systematic experimentation and the earlier use of better controls would have been appropriate in order to derive more scientific findings from the interesting session reports.

Considering the *group effect hypothesis* investigated by McClenon in this context, a similarity to the Global Consciousness Project (Nelson, 2015) comes to mind. According to this paradigm, a potential influence of assumed collective consciousness structures on the behavior of random number generators (RNGs) was investigated, not only on a global level but also with smaller groups such as the audience of a movie theater (Shimizu & Ishikawa, 2012). Placing an RNG in the room with the pinwheels would have been an interesting addition to the exploratory experimental design. This combination of different measurements on a micro- and macro level is not new and has already been applied in investigations of reported haunting (Maher & Hansen, 1992, 1995).

McClenon’s approach of conducting online group PF experiments is innovative and seems to work in that macro-PK phenomena actually appear to have occurred. The method of quantitatively recording the behavior of the pinwheels using blink cameras is also very interesting. The trickster quality of psi phenomena does not seem to influence the result of the quantitative measurement of camera activation during the sessions compared to the relaxation phases, even though pinwheel activity itself appears to respond to direct observation. It’s recurring “hide-and-seek” behavior that finally led to the personalization of the pinwheels, as well as the apparently non-occurring decline effect, speak a little bit more for

the UCP theory than for the MPI. The fact that the burning of candles in the vicinity of the pinwheels during the sessions was abandoned due to inconsistent results seems a pity because it appeared to be an anomaly itself. Reasons for giving up would rather be found in the fact that one would have to assume an influence as a heat source directed to one side of the system, which should then lead to a systematic deviation from the random behavior of the pinwheels. However, this was obviously not established.

A critical feature from a methodological point of view is that the pinwheels were not completely insulated from possible convection currents of the ambient air by plexiglass hoods or other covers. The fact that the pinwheels no longer moved when completely isolated from the surrounding air may be enough for a skeptic to find random local air currents as an explanation for the movements. It is also consistent with Batcheldor's model, according to which the elimination of the ambiguity of causes and, thus, the pocket of indeterminacy prevents the occurrence of (embryonic) paranormal phenomena.⁸ However, this initially obvious explanation should be viewed critically so that Occam's razor is not applied too early. On the one hand, controlled experiments with gifted subjects are described in which the turning of pinwheels was also successful under a cover through an effort of will (Dullin, Jamet & Frosio Roncalli, 2023; Varvoglis & Dullin, 2023). On the other hand, there are reports from parapsychological research in China, for example, according to which a minimal hole in the sealing of a container is necessary to produce a macro-PK effect, as otherwise the alleged "qi" of the test subjects cannot penetrate and exert its effect (Zha, 2001). This suggests that ideas about what is possible or not with paranormal means can be decisive for the actual occurrence of such effects. This is also consistent with the findings I obtained in interviews with magic practitioners. Absolute belief in the possibility of the success of magic is necessary for its actual success. There must not be the slightest doubt during the magical procedure (Mayer, submitted). This inner attitude, which is necessary for success, is all the easier to achieve the smaller the desired effect is. An open-top container for the pinwheels can then greatly facilitate the occurrence of psi effects, even if de facto, there is no significant difference to a completely closed container as far as possible environmental influences on the pinwheel inside are concerned. This is also consistent with Batcheldor's model because he emphasizes the "right state of mind" in order to establish "the necessary *pockets of indeterminacy* so that paranormality can occur. This is where *belief* comes in, and *track record* again is key." And further, "Speaking figuratively, the UCP can do advanced 'magic' (...) But we *can't*, until there is a track record involving a

stable causal pattern. In that case, we can evoke the result by evoking the UCP. This could be 'mental intention,' but other mental conditions are more likely – easier – to develop" (Batcheldor & Giesler, 1994, p. 102).

Fear of psi plays a decisive role in magical practice (Mayer, submitted) as well as in parapsychological macro-PK experiments (Batcheldor, 1984). Fear can be conscious, but it can also act on an unconscious level and in this way prevent the occurrence of psi effects. This influencing factor is better taken into account by Batcheldor's work than by the MPI.

However, I am a friend of the strategy of not committing to just one explanatory model, but considering several, possibly contradictory models, as James McClenon has apparently also done. Every model has its limitations, as can easily be seen if you take empirical data from different areas and disciplines seriously and evaluate them neutrally.⁹ I think that the described results of the online group sessions can also be reconciled with James C. Carpenter's First Sight Model (Carpenter, 2012), a model of psi that, like the other two, I also value highly. But, it is crucial to be aware of the basic assumptions of the models and their differences and to take them into account appropriately in the experimental design and the interpretation of the results. In this case, a multi-model perspective can provide a considerable gain in knowledge.

In sum, I read McClenon's article with great interest, but also with some skeptical thoughts. James McClenon's basic approach is stimulating. However, there seemed to be a lack of systematic implementation, so that one sometimes gets the impression, at least from the manuscript, that none of the participants were really clear about what should be investigated. The lack of systematics could be explained by the grounded theory approach, according to which the series of experiments develops over time as knowledge increases. However, even with such an approach, at least the research question should be clearly defined and established from the outset, which is what I missed in the description. I hope this will be fixed in the future!

ACKNOWLEDGMENTS

I would like to thank Michael Nahm and Patric Giesler, who helped me to formulate the commentary more clearly and sharply in terms of argumentation. I owe Patric, in particular, a much deeper understanding of Batcheldor's UCP theory.

ENDNOTES

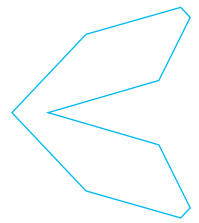
1. Batcheldor distinguishes phenomena "with normal causes" and phenomena "with no normal causes"

- (Batcheldor & Giesler, 1994, pp. 97–98). The first are phenomena that underlie the law of efficient or moving causation of classical physics. He calls this the “horizontal perspective” (ibid., p. 101). The UCP creates the “normal reality” as well as paranormal phenomena with no normal causes from a “vertical” perspective, the latter in *pockets of indeterminacy*.
2. Batcheldor uses the term *metaphysical* in a non-religious, but ideologically neutral sense with the fundamental meaning that the theory cannot be tested by the means of classical natural science – one would have to add that he means classical physics. The term was introduced in this neutral sense by Andronicus of Rhodes, who published the works of Aristotle in the 1st century BC and brought together various writings that could not be categorized in the other philosophical fields in a volume entitled “*Metaphysics*”, which means “after physics” or “following physics.” The meaning of the term at the time was presumably simply that the topics of the volume should be treated after physics in the curriculum (Cohen & Reeve, 2021).
 3. Terminological caution is also required here, as Batcheldor distinguishes between “normal, stable reality” and situations in which paranormal phenomena occur that do not belong to this “normal reality.” Since Batcheldor regards paranormal phenomena such as raps in the context of sitter groups as physically documentable phenomena and not merely as hallucinations or as the result of manipulations (artifacts), they are, of course, part of reality, understood as all that exists, even if they only occur under very specific circumstances.
 4. I will leave aside the problems of defining the system boundary for entangled systems in the macro area (who and what is assigned to the entangled system in the macro world and who and what to the observer outside the system?) and the precise definition of information or information transfer. They entail a considerable risk of self-immunization with regard to the falsifiability of the theory, which is exacerbated by the fact that classical-causal and non-local effects overlap.
 5. A tendency towards personalization can also be observed in the MPI, since psi phenomena or the area of non-local entanglement connections also prove to be “intelligent” with regard to trickster behavior and respond sensibly to human attributions of meaning. In contrast, Batcheldor writes about the characteristics of the UCP, saying that it “can be thought of as suggestible and as following suggestions immediately, blindly, and unintelligently. So, like a hypnotized person, it won’t care if the products look bizarre or ludicrous. (...) Like the designer of dreams, the UCP doesn’t mind incongruity” (Batcheldor & Giesler, 1994, p. 106).
 6. To name just one example, which can be found in a report by anthropologist Peter Gardner on an experience during a field study: “Hearing a fight, I looked out my window to see a middle-aged woman on the doorstep of her cabin, two doors away, arguing with two men. This is the neighbor I described earlier who was heavily involved with power. (...) I picked up the camera and shot the scene. There was a strange noise as I pressed the shutter release. For some reason, the camera stopped working. I borrowed a replacement camera and mailed my own to a repair shop in Chicago. In due course, the shop wrote back asking what I had done to the camera. Its entire shutter mechanism lay in a puddle at the bottom of the instrument, every single piece undone. When my film came back from processing, I got another shock. The picture of the fight had come out, but over the powerful woman’s head, there was a black vortex. This I report as a skeptical scientist, for whatever it is worth. None of it was ever explained” (Gardner, 2007, p. 32). One could argue that the malfunction or damage to the camera only occurred after the “anomalous” extra was recorded on the film, but the black vortex could represent an artifact that was caused by the camera damage and therefore does not represent an anomaly.
 7. Batcheldor himself has experienced these kinds of malfunctions or strange coincidences that prevent reliable and unambiguous recording of macro-PK effects (Lucadou, 1995, pp. 210–214).
 8. However, we can assume that the phenomena of turning pinwheels had a quite distinct track record at the time McClenon applied the plexiglass hood.
 9. Batcheldor’s model seems to have been developed mainly from the point of view of macro-PK phenomena in sitter groups. He considers the fear of psi to be a central factor in this context. However, if one considers the occurrence of alleged paranormal phenomena in other contexts, such as metal bending, the activity of ghost hunting groups, or in shamanic contexts, then this key position of fear of psi as a supposedly self-evident fact must be viewed more critically, apart from the fact of how strongly fears and the handling of the paranormal are also culturally shaped (Lange & Houran, 1999).

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**SPECIAL
SUBSECTION**

Embodied Psi: The Next Turn in Parapsychology

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SUBMITTED April 2, 2024
ACCEPTED May 29, 2024
PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243459>

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JAMES IN LUCK

Reading McClenon's article, I immediately realized that it is a perfect illustration of one of my early papers about evidence in parapsychology (Lucadou, 2000a). I called it the "Hans-in-Luck-Syndrome (HALS)": The usual classical criteria for scientific evidence are "effect-oriented". Experimental results of parapsychology seem unable to fulfill these requirements. One gets the impression that an erosion of evidence rather than an accumulation of evidence is taking place in parapsychology (Lucadou, 2022). This results in a discrepancy between personal and scientific evidence. A person who reports a paranormal experience gets the impression that the scientific description of it is inadequate and that the relevant aspects of the experiences are given away. A non-classical model for scientific evidence is "development oriented" instead of "effect oriented". It takes into account the inherent entanglement and embodiment (Barrett, 2011) of psychophysical systems and the fact that such systems have their own history (Lucadou, 2000b). In such systems, evidence cannot simply be accumulated because the conditions that produce evidence change during the development of the system. This is exactly what McClenon describes in his fascinating article.

He starts with Batcheldor's model and experimental approach as well as the Philip-experiments around the Canadian parapsychologist Iris Owen. However, from the point of view of the "Model of Pragmatic Information (MPI)" (Lucadou 2015a) and the "Generalized Quantum Theory (GQT)" (Atmanspacher et al. 2002, Lucadou et al. 2007, Römer 2023) his psychological perspective is not enough.

BATCHELDOR'S TURN

If only psychological factors could be held responsible for the avoidance of a paranormal phenomenon, it would suffice to eliminate these factors. Indeed, it is widely assumed that the elusiveness of the phenomena is only an "irritating by-product" of unfavorable psychological conditions which should be eliminated. This is why authors of reports often simply neglect the remarkable elusiveness, upon which the astonished reader wonders why such massive phenomena were not "properly" investigated with all the technical facilities available to the experimental sciences. Not until such a reader requires more precise answers, is he informed that the phenomena behave in such an elusive way that they can hardly ever be properly objectified. Even after many years of effort, Batcheldor could not lay his hand on a single video recording of a paranormal phenomenon. In a letter to me, Batcheldor described a typical situation (Lucadou, 1995): "During an experiment we had switched on the infrared video camera when the table levitated. Although we thought the video recorder was running, we



did not feel inhibited and I believed we had achieved a success. When we played back the tape, however, it did not contain any images at all! We found out that a switch had been in a wrong position. The next time I carefully checked the position of all switches and, indeed, the table refused to levitate. So would it be possible, though difficult according to your theory, to acquire a detailed video recording of a levitation?"

According to the Model of Pragmatic Information (MPI), we should indeed assume that the psi effect remains elusive even when the psychological barriers have been eliminated, because every observation seeking confirmation prepares the system in such a way that its autonomy is restricted. In the situation described by Batcheldor, the psychological conditions were, in fact, favorable, and a levitation was observed. Nobody knew about an erroneously set switch, and it is difficult to understand why, after the correction of this mishap, the psychological situation would have changed so dramatically. According to the MPI, however, the position of that switch, which is of no importance for the psychological situation, is of fundamental importance. Because of the erroneous setting of the switch, the total system was objectively unable to make a recording of the phenomenon. In other words, any measurement or recording was impossible. The phenomenon could only occur because it was not completely objectifiable. A complete video recording would comprise more pragmatic information than the system was able to produce (see below). The subjective experience of the sitters, on the other hand, is "diffuse" enough to record the less voluminous or less reliable information about the phenomenon. The situation remains vague, the system is not completely prepared for reliability. Confirmation of the actual phenomena by means of a video recording is lacking. By resetting the switch, the structure of the complete system is altered to such a degree that the phenomenon cannot occur. Switching on an additional measuring apparatus changed the potentiality of the system in such a way that particular (complementary) measurements were prevented from taking place. It goes without saying that the above does not mean that the MPI considers any objective observation of psi phenomena absolutely impossible. This would represent an inadmissible immunization. One could summarize it as follows: less equipment may have produced more phenomena! It is necessary to adapt the objective conditions of observation to the phenomenon, in such a way that enables the observer to gather the optimum pragmatic information the system is able to produce. Without this adaptation, one throws away information. If no phenomenon occurs when a complete video recording is made, one apparently threw

away too much information about the phenomenon: it does not occur any longer. If, on the other hand, a seance in darkness prevents the observer from separating trickery and real phenomena, then he has also thrown away too much information, because he does not know what he has observed. Where is the royal road between the Scylla of an observation and the Charybdis of a phenomenon without observation?

In answer to Batcheldor's letter, I suggested reducing the resolution of the method of observation, i.e., to defocus the video camera or to limit it to a documentation on audio tape only. In this sense, "less" would really be "more", because we would obtain an objective recording of the phenomenon, which would be less easy to interpret than a perfect documentation, because it contains lacunae. These are exactly the ambiguities resulting from an imperfect method of recording. Suppose that only noises are recorded, in which case the causes of the noise remain unclear. If a camera is out of focus, it reduces the possibility of determining the exact location of any phenomenon. This is not to say that lacunae in the documentation procedure should leave room for manipulations or fraud (for example, because one can no longer see any wires used for trickery). They should rather prevent the system from being prepared too unilaterally for reliability, so that it loses its autonomy. This method of recording reduces the pragmatic information and offers the experimenter less opportunities to utilize the phenomena in the sense of signal transfer. He has only a limited degree of control over the system. As the recording does not teach him exactly what is going on in the system, he cannot undertake any goal-directed actions. In the experiments Batcheldor performed till shortly before his death, he tried to utilize observations with differing degrees of resolution. He reported darkened sessions as well as the use of a fluorescent background panel, in front of which "cloths could materialize in the air". As predicted by our hypothesis, in front of a panel with a grid of fluorescent dots, these materialized objects (or whatever they were) remained visible for a longer period than in front of a panel completely covered by fluorescent paint. In rare cases (infrared) video recordings succeeded. In these cases, levitated objects were always in such a position that it was impossible to decide whether they were really levitated or only held in front of the camera. They seemed to have been put in a position that prevented the observer from finding out how the phenomenon came about. Batcheldor emphasizes that it would have been very difficult for the sitters to manipulate the object in this specific position, as they did not know what visual field was covered by the camera, which was not equipped with a viewfinder. These

manipulators could, therefore, easily have been detected. Batcheldor's impression is that the complete system "knew" exactly what was recorded by the camera and that one could only record a phenomenon if its cause remained hidden in darkness, so that it was impossible to decide whether a normal or a "paranormal" event had taken place. This is exactly the same as not being able to interpret the video recording. It contains less pragmatic information and prevents the experimenter from having complete control over the system or from making it reliable.

UNCERTAINTY

In general, the Model of Pragmatic Information (MPI) can be formulated in three main "laws": "First law of the MPI":

Paranormal phenomena are non-local macroscopic entanglement (ME)-correlations in socio-psycho-physical, self-organizing, organizationally closed systems (Varela 1981), which are induced by the pragmatic information (Weizsäcker et al. 1974), which creates the system (Lucadou, 2015a).

From the fundamental complementarity of structure and function, an uncertainty relation can be derived. This can further be applied to the concept of pragmatic information leading to the fundamental equation: $I = R * A = B * E = n * i$. This equation describes the partitioning (product) of reliability R and autonomy A of an organizationally closed system which interacts with its environment by the exchange of pragmatic information I . This exchange can be called a measurement. B describes the "confirmation" and E the "novelty" of the pragmatic information in the environmental system, i is the minimum action that the pragmatic information exerts on the specified system during a measurement.

The "Second law of the MPI" (Non-Transmission (NT)-axiom) restricts the effects of the first law:

Any attempt to use a non-local correlation as a causal signal transfer makes the non-local ME-correlation vanish or change its effect in an unpredictable way. In sufficiently complex systems, global meta-observables can always be formed, which limits the direct measurement of entanglement correlations by the NT-axiom (Lucadou, 2015a).

The NT-axiom" (Lucadou et al. 2007) leads to a nat-

uralistic explanation of decline-effects and the displacement-effects in parapsychology: Operationalizations of psi phenomena, which involve a preparation of the system in which the NT axiom can potentially be violated, weaken the correlations present in the system to such an extent that the operational criterion for its determination is no longer reached.

The second law of the MPI also plays a decisive role in spontaneous cases in parapsychology and can be expressed in the so-called "macroscopic uncertainty relation" of the MPI:

The effect size of paranormal phenomena is limited by the quality of their documentation:

Effect size of a psi phenomenon * quality of its documentation < 1

This applies to RSPK-phenomena as well as to sitter group experiments (Lucadou, Zahradnik 2004). This means that in such cases, no procedure can determine whether the cause of the occurrences is a psi effect, artifact, or manipulation. RSPK-phenomena cannot be described by a "consistent story" (Römer 2023, Chapter 5). McClenon emphasizes again and again that it is not possible to exclude causal artifacts.

The decline- and the displacement-effect is thus a compromise between the NT axiom and the tendency of the organizationally closed system to maintain the existing entanglement. The second law thus does not maintain that ME-correlations need to be weak or unstable. In general (e.g., in physics), it is difficult to isolate them experimentally, but they are "powerful" components of nature. In physics, they are necessary to stabilize matter, and in spontaneous cases in parapsychology and healing, it seems that their effect can be huge. As a metaphor one can compare the causal processes in nature with a dry sponge and the entanglement-correlations with liquid water. The dry sponge alone is not very helpful for cleaning, and neither is liquid water, but together, they serve a lot!

This feature is expressed in the "third law of the MPI":

ME-correlations are ecologically stable and are limited only by the NT axiom. They are formed by causal processes, which in turn stabilize them. Potentially causal correlations reinforce entanglement (Lucadou, 2015a).

"Ecological stable" means that the self-organizing, organizationally closed system is in a steady state with its environment, in other words: *Psi is embodied in its envi-*

ronment.

There is not too much difference between the phenomena produced by physical mediums and by poltergeist phenomena. Both types of phenomena are difficult to observe and they are dependent upon the preparation of the system. There are also common aspects in their psychological description. In both cases, there is the dynamical process within a group, in which the interaction among its members is of fundamental importance, and even the “experimenter” can become a poltergeist agent, as McClenon shows in his report.

It is clear that we are still far from being able to say which phenomena in the area of macro- PK are possible or impossible, or to conclude why they are as they are and not different.

We simply do not have a clue how strong the “stochastic fluctuations” of a system can become and why they often seem so bizarre. After all, such a group represents a system with an immense degree of freedom and entanglement, and it comprises many levels of description. Even if properly controlled PK experiments with random generators yield so small a result that it is hardly detectable, it need not be small in real life too. However, a controlled experiment represents a very artificial, more or less sterile situation and Batcheldor and McClenon try to overcome this situation by introducing additional degrees of freedom and even causal processes.

IMPRESSIONS

In such a mixed situation, the use by McClenon of “Grounded Theory” to describe categories is, indeed, a very helpful tool. It could even be used a little bit further, as Frauke Zahradnik (2007) showed: According to the GQT, one could look for “global observables”, which are responsible for ME-correlations in a system. They represent complementary descriptive categories. An important characteristic of a complementary descriptive category is that it cannot be derived from any of the given “local” categories of grounded theory but represents a seemingly subjective “impression” of the person who analyzes the situation: They form meta-observables, which nevertheless show a high inter-rater-reliability. As an example, the following observables may serve, which to some extent also play an important role in the description and assessment of McClenon’s experiments:

Authenticity: Here, the subjective honesty of the precipitants of the sitter-group and their willingness to describe extensive details of their experience are assessed.

Anomaly: Here the degree of anomaly or “how paranormal” is the experience assessed, or the violation of “common sense principles”.

Intensity of experience: The degree of impact of the unusual experience on the life of the person concerned. McClenon gives several examples.

THE TRICKY TRICKSTER

Finally, the MPI is able to solve the problem of the “trickster”. McClenon writes: “The trickster marks a paradox. The phenomena reveal itself yet, when subjected to scrutiny, hides. Direct observation, and early attempts at video documentation, seemed to hinder pinwheel turning. ... The psi trickster makes experimental replication problematic. The phenomena sometimes seem to purposely violate expectations, refusing to reveal consistent patterns.”

This is exactly what the second and third law of the MPI describes: The decline- and the displacement-effect is a compromise between the NT axiom and the tendency of the organizationally closed system to maintain the existing entanglement. It is not possible to distill psi from the experimental setting since it is embodied in the environment and situation of the whole group of “test-persons and experimenter”, and it is not possible to distinguish in advance between causal and entanglement processes.

Until now, the Rhinean paradigm of parapsychology was on the search for a “psi-switch” - the holy grail (Lucadou, 2022), which should be a remedy for all problems and “never-ending youth”. However, it must fail since the NT-axiom requires that whenever you believe that you can use it, it disappears or changes in an unpredictable way. Thus, the crucial point is that there is no anthropomorphic demon called “trickster” corrupting psi, if at all, the experimenter is the trickster, who tries to isolate psi from its embodiment. Or to put it into different words: Entanglement processes cannot be separated without loss from their causal environment. This could be the “next turn of parapsychology”: Not to search for the “holy grail” of a purified psi but to describe and to investigate it in its natural embodiment, namely its interaction with real-world situations and its relation to real persons instead of seemingly “objective experimenters”. This new turn of parapsychology includes the experimenter, as has already been demonstrated by Herb Mertz (2022) and now by the excellent approach of James McClenon.

Instead of its instability and elusiveness, it seems that psi does not love boundaries like “sterile experimental settings”, or to cite the first verse of Robert Frost’s poem:

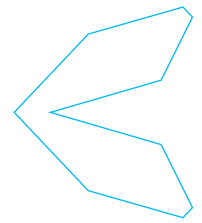
Mending Wall

Something there is that doesn't love a wall, That sends the frozen-ground-swell under it, And spills the upper boulders in the sun; And makes gaps even two can pass abreast. The work of hunters is another thing: (Frost, 1914, p. 11)

Let's say The work of tricksters is another thing: ... (see Nahm; 2014, 2016). The good news is that a new method of analysis has been developed that makes it possible to distinguish causal relationships from entanglement correlations retrospectively (Lucadou 2015b, 2024), but this is another story.

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Lefty, Alice, and Jim

SPECIAL SUBSECTION

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SUBMITTED March 30, 2024
ACCEPTED May 27, 2024
PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243413>

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James McClenon and his group (the M-group), are telling us a story that they lived into being. The heroes of the story are named Alice and Lefty. They are unlikely heroes, crude little objects made of paper and foil and needles, and flimsy enough to be flipped into the air by a strong breeze. Yet they carry the weight of challenging an understanding of everything that almost all of us share almost all of the time.

The M-group assigned personal names to these things because they seemed to display something like life and purpose. Some of us name our cars. They spring into life, from inert to ready to race, with the push of a button, and they are reliable enough in responding to us to seem something like loyal or even loving, and their powers are largely a mystery to most of us. Certainly, if we were challenged to make one, we would be at a loss. Easy enough to imagine life and agency.

This sort of development from flimsy toys with inexplicable activity to a shared sense of personal agency is precisely what is most interesting to McClenon, the sociologist. He wants to understand how anomalous experiences, expressed by the most predisposed individuals, can become a subject of conflicted interest, then excited group involvement, and then evoke a set of ideas aimed at understanding them, and lead thence to collective belief systems with more magic in them than our normal sense of reality permits. Perhaps religions are born that way.

McClenon, the sociologist, takes the typical posture of participant/observer. This is not just a research attitude, it is also a ratio. Before the series of experiments he reports here, he was heavy on the observer side, maintaining strict critical objectivity even while consorting with table-tilters who dallied with magical thinking – like the anthropologist who lived with cannibals but managed to never eat human flesh. In retrospect, he thinks he was too critical and analytical then, and discouraged the phenomena he was hoping to produce. The phenomena he pursued all involved the anomalous movement of things, or macro-PK.

To try to do more PK-productive work, he took guidance from the approach of Kenneth Batcheldor (1984), who thought that a lively group process, unimpeded by too much effort to control non-paranormal artifacts, is optimal for generating a group mentality friendly to psi which is then conducive to genuine macro-PK (séance-like table movements, anomalous and sometimes intelligently responsive sounds or lights, odd electronic disturbances, etc.). The approach has been successfully applied by others, including the Toronto “Philip” group led by Iris Owen (1976). He also took guidance from researchers who reported that such experiments were more likely to be successful if they included at least one presumably gifted participant (someone already inclined to produce such things) (Gimeno & Burgo, 2017). Then, he took the bold step of moving the whole project online, conducting group sessions virtually, where the only contact people had with one another was via their screens. This proved propitious as the Pandemic unfolded.

McClenon then summarizes for us the results of three series of virtual group sessions with



evolving group membership spanning about three and a half years. The first was aiming to produce various séance-room phenomena and create a fictional “spirit” like Owen’s Philip. The last two series were focused on the movements of pinwheels, although various other anomalous events were noted as well.

The first series did not result in the consensual “spirit” or clear group-related phenomena that he hoped for. What it did do was stimulate a lively interest in the members in all things paranormal and a string of strange, apparently anomalous events in the lives of several participants, including McClenon himself. The last two series did result in many observations of apparently anomalous pinwheel movements, as well as other odd events such as inexplicable equipment failures. The M-group then tested a series of hypotheses relating social-psychological variables to pinwheel behavior. The results of these last two series are what I will focus on here.

Throughout this long effort, it is clear that the story created by the M-group has another hero in addition to Lefty and Alice: It is Jim McClenon himself. Perhaps the only consistent member throughout all this work, he modified his theories and hypotheses, and tried to test them and evaluate them. It is here that we see another duality in McClenon. Along with being a sociologist, he is also acting as an experimental parapsychologist.

It is this role enactment that will draw him the most criticism, severe, I expect, for some. His controls are loose and improvisational and casually described. His psychological measures are crude and unvalidated and of uncertain reliability. Observations are more episodic than systematic. And there are other methodological criticisms one could make – but I won’t go into all this. Others may do it, better than I could, and in any case, I don’t want to, and I don’t consider the problems crucially important.

Yes, Lefty and Alice standing out on a table uncovered, or even sometimes partially covered, make for a messy experimental platform. Air currents move them wily-nilly. They are subject to much activity determined by normal factors. Our normal experimental attitude in parapsychology insists that, first of all, our protocol must assure us that what we are measuring cannot be caused by normal means. Only then is there any point to measuring anything and testing any hypothesis. We must lead with our skepticism about even the existence of PK in every situation, control all normal means of influence on the target system as well as possible, and only then follow with our tentative conjectures about the magical something-more. Maybe start with some Batcheldorian looseness, but then tighten up controls before measuring anything. We must always initially doubt the reality of PK, make sure our system completely addresses that doubt, and only then carry out tests of this putative phenomenon.

But I’m no longer so convinced of all of that. The truth

is that, in this situation, I am a soft sell. I do not really doubt anymore that macro-PK occurs, and for some people, it occurs quite a bit. And I do not doubt that pinwheel behavior can express it.

A number of years ago, I spent some time with a well-studied poltergeist agent and witnessed many anomalous movements, noises, and one minor explosion. Normal causes might be imagined for some of the events, but not all, including the rapid skidding of a heavy wrench toward her from an empty room. It was eerie and disorienting. Then, some colleagues placed this individual in a very tightly controlled experimental protocol (influencing the firing of a sea-slug nerve cell), and she performed very well. She also carried out a computer-generated PK experiment for me in my own office, and it was highly successful. She had only the slimmest amount of control over the phenomena in everyday situations, but when challenged in an experiment, she did have some (Roll, 2004). I was left with no doubt that sometimes macro-PK happens.

Then, in more recent years, I was able to spend some time with a woman who had been at a poltergeist center as a child but was currently trying to return to the phenomena with an experimental spirit to try to gain some control over it – using pinwheels sealed inside jars. This Pinwheel Wizard could place her hands near a jar and set a paper pinwheel moving, make it speed up and slow down, stop and start, and change direction on command. I saw her start one from another room. Then in the process of a spirited demonstration that she was making for us in a small group, I asked that the jar be handed around. My wife, my daughter, and I were all able to make it move without touching or moving the jar; some other people present could not. Then the next morning, as the Wizard was flying back home, I put together a similar apparatus, a heavy glass mason jar with a rubber seal and clamp top, with a pinwheel inside like the Wizard’s, made of eraser, needle, and folded piece of paper. I set the device on a counter in front of my wife and asked her to try to move it. She put her hands a few inches from the jar, and the pinwheel whirled. Then I put it, now still, in front of me, placed my hands near the jar, and wished that it would move, and sure enough, it did. As it was happily turning, it was as if I heard an inner voice shout NO! and the movement stopped. We haven’t been able to move it again.

There does seem to be some sort of psychological power to our normal consensus reality in which things stay put until they are normally moved. It’s certainly a more workable world. In the contagion of excitement and interest stirred up by the Wizard, we ordinary people could do extraordinary things, but not for long. So, I am quite prepared to think that a group like the one McClenon has formed could conceivably pump up such PK-conducive contagious excitement. Maybe they did, or maybe not, but I don’t doubt that it can happen.

Finally, I am an easy sell because I was also involved in a long study of psi in a group context, a well-controlled experi-

ment in which I was able to leave the role of an experimenter and be a participant as well. At some point, I realized that I was doing quite well, as was the group as a whole (Carpenter & Sanks, 2017). This altered my sense of myself, and led to a period of some weeks in which I experienced many striking ESP occurrences. So, I do not doubt that paranormal experience in an accepting, energetic group setting can stimulate psi experiences outside the group in surprising and unpredictable ways. Every reader will assess a paper in the context of his or her own most pertinent experiences, and these are some of my own.

Now, I turn to what we might consider the main experimental findings of McClenon's paper, the ones which he can statistically assess, so I can develop one theoretical context in which they might be understood.

First, McClenon tells us that pinwheel movement was facilitated by the ongoing group activity, all Zoomed-in and talking. He demonstrates this by counting movements detected during a series of 24 group sessions and also during the same time period in the six non-experimental days of each of those 24 weeks. During the sessions, the mean number of movements was 35.5, and during the control periods, it was 14.5. The difference is statistically significant. He then repeated this with another series of sessions and control periods. Here, the means were 27.12 and 5.58, again statistically significant. The pinwheels in their room moved more when the group was meeting virtually elsewhere, than they did when it was not meeting.

However, not all meetings were equal in this respect. Based on accumulating observations, McClenon hypothesized that certain topical and emotional events in meetings made the pinwheels more or less active. Discussions on topics most pertinent to the activity at hand (psychical research, anomalous experiences, and occult traditions) were expected to increase activity, as were laughter and other expressions of emotion. Some meetings had meditation periods. These were predicted to reduce activity, as were discussions on topics not having to do with the psychical and anomalous, and turning deliberate attention to the pinwheels to check on their movement was also expected to diminish activity. Composites of these positive and negative predictions did predict pinwheel movement significantly. Among the elements of these composites, laughter failed to show the predicted effect, and emotion, while showing the predicted trend, proved to be difficult to code.

So here are a few findings. How best to interpret them?

I would like to propose a theoretical framework I have developed called First Sight Theory (FST). I gave it this name because, as developed in my text (Carpenter, 2012), I applied it mostly to how psi works on and is expressed in perception and memory. According to my theory, psi has two interdependent sides: a receptive/perceptive side (ESP) and an active/expressive side (PK). Applied to PK, it could as well be called First Act

Theory (FAT).

A basic premise of FAT is that *PK is something people do*. We do it unconsciously, as we do most things, but it is done by us and not by forces or things external to us, although it certainly must engage those and be intimately entangled with them. We experience unconscious actions of our own as things that "just happen" or that are caused by things other than us, but when we focus on the personal intentionality of the acts, it is clear that we are the implicit actors. To take a trivial example, as I type these words, I am not consciously seeking out each keystroke, directing the fingers to punch thus and so on each letter – but it is my thoughts that are being expressed by those punches. The intentionality makes them mine, even though I had no conscious awareness of carrying them out.

This is all in my body, and this is where FAT says that PK does most of its work and, in an everyday sense, what it is mostly "for." It connects my intentions (including unconscious intentions) to my nervous system and musculature and thence to the actions that I desire. In regards to ESP, FST argues that its predominant action is its participation in the process of selection among the multitudinous inputs of sensation and memory and extrasensory prehensions to elect the product that emerges in consciousness. This involves much categorizing, sorting, directing (positive or negative), and ranking, all done out of sight of awareness. Like very faint and unconscious sensory impressions (subliminal perception), extrasensory prehensions serve as biasing factors in that rapid, perpetual, pre-conscious decision-making process that leads to our perceptions and thoughts and our behavioral decisions.

Both FST and FAT (it's really one theory, I'll call it FAT from now on here) assume that we are always unconsciously prehending a vast expanse of reality beyond our sensory ken. These prehensions are intrinsically unconscious, but as the name implies, they have a kind of grip on things, a grip that is guided by our intentions.

If psi is unconsciously employed predominantly within the body and the mind and is intrinsically unconscious, how do we ever know that the more distal prehensions are present and active? It is by noting their apparently inadvertent expressions in our experience and behavior and in the experience of others and the behavior of things around us. When are we most likely to see such inadvertent expressions? It is when the normal processes of perceiving and acting are blocked, and yet the need for the perceptions and actions is pressing, and when the individual is psychologically open to their expression.

FAT proposes that several things incline us to be psychologically open in this way, including a positive interest in the subject, a tendency to respect and reach into the mind and body beyond immediate consciousness as in creative processes, and a high situational pertinence in the moment of the perception or action. What disinclines us to openness is fear and dread (these shrink the phenomenal world to the immediate

dangers), shame (this cuts off emotional engagement with the world), attitudes against the reality or desirability of distal influences, and cognitive work and task-focus, which also shrink the world to the focus of the work (unless the work involves expressing the anomalous). What makes a need pressing for any potential perception or action? It is affect. As the brilliant but rather neglected psychologist Silvan Tomkins noted, it is affect that motivates (Tomkins, 1963, 2008). A question or need can incline us to something, but it is affect that makes these things *pressing*.

There is another big factor that makes us more or less positively inclined to the active participation of psi in our affairs. As in all matters of attitude and interest, our social context is very important. All of us almost all of the time are psychologically stuffed with the presumption of the non-occurrence of psi, and those around us are equally stuffed. This is highly functional. If I direct my attention to my dog at the door, I want to see him and not some other dog in the next town. If I go to sit in a chair, I want it to stay where it is and not demonstrate some agency to move about on its own as I descend. The world works best without psi, generally speaking, so we generally leave it out of our mundane lives, and out of our conscious experience. This is true even for those of us who enjoy thinking about psi. Since our social groups generally share this presumption of non-occurrence, we reinforce these attitudes for one another.

So, if we want to dilate our receptiveness to PK it makes great sense to form a temporarily aberrant group that indulges the possibility of PK, talks it up, and even exults in its expression. A kind of role-loosening party atmosphere would help a lot. With that we have a social context in which openness is mutually reinforced, an interpersonal bubble in which we can play at believing and then, with evidence, come to believe. Like church-goers, who return to a setting in which they can act as if they believe, and by the end, find themselves believing more and then perhaps experience the fruits of their belief, whatever they might be, unfold apparently unbidden. This is the sort of social bubble that the M-group created.

It is noteworthy that as soon as McClenon included PK-prone persons in his group, who experienced and expected PK events, and talked easily about them, other group members started experiencing various anomalous events in their own environs.

I reiterate here a basic assumption of FAT: It is that each person uses PK easily, unconsciously, and continuously, almost entirely within their own bodies, but is fully capable of employing it more distally in the right circumstances. PK-prone people tend more than most to carry those circumstances with them, with their greater experience of PK and interest and openness regarding it. With enough shared, excited affect to make these things contagious, other people can borrow their PK-proneness and begin to find it expressed around themselves.

The sphere of this expression is likely to be fairly small

for each person, right in their own immediate environs and in the context of their frequent concerns. This is not because FAT assumes some intrinsic limitation by distance with PK. To the contrary, it assumes that it is essentially boundless. But just as I choose generally to speak to those around me in our familiar language about our relatively contained cluster of concerns, rather than with some Norwegian I do not know about the goings on in his life, my PK will be as limited in scope as my speech and other behavior. For this reason, I assume that the anomalous events in the lives of the different members of the M-group are caused inadvertently by themselves, and not by other members.

An exception to this may be the pinwheels. As we learned during the Pandemic, one can have a real, if not entirely satisfying, sense of presence with other people and places through screens. For this reason, FAT would assume that any and all members might have effects on the shared pinwheels, even if McClenon's effects might be the most frequent, particularly between meetings.

So, let's consider McClenon's findings in light of the assumptions of FAT. The pinwheels moved much more when the groups were meeting than when they were not. This systematic relationship shows that while air drafts and other artifacts surely influenced the pinwheels, such artifacts should have been equally present in both conditions, and so cannot account for the greater movement during meetings. More than that, they show that when the group devoted its attention, interest, and emotion to the pinwheels, all while ramping up with each other a sense of PK possibility and excitement, the pinwheels moved.

This connection is further elaborated in the findings about group process. Perhaps the strongest contrast shown is between 2 kinds of conversation engaged in: one in which the paranormal was being talked up, and the other in which it was not. Larger movements virtually stopped when non-psi interests were being discussed, but were much more present when psi-related topics were instead. This difference in topics is a good indicator of the degree to which openness to PK was being actively indulged and invested with emotion in the moment. FAT says this is when it should be more expressed, and it was.

Similarly, FAT would expect that periods of meditation, inward and emotionally calm as they are, should bring the excited engagement in the topic down to zero, which is where the pinwheel activity was found to be.

Choosing to observe the pinwheels, to check on their behavior, would also be expected to abruptly break the excited engagement, and replace it with anxious, careful scrutiny. Anxiety, narrow focus, and cognitive work are expected by FAT to diminish the expression of psi, and they seem to do that here.

FAT would have more qualified predictions about the effect of emotion. Positive affect, especially in the context of

active interest in anomaly, should facilitate happy pinwheel movement. Negative affect, fear or anger or shame or contempt, should shrink the expression of PK, except when the expressions are matched to the feelings, aggressive or protective, perhaps.

Based upon their impressions, McClenon expected that instances of laughter would predict good movement, but it did not. FAT would again make qualified predictions.

Here, as in other places, some reference to the extensive psychological literature on small group processes would help efforts like this one. Most of the time, unless a group is well developed with good rapport, laughter is nervous laughter. It is indicative of tension, social unease, and uncertainty, sometimes boredom. These are all things that FAT would expect to be associated with low expression of psi. In a mature, bonded group, laughter is often a different thing. It can indicate pleasure, reduction of tensions, mutual affirmation, enjoyment of one another, and the kind of creative language that spontaneous jokes require. FAT would expect this sort of laughter to go along with active pinwheels, especially if the topic at hand has anything to do with the pleasures of anomaly.

An old paper by Tuckman (Tuckman, 1965) spells out a normative sequence of development for the lives of small groups. He calls the main stages *Forming*, *Storming*, *Norming*, and *Performing*. (See also Bonebright [2010] and Sorensen and McCroskey [1977] for information about the research and practical applications of these constructs). Early in the development of a group, when *Forming*, activity is highly leader-centered, and if, as in some therapy or training groups, leadership is rather vague, people are nervous, listless, uncertain and tentative. Further along comes a period of *Storming* which groups sometimes do not survive, in which differences of goals and style emerge and lead to conflict, and members challenge leaders. If this stage is negotiated successfully, the group moves to *Norming*; people resolve their differences, come to agreements about means and ends, relate positively with the leader again, form in-group language and history, and begin to enjoy and appreciate one another more. It is in this stage that a group forms the kind of core narrative or ideology recommended by Batchelder and sought by McClenon. Following this stage, the group can mature to *Performing*, in which it works effectively on its tasks, whether they are addressing emotional problems, planning a corporation's goals and policies, choosing how to spend a PTA budget, or setting pinwheels spinning on command. This is when a group functions really well and with gusto, and the group is truly more than the sum of its parts.

From the account in this paper, the various iterations of the M-group seem to have spent most of their sessions in the *Forming* and *Storming* phases. Membership changed a lot, and conflicts derailed the process more than once. This is not a criticism of McClenon's leadership or the members. These early stages, if not universal, are normal. The sizable literature

on small group behavior and development might be helpful to anyone wanting to extend this line of work. The work of the National Training Laboratory (NTL: Jones & Brazzel, 2014) would be a good place to start. A lot has been learned about how to prepare for group developmental issues and negotiate them successfully.

To reiterate, emotional urgency, response pertinence, psychological openness, and the blockage of normal physical action are held by FAT to be conditions facilitating PK. They don't always lead to it, but they may, and instances when they seem to, have been the stimuli to our invention of the PK construct.

The poltergeist girl I mentioned earlier, with whom I witnessed such mind-altering events, it was later revealed, began "expressing" these phenomena in the context of an abusive situation in which she felt imprisoned, but that she realized later she urgently wished to escape. The fact that it was not revealed at the time (although there were hints in her projective testing) is one indication of how trapped she was, unable even to name it.

Another former poltergeist girl recounted to me that one of her first experiences with apparent PK was when, as a child, she was grabbed and pinned down by an abusive teacher. She was helpless and terrified. Then, there was a loud noise, and the teacher was on his back several feet away, stunned and confused. Her family had been comfortable with stories about paranormal events, so there was the openness, the urgent need, and the inability to normally act on the problem.

But not every such dilemma leads to PK events. In fact, most do not. Why not?

And if, as FAT argues, PK is perpetually being employed, why do we not employ it beyond the body more frequently? We might also ask, why should we? After all, we all find lifetimes full of projects, concerns, and troubles to contend with just with our own bodies, as skillfully as we can manage to use them, so why ask for more to deal with?

And why go to the formidable amount of work that might be required to learn to use PK beyond the body? We might all have a pre-conscious grip on the extended world all of the time, but isn't it reasonable to think it might be very difficult to train that primitive grip, and develop the skills required for it to obey our intentions and be consciously useful?

I use the word "skill" purposefully. I want to venture here a tentative model for the development of extra-body PK, based on FAT. Adults may generally think that walking and running, sitting upright and talking coherently, and perceiving things correctly are just givens, requiring little attention and effort. This is because they have the adult's illusion that these are not all hard-earned skills. You learned them yourself once, at the cost of an almost unbelievable amount of effort, but you have forgotten that because you developed most of it when you were a baby.

If you have ever cared for an infant, or spent considerable time observing one, you will know what I mean. When awake, an infant keeps very busy. Perhaps she is your daughter. She squirms and jerks and flails and twitches, seemingly randomly and to no good effect. Watch her for a while, though, and you see her purposes and failures and achievements. She reaches and reaches and reaches and grasps nothing. Then, one day, with a reach, she grasps something, and a brief smile that suggests surprise and pleasure raises the edges of her mouth. Perhaps it is your finger that she grasps, and you smile back, and her smile learns a bit that your smile has communicated with hers. She seems to want to turn over. Again, much twisting and flailing, some bursts of frustration or interludes of sleep, then back to work. More work and more work, writhing and twisting. Come in later after her nap, and you find her on her belly, now exploring new surfaces with her hands, mouth, and feet. Back to work again. Trying to get up leads to so much falling down. She is training her nervous system to do her will. In terms of FAT, she is training her PK, which is the link between impulse and action, as well as intention and behavior. How disorganized her body is, how much it flies off in useless directions, until she learns to put it together, bit by bit. It's a good thing that she is too young to wonder if all this frustration means that her body is inhabited by strange spirits who enjoy tricking her, or perhaps reflects the possibility that the quantum indeterminacy of bodies means that these things can never be mastered. Unbothered by such ideas, she carries on her work, day after day. After so much trial and effort, failure and punishing failure, we see the succession of triumphs. She grasps, she pulls up, she stands, she walks, she speaks, and communicates. Of course, there are moments when the infant is not so active, when she stares around her, seemingly engrossed. She is training her skills of perception. She learns to pick out her mother's face and daddy's voice from all the faces and voices. She is training her in-mind ESP, her capacity to organize inputs, put things in categories, know what things are, and tell in a flash what matters the most.

We take these basic skills and make them the foundation upon which to erect other skills, and never rest on our laurels. Our body-centered use of psi is our ground, and we spend a lifetime elaborating it and building upon it. We do what we sense is most integral to our existence. Forming the skills to control the body, its movements and perceptions and communications, are what matter the most to the infant, and thence to all of us later.

But what if later in our development, we wish to have greater controlled access to the larger world beyond ourselves and employ our PK outside of our body? This model suggests that we will need to do something like what we did as infants – put a prodigious amount of effort into it. Remember the directions for getting to Carnegie Hall? Practice, practice, practice.

My model suggests that in this effort to train PK outside

the body, we will again be as inept and almost helpless as we were as children training our PK to move our bodies and our ESP to create our perceptions. Movements will be fitful and random and off-target more often than not. There will be much failure to try to redeem with the occasional success.

I think this is one way to understand the large number of anomalous events experienced by the M-group. They were the flailings of untrained skill.

Maybe the most dramatic one was experienced by McClenon himself. He had finished the series showing that group sessions produced more pinwheel movements than control periods, and he was probably feeling pretty happy with himself, thinking that perhaps a “group energy” was doing the moving, and he could tack a nice discovery to the bulletin board of science. Then he decided to do a one-trial test of this idea in which he was alone, no group involved, and he expected that there should be little movement. Instead, perversely, there was a lot of movement (FAT would say that his excitement and interest in PK were quite high at that time, facilitating more movement, not less). At the same time as this unwanted movement was occurring, another anomalous movement happened in his kitchen, while he and his wife stood facing a counter elsewhere in the room. A partly filled bottle of liquor somehow left its perch on top of the refrigerator to fall, hit the counter, break its cap, and hit the floor, then apparently bounce to an upright position, all while not breaking or spilling any of its contents. He calls all of this “improbable.” A later attempt to duplicate this by nudging the bottle off the edge led to shattered glass and a mess to clean up. Was this a prankish spirit at work, or an intrinsically indeterminate universe getting its revenge? Maybe it was the misdirected spasm of a barely trained skill. It seemed trained enough, though, to be partly on target, as if to say something like, “So you think your new idea pins this all down? Ha! You bet! Have a drink!”

If training PK outside the body is to be the arduous, failure-filled venture I am imagining, we had best do it in cheerful company, like the M-group in its most mature stage. Joe McMoneagle, the well-validated psychic of Stargate fame, has said that comparable group training is essential for developing the skills to employ psi beyond the body in remote viewing (McMoneagle, 2000). A hearty, mature group to learn with helps keep us in good spirits, and prevents isolation and loss of grounding in reality. It can provide the stimulation needed to invent new ideas to shape skills and, all the while, keep phenomena flowing. Objective feedback helps the learner distinguish between self-deception and genuine psi.

If it proves possible to develop such skills, we will find ourselves expressed beyond ourselves in new mirrors in surprising places. We will need to find a more intimate home outside ourselves than we are used to. We will need a respectful relationship with that extended physical world, as our life and its become more entwined than we now imagine. If others fol-

low the line of work in this paper, however far they get will be an adventure for all of us -- us and Alice and Lefty and Jim.

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**SPECIAL
SUBSECTION
TARGET ARTICLE
RESPONSE**

Reply to Commentaries on Putative Pinwheel PK

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SUBMITTED June 15, 2024
ACCEPTED June 18, 2024
PUBLISHED June 30, 2024

<https://doi.org/10.31275/20243471>

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I wish to thank Walter von Lucadou, Gerhard Mayer, and James Carpenter for their insightful comments. I respond by clarifying how my sociological methodology differs from traditional parapsychology.

Again, my experiments involved a ‘participant observation’ approach, where researchers immerse themselves in a particular social setting or group to monitor participants’ behaviors, interactions, and opinions (DeWalt & DeWalt, 2011). I also used grounded theory, i.e., an inductive strategy designed to gather qualitative data for hypothesis-testing and theory development. Resulting theories are ‘grounded’ in systematically collected and analyzed data. Grounded theory differs from standard deductive strategies that are common within parapsychology since it begins with fewer theoretical assumptions and allows greater methodological flexibility (Bryant & Charmaz, 2007). Grounded theory seems particularly appropriate for psychical research, which offers rich qualitative data but limited theory development. Within grounded theory, hypotheses, and associated theories, emerge as the research progresses.

Batcheldor (Bachelor & Giesler, 1994) found that macro-PK, in his table-tipping groups, resisted full scientific verification. Lucadou interpreted Batcheldor’s results using a general quantum theory model. Although I cannot operationalize all their variables, my pinwheel study findings generally coincide with their hypotheses. I believe their theories are sufficiently flexible that they can be refined through grounded theory processes. Gerhard Mayer’s analysis contributes to this endeavor. I concur with Mayer’s ideas regarding theory synthesis, including Carpenter’s (2012) work.

Gerhard Mayer expressed concerns regarding my research strategies: (1) My experiments did not begin with sufficiently controlled conditions, (2) They were not adequately systematic, and (3) They lacked clarity regarding theoretical models. Although these criticisms are valid using a traditional parapsychological perspective, grounded theory offers an alternate paradigm. Grounded theory suggests ignoring theories and hypotheses during early research phases. It advocates allowing hypotheses and methods to emerge ‘organically’ through data analysis. I argue that traditional parapsychological strategies, i.e., focusing on proving the reality of psi, actually thwart and distort psi. Laboratory psi differs qualitatively from the anomalous experiences reported by people in the general population. If we wish to understand psi, we should observe it in its natural state.

Criticisms, such as Mayer’s, are often directed by skeptics toward parapsychologists. Skepticism is a norm within science. Critics request increased controls or more ‘systemic’ strategies (McClenon, 1984), but within Batcheldor’s model, skepticism thwarts psi. I will discuss an example of one of my ‘unsystematic’ strategies. In September 2020, after the pinwheel turning declined, I introduced a lighted candle to the



pinwheel environment. My hypothesis was that the candle would increase pinwheel turning through heat convection. According to Batcheldor's model, this should result in greater belief followed by increased pinwheel turning due to authentic PK. The pinwheels behaved in unexpected, erratic ways. During one experiment, the candle burned extremely brightly, its flame flickering as if there were a strong wind in the closed off room while the pinwheels remained almost still. During another experiment, the flame was completely tranquil while a pinwheel turned robustly. Another time, the candle closest to the candle flame remained still while a pinwheel farther away turned. I tried introducing a larger, hotter candle, but the pinwheel turning became even more erratic, a wavering back-and-forth that I regarded as an artifact. Over time, the pinwheel turning declined.

I am uncertain how to interpret these results. Perhaps a sentient entity is involved, but so far, all attempts to generate evidence supporting Spiritualist explanations have failed. It seems as if a 'psi trickster' is active (for recent discussions, see Drinkwater et al., 2019; Kennedy, 2024; Storm, 2023). The pinwheel phenomena seem to say: "We are real, but you can't control us. We don't fit your theories." After months of inconsistent results, and reduced pinwheel turning, I removed the candles. What does Mayer recommend? What 'system' explains these outcomes?

Other 'unsystematic' experiments included covering pinwheels with plastic domes, conducting experiments with no observers, covering cameras with plastic domes, and varying the degree of covering of a pinwheel in an inverted plastic dome. Many modifications generated unexpected outcomes and apparent trickster-like effects. During one experiment, the pinwheel inside an inverted plastic dome (open at the top) turned robustly while the other pinwheels remained still (Dec. 1, 2022). The turning was even more robust during non-experimental periods.

I speculate that the phenomena have sentient, contradictory, and dream-like qualities. Their behaviors may reflect our mental processes, but I do not think that our current psychological theories fully explain the observed outcomes (I concur with Lucadou about this). It is as if the pinwheels (1) Want to reveal themselves as sentient, (2) Want to hide their sentience, (3) Want to violate our expectations, and (4) Are aware of and responding to our emotions. I am open to suggestions regarding future experiments, but I will consult my working group before making decisions. Some participants resist skeptical suggestions as they want the phenomena to continue.

Many years ago, Mayer suggested that I read Lucadou's (Lucadou & Wald, 2014) work. I am grateful for this advice. Recently he suggested that I consider James

Carpenter's (2012) model — also good advice! Carpenter (2012) offered insights into generally hidden 'everyday' psi. He argues that psi is part of a preconscious process involving personal intentions using information beyond the senses. He argues that psi helps us to optimize our responses while hiding within every thought and action. In his comments, he noted possible methodological weaknesses in my pinwheel experiments, but chooses not to discuss these issues. I acknowledge that grounded theory involves innovative, untried strategies. Carpenter's (2024) discussion revealed the important impacts that psi experiences have on belief. Those who experience macro-PK do not require formal proof that psi is real. Their experiences compel belief. This is akin to Clarke (1995), for example, who found that people's belief in ghosts is often attributed to personal experience. This observation also coincides with survey results from a sample of elite American scientists (McClenon, 1984). Those reporting anomalous experiences were more likely to believe in ESP, while those claiming greater familiarity with the ESP literature tended to be more skeptical.

Carpenter's model describes physiological processes amenable to evolutionary selection. Physiologists may someday uncover hypothesized mechanisms. His discussion of skepticism is particularly interesting. He stated, "All of us almost all the time are psychologically stuffed with the presumption of the non-occurrence of psi. This is highly functional" (Carpenter, 2024, p. 331). This coincides with the Ritual Healing Theory (McClenon, 2002) argument that evolutionary processes shaped our consciousness and its capacity for anomalous experience. A more positive way of thinking about Batcheldor's 'fear of psi' is to re-label it as 'maintaining our consensual reality.' Although I have been unable to quantify 'affect' or 'emotion' through content analysis of my experiment conversation data, group members concur that our individual or collective emotions seem to affect pinwheel turning. This observation is in harmony with Carpenter's theory. Perhaps we can combine theoretical insights regarding the nature of consciousness, quantum processes, and psi's trickster qualities.

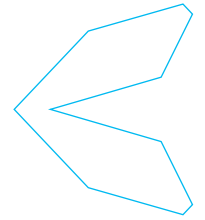
The online group PK experiment is an ongoing project. Originally, I hoped to devise a unifying story, parallel to the Philip Experiment, in which the group shaped a core narrative. I hoped that a fictional or Spiritualist narrative would help us to generate PK, but our group did not agree regarding emphasis on Spiritualist or secular orientations. This is parallel to our lack of theoretical consensus. Instead, I offer our lived, non-fiction story: *A group with psi-prone participants perceived collective PK through meeting regularly. The story continues. Since it happened to me, it can happen to you. It has been happening to*

people since the Paleolithic. Further experiments will provide insights regarding the degree that presuppositions and cultural factors shape outcomes.

My article offered a 'recipe' for experiencing ostensible group PK. I am reminded of a joke describing a recipe for making bear soup. The first instruction is: 'Find a bear.' This is a metaphor for psychological researchers. If we wish to understand psi, we need strategies for generating experiences. Perhaps we should avoid methods that thwart or distort psi. I am open to suggestions. I encourage people prone to PK experience to contact me.

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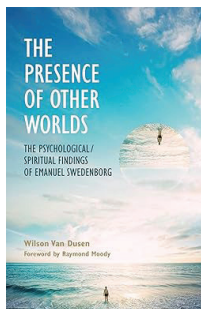


BOOK REVIEW

The Presence of Other Worlds: The Psychological/Spiritual Findings of Emanuel Swedenborg

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VanDusen, W. (2004). *The presence of other worlds: The psychological/spiritual findings of Emanuel Swedenborg*.

Swedenborg Foundation.

ISBN-13: 9780877853121

<https://doi.org/10.31275/20243265>

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This retrospective review marks the fiftieth anniversary of the publication of *The Presence of Other Worlds* (1974, Harper & Row). Emanuel Swedenborg (1688-1772) was a Swedish scientist, philosopher, and theologian who spent the first part of his adult life understanding and explaining the natural world and the second part of his adult life understanding and explaining other worlds, that is, the spiritual realm. The 1991 reissue of this biography contains (as does the present printing) a foreword by Raymond Moody. Moody states that Swedenborg “scrupulously documented his observations during the otherworldly voyages and produced a virtual atlas and travelers’ guidebook of the other side. Many of the details of his reports check out quite well with today’s familiar accounts of out-of-body trips and near-death experiences.” (p. x) Moody also suggests that the experience of photism—seeing in one’s mind a flash of light when what one is thinking meets with inward approval—is more common than people believe. Swedenborg and Moody experienced it, and he predicts that “a systematic investigation would uncover many more examples of this fascinating and anomalous talent.” (p. xiii) In the introduction to the 2004 edition of his book, Van Dusen writes that he also “experienced a series of religious visions.” (p. xv)

For context, I begin with a brief look at the life of the author. Wilson Van Dusen (1923-2005) earned a PhD in clinical psychology from the University of Ottawa. He worked as a clinical psychologist at Mendocino State Hospital in Ukiah, California, for sixteen years. (p. 135) He went on to serve as an associate professor in psychology at J.F. Kennedy University in California and as Associate Director of the Awareness House Training Center in Berkeley, California. Van Dusen was well-published, authoring eleven books and approximately 375 articles in his field. (p. 251) The topics of his scholarly articles range from the narrowly clinical to the philosophical and religious: reporting the results of an experimental treatment for alcoholism, nonmedical unit administration; a central dynamism in chronic schizophrenia; existential analytic psychotherapy; and LSD in relation to Zen. So, what motivated this well-established chief of clinical psychology to write a book about an eighteenth-century mystic? Van Dusen offers us an explicit answer: “My purpose in writing this work is simple: to bring Swedenborg within the reach of many.” (p. xvii)

Before reviewing the contents of each chapter, let me comment on some general features of the volume. The book is well composed, with a good balance of quotations from Swedenborg’s works along with Van Dusen’s commentary, all woven together with a consistent psychological thread. (Indeed, out of ten other biographies of Swedenborg in English, this is the most psychological of them.¹) This threading includes an examination of Swedenborg’s mental states along with Van Dusen’s own special psychological experiences in dialogue with both a few clinical cases and well-known psychologists





Figure 1. Wilson Van Dusen. *New-Church Messenger*

such as Carl Jung. Importantly, the tone throughout the book is open, respectful, calm, warm, and learned but approachable and personable. As a confessional Swedenborgian and associate professor of philosophy at a Swedenborgian college, I can affirm that Van Dusen's portrayal of Swedenborg is accurate and even-handed. Lastly, the book contains a bibliography of Swedenborg's theological works, although, somewhat regrettably, it lacks an index.

The first three chapters of the book introduce the reader to Swedenborg, the man. Chapter one includes a list of sixty-one of Swedenborg's scientific works and inventions. This gives the reader a sense of his areas of expertise and interest. These areas range from subjects associated with his work as an assessor for the Board of Mines (a very important industry in Sweden), such as iron, copper, tin, hydrostatics, blast furnaces, commerce and manufacturing, to algebra, theoretical physics, the infinite and final cause of creation, and a series of books on the human body (muscles, blood, nerves, senses, brain) and mind (empirical and rational psychology). In chapters two and three, Van Dusen examines the psycho-spiritual processes by which Swedenborg went from being an explorer of the external world in search of the truth about natural reality to an explorer of the internal world in search of the truth about humanity and God. Here, the author deftly draws on both his professional expertise and his personal experience to explain the hypnogogic state, dreams, trances, meditation, autosymbolism, automatic writing, and spiritual experiences and how these differ from psychoses and hallucinations.

Chapters four and five present Swedenborg's findings regarding the presence of other worlds, which worlds include the heavens, hells, and the intermediary state

between them known as the world of spirits, together with his views on human nature. The two chapters form a nice set because, as Van Dusen writes later, "*The spiritual worlds beyond this one are the essential nature and potentiality of human experience.*" (p. 227; emphasis in original) This doesn't mean that the spiritual worlds are projections of an individual's consciousness. Instead, it means that our affective and cognitive experiences are already heavenly or hellish. Van Dusen explains Swedenborg's view of consciousness as spiritually transcendent, noting that: "we are transcended by our own inner nature" and "our conscious experience is a transcendence coming to earth in our lives..." (p. 119). When it comes to the "production" view of brain/mind correlations in contrast to the "filter" or "transmission" view, Swedenborg and Van Dusen hold the latter position. A person's consciousness is part of a symbiotic system that spans both natural and spiritual worlds. Just as the term "holobiont" has been introduced to better capture the reality of natural organisms, so Swedenborg describes our spiritual associations to better capture the reality of our psychological ecology.

Chapters six and seven are likely to be of most interest to readers of the *JSE*. In chapter six, "The Presence of Spirits in Madness," Van Dusen explains how an "accidental discovery in 1964" allowed him to gain "a much more detailed and accurate picture of psychotic hallucinations than had previously been possible." (p. 135) He examined thousands of mentally ill persons and "gradually noticed similarities between patients' reports and Swedenborg's description of the relationships of the human being to spirits." (p. 135) Van Dusen uses quotations from Swedenborg's theological works and *Spiritual Diary* to support his claim about the similarities. The primary benefits of using a Swedenborgian approach are that it "accounts for otherwise quite puzzling aspects of hallucinations," it enables the collection of more data to analyze, and it helped Van Dusen understand and relate to his patients. (p. 136ff) This chapter also includes a brief consideration of whether Swedenborg himself was insane. Chapter seven, "Minor Miracles," relates what Swedenborg considered of little interest but what his contemporaries were astonished by, namely, his parapsychological powers as a mental medium. Van Dusen describes three examples of Swedenborg's extrasensory perception, two incidents of precognition, and three events involving communication with the dead. Throughout the chapter, the author provides quotations from primary source material and, toward the end, offers an explanation of the phenomena using Swedenborgian metaphysics.

Chapters eight ("Existence as Symbolic") and nine ("Inner Meanings") form another natural pair as both explicate Swedenborg's concept of correspondence. Van

Dusen offers the following distillation of Swedenborg's doctrine of correspondences: "The kernel of the whole idea of correspondences is that Something is manifesting and showing itself in many ways." (p. 198) He then quotes from Swedenborg's *Arcana Coelestia* (Secrets of Heaven) §3483: "[T]he whole visible universe is ... nothing else than a theater that is representative of the Lord's kingdom. And this in turn is a theater representative of the Lord Himself." In theological terms, all levels of creation bear the image and likeness of the Creator in some way; in philosophical terms, Ultimate Reality is expressed through a series of discrete and continuous degrees such that there are macrocosms and microcosms. The many layers of existence are not static, for there is a continual influx of life and a resulting response on the part of the receiving vessels, and the layers are organized to allow the transmission of meaning. Van Dusen illustrates correspondences through brief examinations of religious ceremonies, astrology, magic, myth, alchemy, projective psychological tests, psychosomatic medicine, dream interpretation, visions, the human body, and ancient languages. The section on the language of correspondence in chapter eight is a useful bridge to Van Dusen's explanation of Swedenborg's hermeneutics in chapter nine. Here the author helpfully portrays in side-by-side columns three excerpts from the Bible along with their corresponding spiritual sense. These show how the concept of correspondence, when applied to ancient texts from Genesis and Matthew, results in a systematic symbolism that speaks to human spiritual development, *not* the literal beginning or end of the world. Reflecting on Swedenborg's lofty endeavor, Van Dusen writes that "Knowledge of the language of the unconscious and an interest in biblical meaning seldom exist in one person; those interested in depth psychology are usually not interested in the Bible, and biblical scholars find the language of the unconscious merely a curiosity." (p. 200)

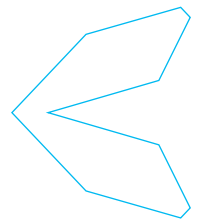
Chapter ten, "The One Present," touches upon several aspects of Swedenborg's theology, including salvation, ethics, metaphysics, and religious pluralism, but is primarily concerned with the nature of God. Van Dusen is especially moved by the sensitive way in which Swedenborg:

...gently put[s] his finger on where in all of varied existence the Lord is to be most intimately known: in the very inner connection of humanness to the Divine. There is the pulse of the relationship: 'God is the essential person, from whom we are human by virtue of our acceptance of love and wisdom.' *Divine Love and Wisdom* §289. (p. 229)

In addition to the more obvious use of this book as an introduction to Swedenborg, it also offers an interesting case study of a publicly recognized scientist whose quest to understand the human soul and life itself, led not only to a personal transformation, but also to the development of a detailed description of the life after death, situated within a philosophically and scientifically well-informed theology. This book also serves as a good introduction to a spiritual and theistic point of view regarding reality, consciousness, causality, knowledge, and human experience. Readers interested in the influences behind thinkers such as Immanuel Kant² and William James will also benefit from this book.³

ENDNOTES

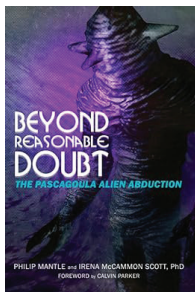
- ¹ The ten biographies to which I refer are the following:
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- ² See Gottlieb Florschütz's *Swedenborg's Hidden Influence on Kant*, trans. by J. Durban Odhner and Kurt P. Nemitz (Bryn Athyn, PA: Swedenborg Scientific Association, 2014) and Gregory R. Johnson's *Kant on Swedenborg: Dreams of a Spirit-Seer and Other Writings* (West Chester, PA: Swedenborg Foundation, 2005). Florschütz aims to show that in Kant's later works, he left room for occult phenomena of the kind that Swedenborg experienced.
- ³ The author wishes to thank his colleague, Dr. Marcy Latta, for her assistance with this review.



BOOK REVIEW

Beyond Reasonable Doubt: The Pascagoula Alien Abduction

Ron Westrum



Mantle, P., & McCammon, S. (2023). *Beyond reasonable doubt: The Pascagoula alien abduction*. Flying Disk Press.

ISBN-13: 979-8850206130

<https://doi.org/10.31275/20243269>

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I believe that this book should be read by everyone with a genuine interest in UFOs (UAPs), even though it is long, even though it would benefit from further editing, and even though it is only about two abductions, not tens of thousands. It answers many questions.

The first question it answers is whether alien abductions are real, physical events. The answer is “yes.” The main focus of the book is two alien abductions that took place two hours apart. One of them, the Hickson-Parker case (1973), has always been in the top tier of abduction cases. This was a case where the honesty and testimony of the main witnesses, Charles Hickson and Calvin Parker, could hardly be doubted. These men told police and Air Force officials what they had experienced. This has been a rock-solid case for years.

The second abduction took place with Jerry and Maria Blair and was two hours later than the Hickson-Parker abduction. It happened upriver from the Calvin-Parker abduction and apparently with the same set of weird-looking aliens. This abduction did not emerge until 2019, an interesting observation in itself since the Hickson-Parker abduction that took place in 1973 was reported within the same 24 hours that it happened. In other words, it emerged 46 years later. One of the authors of this book, Irena Scott, arranged a hypnotic regression to capture the details of the abduction. The transcript of that regression of Maria Blair is included in the book.

In addition to these primary accounts of the abductions, a key feature of the book is the inclusion, with many photographs, of additional witnesses not to the abduction itself but to the craft that evidently featured in these abductions. In other words, whatever took place during the “abductions”, at least forty-something other people saw the craft involved. This is the answer to question #2, namely, if there was a craft involved, could other people see it? The answer is a resolute “yes.” So, this was something real and definitely physical. It can be compared to the O’Barski case, investigated by Budd Hopkins and Ted Bloecher (1976). This latter case involved a liquor dealer who happened to witness a “flying saucer” that disgorged little men onto a public park in New Jersey, across from Manhattan.

But a survey of the New Jersey neighborhood by Ted Bloecher showed that there had been other witnesses to the craft (although not the little men). The survey also revealed that there had been physical damage to the door of the nearby Stonehenge Apartments, a glass door that cracked when there was a light on the hill (presumably the UFO).

The O’Barski case was written up in the local New York publication, the *Village Voice*, and re-published in *Cosmopolitan* magazine. The letters responding to this article propelled Budd Hopkins to start an intensive investigation of abduction cases. These



cases were reported in several books, including *Missing Time* (1981). The underlying point here is that the first recourse of the abduction investigator may not be to the psychologist but to the neighborhood. If abductions are real, the craft may have been visible to others. One needs to search out those others.

The book also describes the Under-Surface Object (USO) discovered in the Pascagoula River, potentially related to the abductions.

I will not take the time here to sketch out what we know about other abductions. All this has been explored in many books on the subject. It includes the missing time, the life-long series of abductions that most experience, a gathering of sexual samples, the trauma, the regressive hypnoses, the implants, and similar subjects. For those interested in knowing more, I recommend the book by Steve Aspin, *Out of Time*, which is reviewed elsewhere in this journal (Aspin, 2023).

I will also not take the reader's time here to review the often very silly but almost always speculative hypotheses used to explain abductions by those who seem to lack the time to do serious research. These include various forms of sleep hypnosis, folklore, mass hysteria, etc. I believe that Susan Clancy's book *Abducted: How People Come to Believe They Were Kidnapped by Aliens* (2005) falls

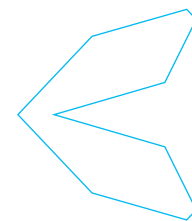
into this category. Her treatment of the Allagash Abductions alone would suggest the gossamer quality of her explanations, as opposed to the disturbing reality carefully investigated by Raymond Fowler (1993).

This book is also evocative of the often oblique paths along which information about anomalous events travels. Things may be hidden for years but may come to light because of a similar report surfacing or an episode of a television program or an interview.

Finally, I want to commend the authors for their energies and diligence in bringing these events to light and thank the witnesses, including Calvin Parker and Maria Blair, for sharing these deeply disturbing experiences with us.

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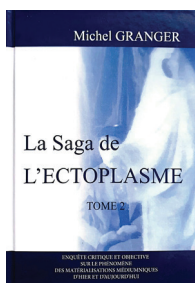


BOOK REVIEW

A Critical and Objective Investigation Into the Phenomenon of Mediumistic Materializations of Past and Present

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Granger, M. (2022). *La Saga de l'ectoplasme, tome 2. Enquête critique et objective sur le phénomène des matérialisations médiumniques d'hier et d'aujourd'hui* [The Saga of Ectoplasm, Volume 2. A critical and objective investigation into the phenomenon of mediumistic materializations of past and present]. Pologne : Le Mouvement Spirite Francophone

UGS : 978-2-492234-15-6

<https://doi.org/10.31275/20243149>

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After the first volume of this Saga, published in 2021 (see my review: Evrard, 2022), here comes the second of three volumes in this epic. Michel Granger has a Ph.D in physical chemistry and is a retired chemist engineer from private industry. He is already known from the anomalistics scene as the writer of 13 essays, some about extraterrestrials, cattle mutilation, coincidence experiences, futurology, and more than 1,600 articles and chronicles in various French more or less scientific magazines and journals.

BOOK DESCRIPTION

The 918 pages of this new opus cover just four parts and an index of proper names that alone spans 27 pages. That's an indication of how long the parts are. They take the form of mini-files arranged in chronological order. There is a great deal of redundancy (without repetition), not only with the first volume, which already presents some of the leading mediums but between the parts where we regularly find the same actors (mediums and researchers) and the same controversies. For example, the Polish medium Franek Kluski will be mentioned in two subsections of the first part and in at least one subsection in each of the other parts. Anyone wishing to form an opinion on this medium alone would have to put the puzzle together again. The same goes for Margery, Guzik, Palladino, Béraud, and so on.

The choice made for the first two parts is based on a not always obvious categorization between "private experiments" (Part 1, pp. 15-224) and "official tests" (Part 2, pp. 225-450). How can we systematically decide on borderline cases? The same research conducted by Geley with Kluski in the early days of the Institut métapsychique international falls into both categories.

But that's not the point. Once again, what stands out is that Granger knows these files through and through, and has a great eye for detail. This is sometimes pushed to the point of writing footnotes that themselves take up an entire page. This researcher has documented his work throughout his life, contacting all those who have shown an interest in ectoplasms from near or far, looking out for works that are impossible to find on specialized websites, and translating them himself using tedious computer resources when he doesn't know the language. We must acknowledge the courage and quality of this endeavor.

The other two parts of this volume deal with "Controls' and evidence by photos, films, prints and 'molds'" (Part 3, pp. 451-553) and "Doubts and frauds" (Part 4, pp. 555-888). This last part is by far the most important and original, while the others are mainly extensions of the files and methodology already present in the first opus, consisting of describing and analyzing cases, adding photos of varying qualities, and giving a score out of 10 to indicate the credibility of each demonstration.



SUMMARY OF PARTS

The first part follows on from the first volume in that, after studying private spiritualist circles, from which nothing credible emerges, Granger examines the private circles of psychical researchers, when they visit the medium's home or invite him or her into their homes. Covering a period from 1870 to 1955, 33 sub-sections examine, among others, D.D. Home and Sir William Crookes, Kate Fox and Alfred Russel Wallace, Eusapia Palladino in Europe and America, the work of Dr. William Jackson Crawford, Baron von Schrenck-Notzing, Charles Richet, Gustave Geley and Glen Hamilton. What can we say, except that the results are frequently convincing, but the conditions are always inadequate to convince anyone beyond the privileged psychist circle.

The second part deals with official tests on materializations and ectoplasm. The difference here is that researchers are mandated by a collective, an institution, a committee, or a commission to establish research that they will report on regardless of what happens. These commissions are often made up of researchers with varied backgrounds and intentions. Their succession suggests that they have only a passing impact on public opinion and do not result in the constitution of a cumulative body of knowledge.

From 1869 to 1994, 31 files are studied. An ellipse is nevertheless made on the whole post-World War II part, with the exception of an English case in 1994, but it's built this way because the third volume of the Saga will be entirely devoted to the question of contemporary cases.

The first dossier is on the committee studying spiritualism at the London Dialectical Society. Some rather amateurish aspects are rightly criticized. The second deals with the investigations of the Sidgwick group (between 1873 and 1875, then between 1875 and 1880), a prelude to the creation of the Society for Psychical Research. Then there are the tests of Palladino at the Institut général psychologique; of several mediums in the various psychical research societies around the world; the Scientific American commission around a proposed prize of \$2,500 in 1923; the studies of mediums at the Sorbonne (Béraud in 1922 and Guzik in 1923); the opposition between Margery and Houdini; the work with Rudi Schneider in various countries, and so on. Each time, the pros and cons are weighed up, delimiting the share of valid criticism and the share of phenomena that continue to challenge.

The third part is more methodological and epistemological, with 21 sections. What evidence has been provided, and what is expected? The cases listed are then analyzed cross-sectionally. Does light really have an annihilating effect on ectoplasm? This does not seem to be the

case everywhere, nor can it be fully justified. To respect this condition imposed by certain circles, Granger proposes to strike a balance by advocating the widespread use of infrared (p. 484) and thermal (p. 888) cameras. This would optimize production and control, as Louis Favre would have wished in his day (Evrard, 2017).

Asked whether too many controls could kill the phenomenon, Granger takes issue (p. 462). He rejects any hypothesis of a possible intrinsic elusiveness to phenomena (p. 188), which would thus react negatively to attempts to objectify them.

Several sections are devoted to attempts to cast ectoplasmic limbs in heated parafin. Here again, the author's precision is unsurpassed. However, he sometimes proposes alternatives that deserve further verification. Thus, to cast doubt on the extremely thin parafin gloves described by Geley in his experiments with Kluski (pp. 548-549), into which plaster was poured to obtain certain famous molds, he recalculates the weight (25 grams) of the gloves obtained in controlled sessions, in relation to the surface area of a hand (60 cm² of an adult and 40 cm² of a child) and the density of parafin (around 1g/cm³). The result is gloves so heavy that, *in theory*, they should be six times thicker than Geley claims. However, the superimposition of parafin layers is precisely a way of making them stronger, so that a hand slipped inside can be removed without breaking them. The argument could become decisive if counter-experiments were conducted *in practice* to verify these calculations more systematically.

Finally, the last part is made up of 50 subsections discussing doubts and frauds. All ectoplasm-producing subjects are said to have cheated at least once (p. 564 ff.). Without giving up, Granger analyzes in detail the value of these accusations and the consequences that should be drawn from them. Particular attention is paid to the study of Crookes' experiences with Florence Cook, too often summed up elsewhere in distressing shortcuts. Palladino, Margery, Harry Price, and other famous cases rub shoulders with little-known examples. Granger makes a clear distinction between proven and presumed frauds, which the usual commentators on these controversies don't always do. He also identifies the fact that most of the frauds brought to light were exposed by the psychists themselves, some of whom attested to the reality of the phenomena in other sessions. The aim is to show that deception has been clearly identified in some cases but that it would be absurd to systematize this explanation by asserting that everyone has been deceived all the time.

One regret on my part: the treatment of the Villa Carmen dossier (pp. 701-729), where Charles Richet (along with other researchers) conducted experiments in the summer of 1905 with the medium Marthe Béraud. In it,

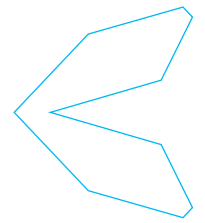
Granger blithely mixes sessions organized by Richet with sessions where he was not present, ignores certain contradictions to criticisms that have already been made (see, e.g., Evrard, 2016, chap. 5), and concludes the whole thing with an extremely low credibility score of 3/10. According to our exchanges prior to writing this review, this “unfavorable” treatment is linked to the disappointment engendered by Richet, who was initially one of his models for investigating ectoplasm. Although Granger claims to apply a neutral methodology, giving equal credit to testimony “for” and denunciation “against” (p. 653), it is not easy to extract oneself from any bias.

This shows that even if, like a perfect collector, he gathers together the largest quantity of material available on ectoplasmy, this work will remain that of a researcher, with his own vision of things, and may be discussed and interpreted differently by researchers with at least as much material. In this way, anyone seeking an informed

opinion on the (im-)possibility of ectoplasm can no longer bypass Granger’s work. The third volume, which will bring the Saga to a close, is due to be published in the following year.

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BOOK REVIEW

WTF Just Happened?!: A Sciencey-Skeptic Explores Grief, Healing, and Evidence of an Afterlife

Neal Grossman



Entin E. (2022). *WTF Just Happened?!: A Sciencey-Skeptic Explores Grief, Healing, and Evidence of an Afterlife*. WTPH Just Happened, LLC.

ISBN 13: 979-8985287233

<https://doi.org/10.31275/20243443>

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Before being asked to review this book, I had already met the author twice. First at the annual (2023) SSE meeting in Bloomington, then a month later at the annual IANDS conference in Washington. I was deeply impressed by her integrity, the depth of the questions she asked and the comments she made, and also her irreverent but warm sense of humor. Later, when the book editor asked me if I would review a few books, I said no. I told him that at my current age (82), I still have some things I want to say and cannot involve myself in other peoples' work. But when he told me that one of the books was by Elizabeth, I jumped at the opportunity and am glad I did.

This is a book by a grief-stricken, brash, and irreverent New Yorker. *Liz*, as she prefers to be called, was raised as an atheist/materialist, believed that spirituality was a lot of nonsense, and in particular, that mediums and psychics were all frauds. This is the view of all atheists. Liz's father dies when she is twenty-seven years old, and she is overwhelmed by intense grief. Devasted by her loss, and strongly motivated to discover whether, despite her atheist beliefs, there is any chance her father might have survived the death of his body, she begins to research and explore the world of mediums.

Now, on a personal note, I can recall that when I was her age and just beginning to explore these things (I was motivated by curiosity, not grief), I knew that I wanted to believe, so I was vigilant that this desire to believe would not be the reason I came to believe. Similarly, although Liz wants to find her dad, she doesn't want her beliefs to be based on wishful thinking, but on hard, scientific evidence. As she encounters various mediums, she is very vigilant against coming to believe just because a part of her wants to believe. But unlike the great majority of so-called "skeptics", she is intellectually honest and does her homework. The "homework" here has two components: (i) scientific research: she reads the books and papers by scientists who have formally studied mediums and have concluded it is real. She has studied the writings of Jim Tucker, Ian Stevenson, Gary Schwartz, Julie Beischel, and others, whose work would be familiar to readers of this journal. The second component to the "homework" is to experience mediums personally. She connects personally with several mediums certified by the *Windbridge Institute* and also by the *Forever Family Foundation*.

Now, the title of her book, "What the Fuck Just Happened?" refers to the many times that she, as an atheist/materialist, is confronted with experience that she cannot explain in materialist terms. But the book could have been titled "An Honest Atheist Meets the Empirical Data that Has Falsified Atheism". Most self-proclaimed atheist-materialists are *not* intellectually honest, as they studiously avoid both the science and personal experience necessary to evaluate mediumship. But Liz doesn't just get a few readings from a few mediums. She goes to their classes and workshops and gets to know several mediums personally. And there are some very funny moments where she struggles to



maintain her objective skepticism while socializing with the mediums. For example, when she meets a medium socially that she has not yet had a reading from, she tries to conceal her identity to prevent any chance that the medium could obtain information about her. When the social awkwardness of her trying to conceal her identity becomes too much, she tells the mediums what she is doing, and to her surprise, they encourage her. Another “WTF” moment that was humorous to me (but maybe not to Liz at the time) involved her being in a mediumship development class. The class is paired off, and each gives a reading to the other. Liz insists that she is just making stuff up, but it turns out that her accuracy rate is way, way beyond chance. The mediums tell her that she could become a medium, too, if she chose to develop her skills.

If I were still teaching (I was a philosophy professor for forty years), I would definitely use this book as a text. I believe that philosophical issues are best discussed, not in some abstract conceptual way as is done by academic philosophers, but as they emerge in the context of real-life situations. A major philosophical issue that pervades the book is the relationship between evidence and belief. We may agree that belief should be based on evidence, but the question is, how much evidence is sufficient to support or compel belief? There are two kinds of error that one can make: (i) One can believe in something without sufficient evidence, and (ii) one can fail to believe in something for which sufficient evidence exists. Liz is so concerned about not making the first error that, in my opinion, she makes the second error. And her dad agrees with me! (I had a few “WTF” moments myself while reading her book) As I’m reading her account of mediums’ readings, with hit after hit of detailed accurate information ---information that I judged to be more than sufficient to compel belief ----- she is still skeptical, trying to figure out how the medium could have obtained the information in ways other than by direct communication with the deceased. The thought comes to me, “My goodness, how much evidence does she need?” I turn the page, and read:

.....words came to me along with an incredible energy. I didn’t actually HEAR the words in my ears; it was as if they poured into me out of nowhere, not through my normal physical senses. They were in my dad’s voice.

‘JESUS CHRIST! HOW MUCH FUCKING EVIDENCE DO YOU NEED?’

That was exactly the kind of thing he would say. (p. 226)

So, from an epistemological perspective, her dad is accusing her of committing the ^{second} error mentioned above, of failing to believe something (personal survival) for which sufficient evidence has been provided. Generalizing, I believe that many of us would agree with her dad. The empirical evidence that shows that consciousness survives the death of the body, much of it published in this journal over the years, is more than sufficient to compel belief. But, the majority of academically trained scientists and philosophers do not examine the evidence. And, if Liz were not so desperately motivated by extreme grief, she would not have examined the evidence either.

And speaking of grief, every grief counselor should read this book. Many grief counselors have been conditioned by the atheist/materialist mindset to encourage their patients to disconnect emotionally from the deceased for whom they are grieving. They are encouraged to accept the finality of their loss and get on with their lives. But if I may use Liz’s colorful language here, this is just bullshit. The materialist therapists presume to know that survival is not the case and guide their patients accordingly. But if survival is the case, as an abundance of evidence shows, then this kind of therapy is very harmful to the grieving person. Liz’s grief is alleviated by two things: (i) in the workshops and classes she takes, she is surrounded by others who are also grieving a lossshe connects with others at a deeper level than the merely social, and this level of connection is deeply healing. And (ii) she receives and witnesses many others also receive detailed, accurate, and meaningful information from deceased individuals. It is probably difficult to grieve for someone you’ve just talked with.

But Liz is still not done questioning the whole thing, and almost in passing, raises an important philosophical question that I want to comment on. Towards the end of the book, she accepts that materialism is false, and that consciousness is real, but is not yet convinced that *individual* or personal consciousness survives. Perhaps the specific mode of consciousness that she knew as her dad has merged with or has been absorbed into some larger consciousness and, hence, no longer exists as the specific being she knew and loved. I like the simple clarity of how she framed it. She asks one medium:

How do you know you are actually communicating with deceased individuals? What if there is some universal consciousness of love, and it presents itself in the form of our deceased individuals because that is how we understand love. But it isn’t truly them and we don’t actually continue as individuals. (p. 376)

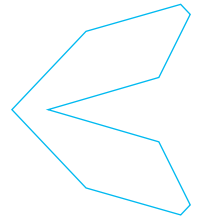
And a little later, she asks another medium:

How do you know that all this comes from individual consciousness. How do you know that it doesn't just blend or fade, or that it is not just some universal love that we interpret as those individuals we love? (p. 392)

The mediums were not able to address this question. I myself did not believe that individual consciousness survives until I immersed myself deeply in the study of the Near-Death Experience. There are many accounts of deep NDEs in which the person simultaneously experiences herself as being indivisibly united with a Higher Consciousness and, at the same time, as the individual

consciousness that they are. The reports clearly state that individuality does not fade after death, but on the contrary, is greatly enhanced. But if I may be permitted to use her brash, irreverent language, I would say to her something like:

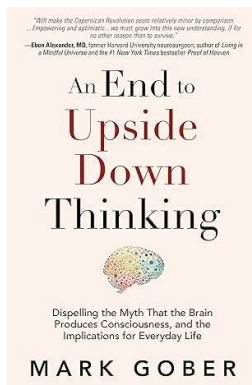
Liz, who the fuck do you think you *are*? You are not just some 'skin-encapsulated ego'. You *are* that very 'universal consciousness' manifesting as the form that bears your name. And so is your dad, and so are all of us". This view has been called the "One Mind" hypothesis, or more simply, Idealism. Or as the Hindus put it, "That (the universal consciousness) Thou (the individual consciousness) Art".



BOOK REVIEW

An End to Upside Down Thinking: Dispelling the Myth That the Brain Produces Consciousness, and the Implications for Everyday Life

J. Kenneth Arnette



Gober, M. (2018). *An end to upside down thinking: Dispelling the myth that the brain produces consciousness, and the implications for everyday life*. Waterside Press.

ISBN 13: 978-1947637856

<https://doi.org/10.31275/20243445>

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In the last three decades, research in consciousness has greatly expanded. Investigations into anomalies related to consciousness and, more broadly, parapsychology, have revealed that materialistic explanations consistently fail to explain well-established anomalous phenomena. It is clear that if we want to understand such anomalies, we need to expand science in new ways that can deal with realities beyond the laboratory. There is a wide variety of parapsychological anomalies awaiting such an expanded science, far more than enough to justify new lines of inquiry. These anomalistic data cry out for a new way of thinking and a reconceptualization of the standard scientific method.

A major case in point is a theory that has emerged from the field of near-death studies, which focuses on near-death experiences (NDEs): their phenomena, their triggers, their after-effects, and theories meant to explain the origins/causes of NDEs and under what conditions and to what kinds of persons NDEs occur. As the years passed, the favored theory changed many times. The current popular theory is dubbed “non-local consciousness” (NLC). Several well-known researchers in near-death studies have adopted this view, including a group of distinguished NDE experts. In my view, this development is most unfortunate. It is the result of seriously flawed thinking, and it appears to be gaining power and momentum. If this trend continues, the fields of NDE studies and of anomalistics in general, are in danger of veering sharply away from the pathway to better understanding. Incredibly important data are at risk of fading from view.

Therefore, spurious theories like NLC need to be debunked as soon as possible in order for the current research course to be corrected. It is impossible for a critique to include all the literature in the relevant areas, but it is quite possible to find books that can be considered as summaries of literature on the topics of interest. Such books are much easier to critique. One example is *The End of Materialism* by Charles Tart (2009). A more recent example, and the subject of this critique, is *An End to Upside Down Thinking* by Mark Gober (2018). This is a representative publication that meets my criteria for a critique. While the book is a bit dated, not much in the consciousness research world has changed since its publication; and, Gober’s book is much more recent than Tart’s. Although the following analysis takes the form of a book review, I actually go much deeper, identifying errors in Gober’s reasoning and data interpretation and explaining why they are errors. It is my goal in this work to begin the process of deconstructing NLC.

In *An End to Upside Down Thinking*, Gober explores the multiple forms of paranormal experience in humans—and also sometimes in animals—and the implications for understanding consciousness. He catalogs a large number of phenomena, each in its own chapter, with copious quotations from a group of experts on these phenomena.



As Gober says in his dedication, "(a)ll I did was collect and organize the pieces." After reading the book, I realize that this is exactly right. Gober has quoted—from roughly two dozen main sources—the results of various research studies demonstrating the validity of each of these paranormal concepts and phenomena and does not venture very far beyond what has been stated by others. Thus, this book truly is a cataloging of paranormal experiences. Such a catalog can be very useful and reflects a large amount of research. For this, I commend Gober. But given the above description, one familiar with this field should not expect to find very much new thinking at all in this book; such non-expectations would be fully supported by reading the book.

In the preface, Gober actually makes most of his main points. He begins by describing the current status-quo paradigm in science, psychology, and philosophy—that being *materialism*. However, he makes a very basic error even on the first page of the preface: of the status-quo paradigm, he says that "matter is the basis of all reality. Everything is comprised of matter, and everything can be reduced to matter." This is not right. Relativity teaches us that matter is a form of condensed energy. Thus, the status quo paradigm actually claims that everything is made of *energy* fundamentally. Unfortunately, this book is rife with such mistakes. For readers schooled in these areas, these mistakes undercut Gober's basic argument and credibility. For those new to these phenomena, this book can be quite misleading at times.

The preface goes on to state that materialism cannot be proven, and questions the logic of holding matter as fundamental. Gober further criticizes materialism on the basis of the claim that matter *generates* consciousness. This, he claims, is unprovable and is equivalent to a form of religion. He states that one must put faith in materialism in order to believe it. I agree with these claims against materialism, and in fact, I agree with large portions of this book. However, as we shall see, there are many problems that go along with the positive aspects. Finally, in the remainder of the preface, Gober makes an argument regarding a theoretical concept that has been proposed by some researchers in these parapsychological fields: Gober claims that the concept of non-local consciousness (NLC) explains all of the phenomena discussed in this book much better than materialism ever could. To explain NLC, Gober cites philosopher Bernardo Kastrup's analogy between consciousness and water. If we let a stream of water represent consciousness in general, then the individual consciousness is like a "localized whirlpool" within the stream—a "self-localization of water": "(a)nd when a whirlpool dissipates, the water simply flows into the broader stream (think: consciousness continues when

the physical body dies)" (p. xxv). This concept of NLC is by far the most important one to examine and challenge, for Gober supplies the very data needed to disprove his hypothesis, even while claiming that these data support it.

Perhaps this book has the nature it does because of the nature of the writer. In the first chapter, which is an introduction, Gober includes a section about himself. Here, he says that he is neither a scientist nor a philosopher but rather a businessman. He is a former Wall Street investment banker who earned a degree in psychology at Princeton University, with a focus on behavioral economics. He also reveals that he "dabbled in physics" at Princeton. However, he states (p. 7) that studying physics was a hobby for him. It is true in some cases that an educated person can approach a new field with fresh eyes and see things that experts in that field have not. Unfortunately, this is not one of those cases. It is quite obvious to the person schooled in these phenomena that the majority of the book consists of quotations from other people strung together with a few words from Gober himself in between. Overall, his commentary indicates a less-than-critical attitude towards the material he presents, and an insufficient amount of critical thinking on his part. This is demonstrated by multiple mistakes and assumptions made in each chapter, so much so that I will be unable to address them all in this critique. Thus, I must pick and choose in order to demonstrate my point in a finite number of pages.

In the introduction, Gober spends several more pages in an autobiographical mode, describing how his interests developed over time and his search for answers posed by the anomalous phenomena he describes. Following the autobiography, he then begins to examine the two sides of the consciousness debate, as he sees it. One side is the materialistic view, which claims that consciousness is a product of the brain, and thus of matter; the other side consists of researchers proposing non-local consciousness as the paradigm supported by the data. Unfortunately, Gober sees only two possibilities here. I will argue below that there is at least one more possibility that is far superior to the two that Gober describes in this book.

For the reader who has studied paranormal phenomena, the phenomena that Gober catalogs will be quite familiar—as will be the authors that Gober cites. Many of these authors are extremely familiar to me, because they tend to be involved with four organizations I know well: the Society for Scientific Exploration (SSE), the International Association for Near-Death Studies (IANDS), the biannual Science of Consciousness Conference (TSC; held in Tucson, AZ), and the Institute of Noetic Sciences (IONS). I have heard many of Gober's main sources speak multiple times at these venues; I have spoken at many of

these as well. I, therefore, have a strong familiarity with most of the research Gober describes.

Chapter 2 begins the preparation for the examination of paranormal phenomena individually. This chapter starts by addressing the definition and nature of consciousness—including the so-called hard problem of consciousness, first put forth by David Chalmers. Gober debates the nature of the hard problem, the role of the brain, and what he sees as the best hypothesis to explain consciousness (i.e., NLC). Gober says: “(p)erhaps consciousness exists independently of the brain (and the body) and the brain is merely a filtering mechanism—a localization process—for consciousness” (p. 37). In this regard, he quotes Larry Dossey regarding what is considered to be *filter theory*: the idea that the brain merely filters consciousness from a non-local realm into the individual, similar to a television. Dossey is quoted as saying that “the picture is due to electromagnetic signals originating outside the set itself and that the TV set receives, amplifies, and displays the signals; It does not produce them” (p. 37). Gober goes on to quote Gary Schwartz, Diane Powell, Eben Alexander, and Cyril Burt in an effort to support this idea. Gober’s summary sentence is this: “(t)he brain is an antenna/receiver for the mind, like a sophisticated television or cell phone” (p. 38). This is a good example of what is to come in the book: Gober selects writers who support NLC and quotes them extensively and often. He then summarizes in a sentence or two what he takes from these authors—and it is almost always support for NLC that he sees. The NLC claim, apparently, is that a brain is needed to individuate, localize, personalize, and internalize consciousness—which is otherwise general, non-local, impersonal, and external to the brain and body.

He also says that “the brain is an organ for selecting and transmitting consciousness rather than for generating it” (p. 39). Further, Gober explores in this chapter some anomalies of consciousness such as the effects of psychedelic drugs and, briefly, Near-Death Experiences (NDEs). He proposes that reduced brain activity allows an unconstrained cognition that accounts for part or all of anomalous experiences. He considers psychedelic drugs to be unleashing our consciousness by virtue of reducing the activity of the brain that limits our perceptions and experiences. He then discusses other anomalies of consciousness, such as terminal lucidity, savant syndrome, experiments with animal brains, and memories transferred as a result of organ transplant operations. All of these topics are seen as challenges to materialism, according to Gober. I can find no reason to question that conclusion. I do, however, reject NLC.

The second and final preparatory chapter, Chapter

Three, explores the fields of quantum mechanics and general relativity, with a brief mention of chaos theory at the end. It is with this chapter that my objections begin to accumulate rapidly. Gober claims at the start that quantum mechanics (QM) “is the underpinning of our reality and needs to be considered first” (p. 52). This statement is so debatable that I have no problem calling it wrong. A unified field theory—a “theory of everything” that unites QM with general relativity (GR)—would be the underpinning of reality in a much more real sense, but remains unrealized. In the next paragraph, Gober says that “our perceptions can lead us astray because we live in a reality far more mysterious than our everyday senses show us” (p. 52). This statement can be interpreted in various ways, but Gober takes unwarranted license with this vague principle to cast doubt improperly on other mainstream ideas. I will point out examples as I proceed.

Regarding QM, Gober says in Chapter Three that “since large objects, including our bodies, are made from lots and lots of small particles, it is important to study how small particles behave” (p. 55). It is here that Gober’s status as a physics hobbyist is glaringly clear. The statement quoted just above is false, as is its cousin, the first quote in the previous paragraph. Many people have huge misconceptions about QM, and this one permits—in the minds of some—the use of QM for anything they cannot otherwise explain. In truth, QM is valid on the molecular, atomic, and sub-atomic size scales. For macroscopic systems, QM is inadequate. For example, QM cannot even begin to describe collisions between macroscopic objects—think billiard balls. QM descriptions of collisions between billiard balls are inconceivable and impossible. Newtonian (classical) mechanics, however, does the job exceedingly well. Thus, QM works only in a restricted size realm; beyond this realm one must use classical mechanics—which has not been and cannot be replaced by QM, even though a ball is composed of a very large number of very small particles.

What is not understood by those without special training (and some with it) is that on the macroscopic level, most quantum effects are “averaged out” due to the unimaginably large number of particles involved. Regarding energy and thermodynamics, the field of statistical mechanics demonstrates that this averaging of quantum states reveals macroscopic, measurable thermodynamic entities. So, just because a system is composed of very small particles does not mean that QM must be considered first, or that QM is applicable to the problem at hand *at all*. And further, on very large size scales, classical mechanics breaks down, and GR comes into play. Then Gober’s statement that QM “is the theory basic to all physics, and thus to all science” (p. 55) is demonstra-

bly false. But this assumption undergirds the remainder of the book's speculation as to NLC and its role in paranormal phenomena and consciousness. In other words, the error is propagated such that the book's claims and conclusions are rendered highly questionable, at best. This illustrates the potential damage this book could do.

To make this comment specific, one need look no further than the next section of Chapter Three, wherein Gober takes the QM path to ever-higher levels of absurdity. Taking the QM view allows some researchers—and Gober uncritically accepts this—to make a connection between consciousness and a very strange phenomenon called *quantum entanglement* (QE; pp. 56-58). This is the foundation upon which NLC rests, so it is important to address this head-on. Gober says that QE is “(o)ne of the primary tenets” (p. 56) of QM, but this is not so. It is both an experimental result and a prediction that comes out of the mathematics of QM, but it is *not* one of the fundamental postulates that form the foundation of QM. Of greater importance is the fact that QE is observable only under very carefully controlled conditions and usually involves interactions between two very tiny particles—small enough to be on the QM size scale. No one has ever explained how such an effect could possibly apply to anything as large and complex as a brain (or even a cell), and especially to consciousness. Instead, NLC theory has arisen from QE without any kind of demonstration, but rather through a perceived conceptual similarity. This is an inadequate explanation, shedding no light on how NLC arises from QM or QE. NLC is a failure even at this point in the analysis, but there are more theoretical and empirical objections to come.

Gober then worsens the situation by invoking the so-called observer effect in QM. The claim here is that in the quantum world, nothing exists until it is observed by a conscious entity. The wavefunction, the solution to the wave equation of QM, is a probability distribution of the location (x, y, z) at time t of a particle in a system. The claim is that the particle is actually nowhere until observed; this observation “collapses the wavefunction” such that the particle now exists, and in a specific location in space and time, thus eliminating the probabilistic description given by the wavefunction. This claim originates from the founders of QM, to whom Gober repeatedly refers, and thus has been coronated by *authorities* to its credit. Gober is *arguing from authority*, as though the reader must believe the writer due to the authoritative nature of his sources. This is known in the field of logic as an *informal fallacy*—that is, such an argument is not logical and is rejected on that ground alone. There will be further grounds ahead. I note here that Gober always stresses the qualifications of those he cites, and after the

first citation always refers to those cited as “Dr.” and thus is constantly beating the drum of authority.

But at this point, it is important to critically examine the observer idea. The observer effect is a terrible misnomer. It comes from this: a model system, such as a single proton and a single electron (a hydrogen atom), exists in a quantum state determined by the energy of the electron. In order to understand the system, an observer must perform a *measurement*—and this typically involves introducing a *photon* of appropriate energy into the system. Then, necessarily, the system changes. Thus, in the act of *measurement*, the observer changes the system. This is part of the basis for Heisenberg's Uncertainty Principle. But, “observer effect” mischaracterizes this situation, implying to the inexperienced reader that merely looking at something will change it. Gober takes this view, but it is false. Visual perception is a passive process when viewed from outside the mind. Observing involves passively taking in photons through the eyes and processing that information. Nothing outside the mind is affected by this, so it is unlike echolocation—used by bats and dolphins—which is an active form of perception.

On the other hand, an observer making a measurement *must* affect the system as described above. Here, however, is the most important point: the introduction of a photon into the system need not have its origin with *any conscious observer*. Matter-matter and energy-matter interactions on the atomic size scale are the province of chemistry, and chemistry happens. It happens whether the system is observed or not. A photon can come from an instrument, or from somewhere else, or not be needed at all for a chemical reaction—a QM process. Chemistry happens in unobserved and unobservable places, such as beneath the surface of the earth, or on a distant, uninhabited planet. Further, if one takes the developmental view of the universe, then it is clear that there were no conscious entities in the universe for at least several hundred million years following the beginning of the universe. Yet, chemistry was happening all the while; indeed, it was necessary so that conscious lifeforms could develop. So, what of the observer effect in these cases I have highlighted? The hypothesis cannot withstand the data and logic. There is no *observer* effect, but only a *measurement* effect (when applicable). But Gober further complicates the issue by referring to the famous double-slit experiment and claiming that “the particle behaves like a particle or a wave depending on whether it is observed” (p. 59). No, the same interference pattern is obtained with or without human observation.

Gober unfortunately fails to entertain these counterexamples and challenges to his logic. He cites a few physicists who do not support a link between consciousness

and any kind of physics. Gober then responds with a list of experts with the opposite opinion, in line with Gober's. This list includes Eugene Wigner, Amit Goswami, John von Neumann, Henry Stapp, Roger Penrose, Stuart Hameroff, Max Planck, Lucien Hardy, Dean Radin, and Nicolas Gisin. Thus, the fallacious argument from authority continues and even intensifies. Gober concludes this section with: "(a)n inference one might make from these findings is that consciousness is somehow *creating* particles of matter from waves of probability" (p. 63). If one indeed makes such an unsupported inference, then one does not understand probability, wavefunctions, QM, or matter. And that, in fact, is the matter.

In the remainder of Chapter Three, Gober goes on—on the basis of the development I have traced so far—to question the existence of matter, time, space, and reality. He says that, rather than being "*linear, Newtonian, and fixed*", reality is "*nonlinear, quantum, and relativistic*" (p. 69). As I have explained, the reality of our everyday lives is *neither* quantum nor relativistic and *is* Newtonian—leaving aside electromagnetism for the moment. So, Gober ends his preparatory work here and moves on to Section III, which addresses anomalous abilities in humans and some animals. I give him great credit for including animals in the discussion, as animals are typically and wrongly portrayed as lacking consciousness. But I remind the reader that from this point forward, Gober bases his assessments, interpretations, and conclusions on the broken and wrongly constructed foundation I have described above.

Before I go on to describe Section III, I must first make a comment about wavefunctions in general. Gober, along with many other writers, seems to believe that wavefunctions have some mysterious or even magical properties that distinguish them from other mathematical functions. However, wavefunctions are simply solutions to the QM wave equation and are thus merely mathematical entities. While some treat wavefunctions as physically existing—and one person's manuscript that I reviewed even claimed that wavefunctions were *themselves* conscious—the truth is that wave functions are not only simply mathematical entities, but are not even unique. There is another system in QM called matrix mechanics, invented by Heisenberg, wherein there are no wavefunctions and no wave equation, but rather everything is described in terms of matrices. The wave mechanics and matrix mechanics approaches are equally valid, but the wave mechanics approach is typically used because it is easier to work with. Therefore, there is nothing special about wavefunctions, and they are not unique. So, in conclusion, one should not pretend that wavefunctions physically exist or that they have any special prop-

erties other than their mathematical properties. I hope this puts an end to what I have seen in several submitted manuscripts, which I have called "wavefunction worship." Gober seems to have this tendency.

Section III includes five chapters, each addressing a different parapsychological phenomenon. These five are: remote viewing, telepathy, precognition, animal psychic abilities, and psychokinesis. The uniting factor in these five chapters is an unusual ability in a living, conscious being that resists a materialistic explanation. I will summarize each of the five chapters very briefly while highlighting the important statements made with regard to each one. Remote viewing is addressed in Chapter Four. This is the ability to see objects, situations, and environments that are far from and not visible to the remote viewer. Gober reviews the evidence for this phenomenon and finds the weight of the evidence to be overwhelmingly in favor of the reality of remote viewing. I agree with this. His examination of this phenomenon leads him again to cite the analogy from Kastrup: "if consciousness is like a stream of water and an individual brain is a localized whirlpool, then having access to other parts of the stream (i.e., remote viewing) is possible" (p. 76). This is an alternative way to phrase NLC, but a rather vague phrasing that leaves many questions unanswered.

The next topic is telepathy, which is direct communication between two minds without verbal or visible means of communicating (Chapter Five). Gober states early in the chapter that "if consciousness is not localized to an individual's body, then telepathy certainly is possible" (p. 93). Note that in the previous paragraph, I quoted Gober as saying that consciousness is like a localized whirlpool of water. So, Gober contradicts himself on localization in these two statements. He goes on to discuss statistics and the nature of statistical significance and effect size. This discussion is important because the empirical data show a small but very statistically significant effect size, confirming that telepathy is real, but subtle. This is convincing to me. Gober goes on to discuss telepathy in dreams, telephone telepathy, telepathy between twins, and telepathy in autistic savants. Concluding that telepathy is real, Gober offers this: "in the context of an interconnected reality—a nonlocally entangled universe—in which consciousness is not confined to the brain, the stories seem plausible and worthy of investigation" (p. 104). What I think is worthy of investigation is the meaning of the term *nonlocally entangled universe*, and what the evidence is for this. In what lies ahead, I will try to find an answer to these questions.

Chapter Six addresses precognition: knowledge of events before they occur. This chapter, like most of the book, begins with statements from several of Gober's fa-

vorite sources, which are, in this case, pro-precognition. Each of these sources has already been cited multiple times. Before beginning to present evidence, Gober says: “(i)f consciousness is indeed fundamental, perhaps it exists beyond space and time. That would allow for precognition” (p. 110). The meaning of this statement is not clear to me, but it goes unexplained. Gober then traces the history of this research area. He then discusses the research of Dean Radin, Daryl Bem, Julia Mossbridge, Larry Dossey, Diane Powell, and a few others. Overall, the research is convincing. But Gober is more than convinced—he proceeds to interpret an unrelated event as support. He cites the fact (from Powell’s study) that the airplanes hijacked on 9/11 were unusually low in their occupancy rates. He asks: “(d)id certain people have a sense something bad would happen?” (p. 120).

The historical truth regarding this incident is that the hijackers themselves chose the flights they would take and selected the flights according to two criteria: (1) long-distance flights to maximize the amount of fuel onboard; and (2) low occupancy so that there would be fewer people to resist the hijacking. Far from certain people having a precognitive warning, this event and the conditions pertaining to it had been arranged to provide the optimal scenario. This shows a very significant deficit in Gober’s thinking, and apparently Powell’s as well. If Powell is responsible for the speculation ending the paragraph above, then she is guilty of shoddy thinking and research. And, if Gober accepted this blindly from Powell, or if this is Gober’s own idea, then he is similarly guilty. This kind of mistake leads me to question the authenticity and veracity of many things Gober presents in this book. He closes with another research study that he finds suggestive of group precognition but has no explanation for it beyond the above quote (p. 110).

The psychic abilities of animals are the topic of Chapter Seven. Gober starts with the question: “(i)f humans can do it, what about animals?” (p. 123). He suggests that anything with a brain should have psychic abilities because NLC is available to any brain. This brief chapter focuses mainly on the work of Rupert Sheldrake, a biologist, who has produced some incredible results involving dogs—who appear to know when their owners *decide* to return home. Sheldrake’s observations have led him to propose *morphic field theory*, which Gober does not mention. I have seen Sheldrake present multiple times and have been strongly persuaded by his data; I do not agree with his theory, but that is not the point. The data are convincing that a psychic effect is occurring. Gober goes on to discuss “entangled horses”, thus putting his theory directly in the name of the effect he describes. He ends this brief section with the question: “(i)f human twins are

telepathic, why wouldn’t horses be telepathic?” (p. 128). Gober goes on to describe other situations offered by Sheldrake, including lost pets finding their owners, animals reacting before natural disasters occur, a cat named Oscar, who knew when nursing home residents were about to die, and “psychokinetic chickens and rabbits.”

Chapter Eight is again very brief and concerns psychokinesis, the ability to move or influence objects with the mind alone. Gober focuses primarily on the work of the Princeton Engineering Anomalies Research Laboratory (PEAR), mainly involving Robert Jahn, Brenda Dunn, Roger Nelson, and Claude Swanson. The main result of interest here is strong evidence that humans can influence random number generators (RNGs) using only their minds. I have seen this evidence previously and find it very strong, as does Gober. He then addresses group consciousness and invokes the work of Roger Nelson and the Global Consciousness Project, again involving RNGs. As before, Gober and I agree that the evidence is quite strong. Then Gober considers spoon-bending and its most famous adherent, Uri Gellar. Gober supports the reality of this effect by citing the opinions of William Tiller and Russell Targ. I have no personal position on this front, but I have yet to see such abilities demonstrated. Gober closes the chapter with a very short discussion of energy healing. There is a vast literature on this topic, but Gober’s treatment of it is very shallow and insufficient to allow the reader to form a truly informed opinion. This is one of a few places where Gober’s discussion is woefully inadequate.

These five chapters (Four through Eight) involving unusual abilities of living beings are portrayed by Gober as evidence of NLC and as supportive of the independence of consciousness from biology. Such an interpretation of these phenomena may or may not be accurate. To my mind, the picture is muddled by the fact that, as I said, all the beings involved are *living*. This leaves open the possibility—however remote—that there could be materialistic explanations for these phenomena. Thus, I believe that Section III of this book is less pertinent to the questions of the origin and survival of consciousness than is the material yet to come in Section IV, which involves death-related phenomena. While Gober sees Section III as strong evidence of NLC, I hold that these phenomena only demonstrate non-local properties, abilities, effects, and/or aspects of consciousness. *Nothing in Section III suggests that consciousness has a non-local origin or that the individual consciousness returns to general consciousness with the death of the individual.* We need death-related data for that demonstration, and such data are considered next.

Section IV deals with the data that I find most important and have dubbed death-related anomalous experiences (DR-AEs). I believe these experiences are the most

useful in demonstrating the nature of consciousness, the survival of personal consciousness after physical death, and the properties of consciousness when not bound to a body. It is especially noteworthy that Gober entitles this section as “Surviving death? Scientific Evidence.” As I will explain at the end of this section, the survival of personal consciousness is ruled out by filter theory/NLC; thus, this entire section constitutes an argument as to why the view that Gober pushes is *wrong*: it violates the data that are claimed to support it.

Chapter Nine is, in my opinion, the most important one in the book. It is also the longest chapter, save the final one in which Gober engages in extended speculation. This chapter involves NDEs—one of the most important DR-AEs, in my view—and thus deserves the length it receives. Even so, Gober ignores some major figures in the field and their work. He begins again with a long section of quotations from some of his favorite sources, attesting to the fact that NDEs are severe challenges to materialism. At the end of this introduction, Gober says: “(t)he most logical explanation of NDEs doesn’t include the brain at all. Instead, the evidence suggests that consciousness exists independently of the brain” (p. 153). Again, this statement is sufficiently vague that it may or may not be true, depending on what Gober means by “exists independently.” He then goes into the history of NDE research and some of the basic facts about NDEs, mostly consisting of quotes from his sources.

Next, Gober discusses the aftereffects of NDEs, which are very important. His discussion is restricted mainly to the experience of a single person; he completely ignores the work of P. M. H. Atwater, a major and early figure in this area. Following is a fairly detailed description of an NDE’s typical elements. He includes out-of-body experiences (OBEs) as an aspect of NDEs, but in fact, there are important differences between the two, and OBEs should have their own chapter. Gober has oversimplified things here, and left out important and relevant information. He also includes encounters with deceased loved ones in NDEs; this has important implications for his theory, which I will discuss below.

The next portion addresses proposed materialist theories of NDEs and identifies problems with each one. I agree with his general conclusion that none of these theories explain NDEs at all. Gober considers expectations, physiological explanations, anoxia/hypoxia, a total or partial lack of oxygen in the brain, increased carbon dioxide levels in the brain, endorphins, ketamine, DMT, REM intrusion, and delusions. In the process of addressing these theories, Gober leaves out the fact that ketamine does not occur naturally in the human body, and the vast majority of NDE cases involve no ketamine at all. He also

says, “DMT is naturally produced by the body, and it can also be taken as a psychedelic drug” (p. 165). The first part of this statement is false. DMT has been found in the brains of non-human animals, but never in the human brain. And, as with ketamine, very few cases of NDEs can be attributed to the person taking DMT. This again represents shoddy research.

Gober then gets to the heart of the matter, yet here he falls short again. He discusses veridical experiences of NDErs—that is, observations made by near-death experiencers that can be independently verified and could not have been made from the experiencer’s bodily location. Veridical perception (VP) is perhaps the most important aspect of any phenomenon discussed in this book because VPs are strong evidence of consciousness existing outside the body, even when the body is dead and must be revived. I find the VP data totally convincing. Gober gives it an extensive treatment, mostly consisting of long quotes from NDErs. However, he completely neglects the pioneering work of Michael Sabom in this area. This again reflects poor research skills, for Sabom’s book was what brought VPs to the forefront of near-death studies. Similarly, in the preceding section, Gober briefly discusses childhood NDEs—which again is a very important area given a very light treatment by Gober. Again, he fails to mention the first and most important researcher in this area, Melvin Morse.

Finally, Gober addresses four prospective studies by NDE researchers involving cardiac arrest. This kind of study is potentially more powerful than retrospective studies, and definitely deserves a mention in this book. These studies mainly replicate the results of prior, retrospective ones, but also allow a better estimation of the times at which patients’ NDEs occurred—and the findings are that the NDEs occurred *during* cardiac arrest. This is critical to answering skeptics who claim that the patients were not actually in danger when their NDEs occurred. Gober appreciates the inference. He then assesses the impact NDE studies have for consciousness—that it continues after physical death, at least for as long as the duration of the NDE. Information as to a person’s fate upon irreversible death must come from other sources, discussed below. Gober then provides additional supporting evidence for survival of consciousness, including: visual perceptions during NDEs by NDErs who are *blind*; shared-death experiences, wherein a *healthy* bystander experiences the NDE of another who is dying; and fear-death experiences, occurring to some who believe they are about to die, but are *physically unharmed*. At the end of the chapter, Gober again invokes Kastrup’s whirlpool analogy to explain NDEs: “(i)f the whirlpool were to dissipate and delocalize, other parts of the stream would suddenly be-

come accessible. Perhaps a temporary delocalization process is what happens in the experiences described in this chapter” (p. 182). This statement is highly problematic, to the point of being internally inconsistent: e.g., other parts of the stream become available to *what?* Gober does not understand that he has just presented one of the strongest arguments *against* NLC. I will discuss this below.

If NDEs represent one side of a coin, wherein a living person makes a temporary visit to another realm, then Chapter Ten represents the other side of that coin: disincarnated, conscious beings making a temporary visit to the earthly realm. This side of the coin is represented in this chapter by two phenomena: after-death communications (ADCs) and mediumship. In the opening barrage of quotations, Gober quotes philosopher Stephen Braude as saying that this category of evidence supports “some form of *personal* postmortem survival” (p. 185; emphasis added); yet, this is exactly what Gober has been arguing against in this book. I am on Braude’s side on this question, as I will explain. ADCs are in my opinion just as important as NDEs to the questions at hand. There is a considerable literature on this topic, published mostly in the last 30 years. But Gober gives this crucial topic a very light treatment. Mediumship is an important addition here, for it represents a kind of ADC, but indirect due to the presence of the medium as the basis for communication. Gober begins this chapter with a discussion of mediumship.

In the lead-up to his discussion of mediumship, Gober says: “(i)f consciousness is fundamental, then one’s consciousness would remain even if the body dies” (p. 187). This statement is wrong even within NLC/filter theory. I will explain this below. Before launching into a series of case studies, Gober again quotes Braude: “the evidence provides a reasonable basis for believing in *personal* postmortem survival” (p. 187; emphasis added). Here again, is the conclusion Gober seeks to avoid, yet he presents it to the reader as supportive of his theory. He then presents three case studies of mediums, providing evidence that a disincarnate loved one can indeed return to our realm and speak through a medium to a loved one. The person receiving the reading recognizes the identity of the disincarnate spirit, usually by the spirit providing information that only the deceased person and the receiver could know. Braude, Gober, and I all recognize that this would be impossible unless an individual’s consciousness maintained its integrity and cohesion long after physical death. Again, this violates the tenets of NLC.

Gober then turns his attention to ongoing mediumship research. Here, he focuses briefly on the work of Julie Beischel; he also includes a short section on how to confirm that the medium is actually in contact with a dead

person. The chapter then moves on to ADCs, but this section is incredibly short (less than three pages) and does no justice to this hugely important topic. This is perhaps the most glaring mistake committed in this book. ADC reports are rich in information and detail that completely defeat any materialist explanation and go a long way in cementing the survival of personal consciousness. Of course, this could be the very reason for Gober’s token treatment of ADCs. They are hostile to his theory. He finishes the chapter with a half-page discussion of deathbed visions, another important topic that is glossed over here. Gober closes the chapter with: “if consciousness is the fundamental medium of reality, survival of bodily death not only makes sense, but is expected” (p. 199). Note how Gober’s tone has changed here. He does not use the whirlpool analogy, and in fact seems to endorse personal survival, but makes his statement typically vague. Together, NDEs, ADCs, and mediumship have exposed gigantic holes in NLC/filter theory, and the final blow comes in the next chapter.

Chapter Eleven is the final one containing empirical evidence. This evidence is for reincarnation, focusing on the work of Ian Stevenson and Jim Tucker—prominent researchers in the field of reincarnation. Most of the evidence consists of children who remember past lives, and of birthmarks or physical defects present at birth that can be connected with a previous life. This reincarnation research has long impressed me as strong evidence of personal survival of death—indeed, reincarnation could work in no other conceivable way—and Gober appears to accept this conclusion. His closing summary statement is: “if consciousness is more fundamental than matter and does not arise from brain activity, then the evidence discussed in this chapter is truly plausible” (p. 213). Again here, Gober avoids the whirlpool analogy and issues another typically vague summary. The trend displayed is that when the evidence for personal survival is overwhelming, Gober goes quiet on the whirlpool front—as though he knows that his theory cannot withstand his own data. And this is the case in reality.

Here, I summarize the results given in Section IV and their implications for NLC/filter theory and for consciousness. I have already hinted at or even stated my viewpoint on these issues, so I will now flesh out my perspective. In Section III, Gober gave important discussions on what are usually considered to be psychic abilities or parapsychological phenomena in living beings. I found these data and Gober’s discussion convincing on the issue of whether consciousness can have non-local properties, but no evidence for Gober’s general claims about NLC and filter theory. Section IV foreclosed on the possibility of NLC as the origin of consciousness because the four phenome-

na discussed—NDEs, ADCs, mediumship, and reincarnation—all *require* that a person's consciousness remain as an integrated and individuated whole following the death of the body. Yes, Gober, his sources, and I agree that consciousness continues after death, but the data are clear that it survives in a *personal form* that NLC theory cannot explain and, in fact, seems to deny. I note here some other phenomena that lead to the same conclusion vis-à-vis survival, but are either ignored or misportrayed by Gober: channeling, OBEs, life between lives (the work of Michael Newton), and ghosts or spirits.

The television analogy now needs to be addressed and destroyed. In NLC theory, the brain is absolutely necessary for the individuation, personalization, internalization, and localization of general, free-flowing consciousness. A brain is required for all this, and Gober says so as well. So, let us now consider the logical implication and end for this theory. It implies that if there is no brain, there is no way to detect and filter the "TV signal", and thus, there is no personal consciousness. The "I" to which I refer is completely dependent on this filtered signal resulting from the brain's work. Then, if the brain (TV) dies (is turned off), that is the end of the filtering device and the end of my personal consciousness. No personal experience is possible beyond this point, according to NLC theory. Yet, the four phenomena discussed in Section IV (plus those left out by Gober) all firmly *oppose* the requirements of NLC theory. The very data whence sprang NLC theory contradict that theory. In science, data are king and always trump any conflicting theory. Thus, NLC is a failed theory, one inadequate to the vast amount of data at hand. So, Gober provides the very data needed to disprove his favorite explanation for all things paranormal. And in the process of doing that, Gober believes he is enhancing his position.

To go a step further, consider the NDE data. Each and every NDE account is a personal narrative of the experience. The NDEr consistently uses the first-person narrative form, employing the words "I", "me", "my/mine", and "myself" while describing the experience. This strongly suggests that the self continues to exist in a disembodied form. And when one examines NDE accounts, one finds that these accounts are predominantly local in their character. That is, the NDEr describes the environment around the body and the body itself; describes the process of leaving, and sometimes re-entering, the body; describes moving through walls, ceilings, and other local, solid objects; and describes exploring locations on the other side of those walls and ceilings. While many accounts do indeed display features that can be described as non-local, the point is that the "I" persists. NLC theory would forbid all this, and especially accounts of leaving or re-entering

the body—according to NLC, such things are impossible for personal consciousness to do. But, the data embraced by NLC theorists demonstrate the opposite.

The book closes with Section V, containing two chapters. Chapter Twelve addresses the question of how science could have gotten everything so wrong (materialism, or "upside down thinking", in Gober's parlance) given the contradictory data presented in the book. He structures this chapter and the next as a conversation, wherein he asks questions that he imagines the reader to be asking, and provides his answers. So this chapter consists of speculation based on Gober's analysis in the previous chapters. These comments also apply to the final chapter. Chapter Twelve begins with a summary; early in the chapter, Gober says: "(t)he brain is simply a self-localization of consciousness" (p. 217). Well, Gober has already proven that this is false. He later says: "the universe is interconnected ('entanglement'); the act of observing impacts the physical world; matter isn't solid, and we aren't sure what it is..." (p. 218). I have addressed the invalidity of applying entanglement to the brain, much less the universe, and the absurdity of the observer effect. I have not commented on Gober's view of matter, but that is immaterial here.

Gober does make a very important, in fact crucial, point in this chapter (p. 221). Here, I state the point in my own words: the evidence presented represents a convergence of empirical findings from a large variety of independent sources, all of which combine to form a powerful argument against materialism. Any one piece of evidence may be attacked by skeptics, but when taken as a whole, the case for *personal* (my term) survival is overwhelmingly solid and formidable. Indeed, this is the way science should work, and has worked in the past. The questions addressed in this book are not immune from this kind of scientific investigation. The results of the investigation condemn materialism to retirement in the near future. Late in the chapter, Gober makes an important admission. He asks himself how the filtering process works. His response is: "I don't know" (p. 232). This is because NLC theorists themselves do not know, and do not even admit that there is a severe problem here. And since Gober is not an independent thinker, he has no clue as to how NLC could actually work. So, he again falls back onto the authority angle, citing the work of Hameroff and Roger Penrose and their theory involving microtubules as a way to dissipate the heat generated by this problem. But, this theory is widely rejected; I have attended a workshop by Hameroff wherein he admitted that his theory has no bearing at all on the hard problem of consciousness. I find his theory to be absolutely implausible.

The final chapter entertains Gober's musings about what his book means for everyday life. As the reader will

by now understand, I find little value in Gober's musings, polluted as they are by incorrect physics and his incomplete understanding of the data. This is the longest chapter by far, and so I will make short work of it. Gober quotes Rupert Spira as saying: "we cannot legitimately claim the existence of anything outside of consciousness. To do so would require a leap of faith" (p. 257) and supports this claim. But this is borrowing from the observer effect and is vulnerable to the same criticisms I issued in that case. Gober here is working towards an incredible conclusion that has been lurking just beneath the surface from the very inception of this book. That conclusion follows closely on the heels of the previous quote: "(m)atter is an experience within consciousness. Using philosophical lingo, the metaphysical picture of reality I'm advocating is known as 'monistic idealism'" (p. 258).

So here we finally have it: Gober's confession that he is a monistic idealist. The proper term is "idealistic monist," as opposed to "materialistic monist." This is the philosophy of Lord Berkeley, who claimed that nothing we can see is real, and all the things we cannot see are real. The physical world, our bodies, our actions and their effects in the world, causality, matter—none of these things are real. Reality is completely *mental*, so souls, heaven, hell, spirits, God, Satan, and the like *are* real. Berkeley apparently never attained object permanence. Berkeley dealt with the problem of the apparent continuation of existence without observation by claiming that God is always watching. Berkeley's position has been rejected by nearly all of the philosophical community, as well as by common sense.

In contemporary terms, this position is essentially the same as the position called *anti-realism*. But in science, the opposing position is absolutely necessary: *realism*, the idea that reality is very close to how we perceive it (either directly or with instruments), so close in fact as to allow science to proceed on solid metaphysical grounds. Thus, the results of science can be trusted to have a sufficient amount of grounding. The obvious correlate of this is that if the anti-realist position is true, then science is a foolhardy enterprise that cannot be accomplished and has no meaning, for science, in this case, is studying things that are not real as though they were. Thus, Gober is engaging in a tremendous contradiction: his philosophical position is in complete disagreement and disharmony with the main message of the book—that science tells us surprising, counterintuitive things about the world that should cause us to re-think our common notions about reality. *What reality?*

In the end, NLC shows little difference from materialism in its broad structure and general outline. In both cases, the brain is responsible for our personal consciousness

and sense of self. Both belief systems hold that without a brain, personal consciousness does not exist. NLC holds that impersonal consciousness continues unabated, but this is of little comfort to the individual, who is destroyed by physical death—as is the case with materialism. And, since it is completely unknown as to how the brain functions as an antenna/receiver, there is another similarity: it is also completely unknown how matter could generate consciousness. As Gober says, it requires a leap of faith to accept materialism. And the same is true with NLC. It is materialism in sheep's clothing. Gober is on record for holding that materialism is a form of religion. On the very same grounds, one could say that NLC is a form of religion as well.

After all this, one might well wonder as to what other positions are available that might satisfy my demands that the data be honored, while preserving the result that personal consciousness survives physical death. One might also wonder what my personal position is. The answers to both questions are the same: *interactionist substance dualism* (ISD). This position originated with Plato but is generally credited to René Descartes for its modern formulation. The view is that the body is a substance, i.e., a thing, and that there is a second substance—together the two substances compose the living human being. The second substance, which Descartes called a "thinking substance," is not material and is able to occupy the same space as the body and interact with matter—the body and brain—such that the living person is the result of interactions between the material body and the immaterial substance known variously as the soul, spirit, or—in my terminology—*essence*. In this picture, the essence is the seat of personality, cognition, emotion, memory, and consciousness. It can exist without a body being involved, and in fact pre-exists the body as well as continuing after death. The essence resides *within us*, and the brain and body act as an *interface*, not a receiver, for the source of consciousness—the essence.

The standard objection to ISD, from Descartes' time onward, is that there is no known mechanism of interaction, and that, in fact, such a mechanism is impossible because something material cannot interact with something non-material. I note that materialism and NLC have the analogous problem in each case—a missing mechanism, which I have discussed above. ISD is now different from those two other positions in that I formulated and published an ISD mechanism in the 1990s that is data-driven and scientific but non-reductionist and not materialistic. So, in the absence of a new researcher with a theory that out-performs mine, or who provides accurate and fatal objections to my Theory of Essence, ISD stands as the clear theory of choice. This is a possibility that is

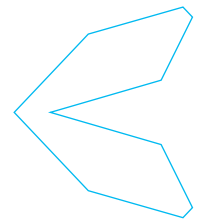
not considered for even one second in Gober's book, yet it sufficiently answers the major questions that the book entertains.

To summarize, I find it difficult to recommend this book for any audience. As I have stated multiple times, the informed reader will see many of the same flaws that I found in Gober's presentation and logic and tend to discredit him on those grounds. The uninitiated reader will be tempted to accept everything Gober says at face value, and so will receive a distorted and self-contradictory view of paranormal phenomena, science, and the relationship between the two. Thus, I absolutely cannot recommend the book to the uneducated lay reader. The educated reader may find some usefulness in the cataloging aspect of the book and may benefit from the bibliographies at the end of each chapter. This reader will know, however, that this is a book by a beginner, for beginners; this reader will then be appropriately skeptical of Gober's understanding of these phenomena and his conclusions regarding them.

To conclude, I return to my starting point. In my introduction, I stated that I intended to begin deconstruction of the NLC explanation for anomalous experiences, such as the NDE. In the course of examining Gober's book, it became evident that the best argument *against* NLC is, in fact, Gober's book. In trying to justify and prove this theory, Gober unwittingly provided the opposite. From the broader view of parapsychology and anomalistics, there

are lessons to learn here. First, materialism must be taken down from its default position status and constrained to areas where materialism is actually relevant. Second, given that we can rule out both materialism and NLC for paranormal studies, researchers need to focus on creating theories that are foundationally different from these two failed attempts. A new paradigm in science is needed.

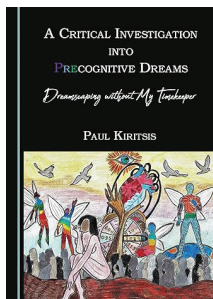
I contend that ISD is scientifically valid and has great explanatory power, and that this should be exploited by researchers. Third, subjective experience should have a place and a role in the new paradigm. Tart's approach is instructive here. The structure of his book is almost the same as Gober's. But, Tart believes that the data regarding living beings is superior in its explanatory power, because this allows experiments to be conducted in a laboratory setting. Such reflects a limited form of thinking, staying well within the box while the data cry to be released. I recommend that researchers drop their materialistic way of thinking and pay attention to what their data are actually saying. Finally, if all else fails, researchers who insist on invoking QM or any of its affiliates (QE, the observer effect, the double-slit experiment, etc.) should obtain an education about the field of QM and actually understand it instead of invoking it in a hand-waving manner. QM is a mystery, so researchers should be very cautious in trying to explain one mystery (e.g., consciousness) with another (QM).



BOOK REVIEW

Review of A Critical Investigation Into Precognitive Dreams

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Kiritsis P. (2021). *A critical review of precognitive dreams*. Cambridge Scholars Publishing.

ISBN 13: 978-1527546332

<https://doi.org/10.31275/20243191>

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AUTHOR DISCLOSURES

I was drawn to review this book because of my longstanding interest in related subject matters. While my academic discipline is Critical Futures Studies (Inayatullah, 2018), a significant portion of my work has centered upon what I call “integrated intelligence” (Anthony 2008, 2023), which has overlaps with “the nonlocal mind,” (Radin, 2006), and sometimes termed “the extended mind” (Sheldrake, 2013). An integrated intelligence suggests that consciousness transcends the mind-body system, and ultimately, both immediate time and linear space. It contains seven core modalities, and one of those is precognition. I have recorded dreams for over three decades, and have experienced many that I consider to be precognitive. I believe that precognition is an extant human cognitive function, and that non-ordinary states of consciousness - including trance and dream states - are one of the ideal ways to experience it.

For example, early in the morning of March 15, 2019, I dreamt I was walking in the mountains above a distant coastal city. Suddenly, a group of highly agitated people dressed in Muslim attire rushed past me. I looked down again to the city and saw smoke rising from it, as if a disaster had just occurred. A voice then said: “Fifty people dead.” I awoke, spooked, and recorded the dream in my diary, then went back to sleep. The next morning, the news came that forty-nine people had been massacred at a mosque in Christchurch, a coastal city in New Zealand (with the New Zealand Alps inland to the west). A day later, one more of the injured died, bringing the total dead to fifty.

I have read a good deal of the literature on parapsychology and have, at times, been active in some parapsychology (or associated) discussion forums online. I am also a member of the *Consciousness Society* (founded by Allan Combs and Stan Krippner), and Paul Kiritsis is also a member of that online community. I have received no funding for any of my work in these areas up to this day.

Therefore, I’m clearly a “proponent” of certain kinds of psi phenomena (most notably, precognition, clairvoyance, telepathy, and remote viewing).

CONTENT OVERVIEW

Paul Kiritsis’ *A Critical Investigation into Precognitive Dreams* makes a case for the veracity of precognitive dreams, and shares research and case studies that the author has conducted on the subject. Kiritsis makes no pretense at being an impartial investigator into the topic. For Kiritsis, precognition is not simply a cognitive capacity of psychics and clairvoyants but is a common human experience. Nonetheless, this is not a book for the layman. Though short in length, the book explores history, philosophy, and science in a scholarly fashion.



In 2014, Kiritsis published a monograph called *Dreamscaping Without My Timekeeper: A Critical Investigation into Precognitive Dreams*. A significant portion of this more recent book (Kiritsis, 2020) is to recapitulate details of the author's prior precognitive dreams research and also to offer philosophical extrapolations that extend logically from his observations and findings.

The first two chapters - "The Divorce of Body and Soul and Their Celebrated Reunion" and "A Short Introduction to the Time Riddle," - delve into the intricate relationship between physical and metaphysical aspects of precognition while offering a concise introduction to the puzzling nature of time. Kiritsis questions the unidimensional construct of time and discusses the difficulties in measuring its flow. He follows Immanuel Kant's theory that time and space are constructs of human perception, suggesting they may not exist independently of our minds. The Western atomistic, mechanical worldview promotes a disconnected view of nature. Yet pre-cognitive dreams suggest that there are "underlying mechanisms of action" that cannot easily be accounted for by Newtonian, reductionist science and can be better explained by a "trans-dimensional and metaphysical worldview" that acknowledges the seeming contradictions of personal agency and determinism.

In these early chapters, Kiritsis traces the impact of thinkers like Johannes Kepler (the triune aspect of the Godhead) and the dualism of Rene Descartes (the static and rational nature of the Christian Godhead in the physical world). The author also explores the Scientific Revolution, and most notably, the impact of the work of Copernicus, Kepler, and Galileo, with Newton's mechanistic and quantitative principles eventually becoming the presuppositions of modern science. Eventually, Darwinism and behaviorism concretized the mechanistic worldview, with its rigid division of the secular and scientific from the religious and "supernatural," with science - (aided by existential philosophy) - becoming the final arbiter of truth. Kiritsis argues that the qualitative - aesthetics, ethical sensibility, values, feelings, emotions, mentation, soul, spirit, consciousness, living systems of transformation - effectively became empirically invalid and unreal.

Chapter 3 is entitled "The Precognitive Faculty: An Age-Old Phenomenon." Here, Kiritsis delves into the historical context of precognition and how it challenges Cartesian and Kantian epistemology by implying a linear notion of time. This chapter motivates the exploration of the history of science and assumed notions of time.

"Serial Time and Its Implications" is the title of Chapter 4, where the focus shifts to John William Dunne's "serialism" theory and its connection to precognitive dreams. Kiritsis discusses how higher selves in different time di-

mensions may transmit information, potentially altering future events. Jung's related concepts are also explored.

Chapter 5 is "Knotted Into Your Dream Tapestry," and details Kiritsis' quasi-experimental investigation into precognitive dreams, conducted in 2014. Fifteen participants documented their dreams and waking experiences over several days, forming a foundation for the study's findings.

"Memories of the Future" is longest chapter in the book, and it meticulously examines the extraordinary dreams recounted by Kiritsis' study participants. The dreams are graded for their connection to waking events, revealing that a majority of precognitive dream fragments demonstrated powerful correlations.

Chapter 7 is entitled "Fitting the Facts Like a Glove", and Kiritsis presents a scientific framework tailored to the unique phenomenology of dream precognition. This framework aims to provide a structured approach to understanding and studying precognition.

Chapter 8, "Intrusions and Free Will," contemplates the ramifications of precognition on human intentionality and autonomy. Kiritsis discusses the Benjamin Libet free will experiments and concludes that humans have free will to some extent, but there are aspects of experience and neurophysiology beyond our control and awareness.

Pros, Cons, and the Book's Contributions to the Literature

At just under forty-five thousand words, the book is not long. The arguments are tight and succinct, with little unnecessary verbiage or digression. Most parts of the book are not difficult to read or understand. The case studies, for example, are thought-provoking and easy to comprehend.

Still, certain readers may find this volume heavy going in some places. The vocabulary is regularly challenging, and in chapter seven, where the author delves into the neuroscience of perception and the visual cortex, the reading becomes rather dense. The book is clearly aimed at the highly educated reader, one widely read in a broad range of subject matters across science and philosophy.

From my personal perspective, I have no problem with Kiritsis' "subjective" approach, but those of a more classical scientific bent might find it less satisfying. Kiritsis' attitude is consistent with the book's message: that a purely empirical attitude is not the best way to study precognitive dreams. His more holistic preferences in scientific investigations are outlined early on.

...when I think of true science, I think of an aesthetic Gaia-based empirical philosophy me-

diated by the politic of unbiased observation, a process of critical inquiry that resists an overwhelming urge to divorce phenomena from the greater Kosmos and understand them in mechanistic and reductive terms.

The text is sprinkled with somewhat “loaded” language. For example, in the introduction, he describes one of his subjects as “a young female percipient with a clear psychic opening.” (Kiritsis, 2020, p. xvi). Another, “Ms. K,” is described as having “a very powerful ‘psychic opening’ and her dreams are usually characterized by veridical information communicated telepathically about significant others in her life.”

The author does not flesh out related evidence on precognition and parapsychology, which could be seen as a shortcoming. Kiritsis merely provides a brief descriptive overview, arguing that the most compelling evidence for general precognition arises from animal research, controlled card-guessing studies, and laboratory-based random number generator experiments. Some critics may also point out that book does not reference many of the counter-arguments and criticisms of the subject matter – including mainstream scientific criticisms of psi research in general - except to be critical of them.

Overall, the “values” Kiritsis assigns to each of the subjects’ dreams seem reasonable. The dreams and real-world correlations are often impressive. In one description, for example, “Ms. K” dreamed her late uncle Nikolis came to her, looking rather serious, and stating: “The time has come for your grandfather to come with me.” That next morning, Ms. K received a call from her mother, informing her that her grandfather had just had a stroke. She immediately rushed to the hospital, and she was able to have a heart-warming exchange with him before he slipped into a coma and died. I believe that the valuation of this dream as evidentially “excellent” is warranted.

Still, I found one or two of the “excellent” evaluations to be less convincing. For example, one dream experienced by “Ms. P” describes her as camping out in a tent on a beautiful island. A “tall, stocky man with a deep, raspy voice and a fair complexion” approaches her and says, “You will have to come and join me then.” The appearance, voice, and mannerisms of the man in the dream spooked Ms P, and she had a sense of foreboding. The following day, the news broke of Anders Behring Breivik, a far-right radicalized man, going on a massive killing spree on a Norwegian island. The proximity in time is indeed notable, and Ms P stated that there was a striking resemblance between Breivik and her dream figure. Yet there is a significant differential between being asked to go with someone who appears spooky, and a massacre of 77 peo-

ple. The absence of related details diminishes its evidential value, in my opinion (my precognitive dream, outlined at this review’s beginning and which has obvious similarities to Ms P’s, does have more precise information).

Kiritsis’ dream evaluation/categorization process is borrowed from Dunne’s *Experiment With Time*. The subjectivity of this is arguably unavoidable, given the nature of the subject matter (brain scans can merely provide neurophenomenological correlations). The study strongly suggests the difficulties in analyzing and discussing these kinds of phenomena. Still, Kiritsis is employing language and metaphysics outside of “normal science” (Kuhn, 2012), perhaps rendering the text somewhat uncomfortable to those operating from a more mainstream scientific epistemological perspective.

It would thus be interesting to see how, say, a sceptic would grade these same dreams. Would they be more critical and find them to be less evidential of precognition? Having a greater variety of evaluators would provide a broader range of perspectives and better elucidate the strengths and weaknesses of the dreams as evidence for precognition.

From my personal experience and reading of the literature, I believe that Kiritsis is correct that “extrasensory” information “received” through visual imagery and sound is often distorted, and often symbolic in nature (rather than literal). I believe that Kiritsis is also correct that “telepathic” communications between individuals (and groups – “an entanglement of minds in a collective unconscious”) can occur while dreaming. He suggests that is what happened above, with Ms. P and the Breivik massacre. Because of its telepathic nature, argues Kiritsis, Ms. P’s dream fragment is anecdotal evidence substantiating the reality of “psi” phenomena.

Kiritsis is an advocate of the transmission theory of consciousness, which he makes clear when he likens consciousness to the online world, and the brain to a computer desktop, with the latter being capable of downloading software programs onto its hard drive. The author freely states his liking for the explanatory power of property dualism (and in particular that of British philosopher Colin McGinn), which he finds “both inherently true and aesthetically pleasing.” Juxtaposed with the prevalent eliminative materialism of much modern science and the latter’s inherent alienation from nature and cosmos, Kiritsis much prefers the former.

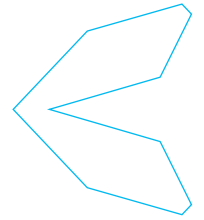
Ultimately, I find myself in agreement with the author that a genuine examination of precognition requires a willingness to suspend judgment and that it is important for understanding precognition to explore the phenomenon using first-person methods.

RECOMMENDATION

As Kiritsis points out, there is a need for a more open and receptive attitude - and methodological approach - to studying precognitive dreams, because a merely empirical and detached approach is inadequate. That attitude represents a paradigmatic and civilizational stalemate that may need to be transcended. Perhaps it will be that Kiritsis' short but scholarly volume will play a small role in the required shift. The intended audience is clearly a well-educated one, and the subsequent sophisticated writing style is arguably beyond the range of the layman. Whether or not its mixture of physical science and alternative philosophy is a strength or a weakness may vary according to reader preferences. It is nonetheless highly recommended for deep thinkers (and deep-seers) wishing to challenge the norms of a mainstream Western science that is stubbornly slow to question some of its own pre-suppositions.

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CORRESPONDENCE

Response to Review of Redemption of the Damned: Volume II

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<https://doi.org/10.31275/20243401>

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We would like to thank Jerome Clark for his review of *Redemption of the Damned* Vol. 2, covering the sea- and space-related phenomena chronicled by Charles Fort in *The Book of the Damned* (1919), but we are puzzled by some of his comments. In particular, we are disappointed that whereas in 2019, in these very pages, he praised Vol. 1 as an admirable project (“staggering [research] . . . necessary . . . scientifically and informationally weighty” etc.), he now finds the “exhaustive” research in Vol. 2 no more than a “slog”, a redundant effort that belongs – if it belongs anywhere – back in 1950.

Clark can’t easily imagine who might want to read this passé stuff in 2024. Nowadays, he thinks, Fort is (or should be) seen as a “literary figure and philosophical jokester” rather than as a “credible chronicler”, and our book “would have made more sense in the middle of the last century” since which era Fort has “long been superseded” as a source of anomalistic material by the “more sophisticated conclusions” of “UFO historians,” the implication being that our job has long ago been done. Others can judge whether Vol. 1 of this project – the first granular dissection of its kind, well received in the centenary year of *The Book of the Damned* – had a part to play in any such late blossoming of sophistication; however we would insist that Clark’s premise is patently false: items from Fort’s books are still being cited – or re-echoed in garbled paraphrase – in publications around the world, and across the internet, in most instances without any attempt at historical verification, perpetuating a situation that has existed for a century. It is a little galling now to be told, in essence, “Oh, we’ve known Fort’s books were irrelevant and unreliable for decades. Nobody is interested.”

Clark’s remark that Vol. 2 deals mainly with phenomena that have disappeared from the modern literature appears to be phrased as an objection, again aimed at questioning the book’s relevance. “My observation,” says Clark, “not the authors.” Not so, we did make comments on this (e.g., pages 149, 210 and 212) and actually find it a most intriguing question: what does it say about the nature of modern anomalies when vanished historical tales of remarkable bolides impacting ships at sea unexpectedly resist interpretation as vaporous yarns? Why did very circumstantial and credible accounts of luminous oceanic wheels virtually disappear during the 20th century, still without satisfactory explanation? This is one mystery that in our opinion remains to be solved. There are others.

Even as he exaggerates the degree to which the modern mystery industry has outgrown and discarded Charles Fort, at the same time Clark undersells both Fort and our critique of his treasures. “Martin Shough and Wim Van Utrecht have explained all, or nearly all,” he says. But that’s simply not true. In fact, there’s a lot in this volume that we haven’t been able to explain.

Attentive readers of the book will find in Chapter 3 an anomalous object report-



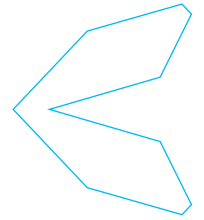
ed from different locations which we concede is “hard to understand” in conventional terms. Chapter 4 ends with us “honestly puzzled”. Our last word on the matter of Chapter 5: “we’re stumped.” In Chapter 6 we argue that Fort’s efforts may have helped keep the fringe astronomical topic of Transient Lunar Phenomena visible during the early 20th century, and we continue in Chapters 7 and 8 to show that he may have collected records suggesting that lunar eclipse brightness and anomalous Martian clouds correlate with solar activity. In Chapter 9 we decline to dismiss evidence that, whilst it is anecdotal, is impressive enough that it might yet be “a first-hand eyewitness account of an extraordinary phenomenon.” After an examination of oceanic phenomena in Chapter 11 we conclude that “a completely convincing explanation” is still elusive, and lament that we can do little more than “perpetuate Fort’s role” in a data-gathering project that future marine scientists may still wish to puzzle over. In the closing Chapters we acknowledge “cases that not only fail to dissolve under the light of inquiry but even seem to harden” and concede that a few cases are “simultaneously so remarkable and so circumstantial that . . . we cannot rule out the possibility of an exotic event,” even as we cannot by any means prove that one occurred.

History being what it is, we were unable to go beyond this judicious balance of uncertainties. Clark’s wry comment that “on infrequent occasions, a concession of failure emerges, softened by the reassurance that ‘we have found no single case where an exotic explanation is inescapable’” suggests that he sees this as ineffectual or even verging on debunkery, with which ailment he explicitly diagnoses at least one of us. Anyway, he disparages our patience with these “relatively ordinary” claims approachable by the traditional means of investigation and analysis, perhaps because of our (modest) success with them. He looks rather to stories of “high strangeness experience” that are more “radically in defiance of prosaic accounting” and serve to remind us “how weird this world can be if one dares to look.” It is indeed a fact, appreciated eventually by all students of the marvelous, that the true

weirdness is never where you look for it, it is always over there, around the corner, on the next page, on the horizon. An anomalistic “god of the gaps.” Our limited purpose in *Redemption* was to survey with modern tools a familiar fortean foreground that has remained poorly mapped for a hundred years. If that territory is now, despite our “concessions of failure”, too well charted for some who prefer to explore elsewhere in pursuit of an ever-receding anomalistic rainbow, that is of course their business.

Clark also criticizes us for “getting sidetracked into an assault on Fort”, a charge which is frankly incomprehensible. We are sure that we have written nothing that even the most sensitive fortean, no matter how determined to be offended, could construe as an assault on Fort. On the contrary, we have followed the method of Vol. 1 in being respectful of his chronicle of “damned data” down to the smallest reported detail, whilst having virtually nothing to say about the man, his ideas, and his motivations – not because these are unworthy of attention but because they are largely irrelevant. Fort’s level of scientific (in)eptitude is of no interest to us in itself, nor need it be to the reader – Clark’s histrionic amazement on the latter’s behalf notwithstanding. If someone feels we have misunderstood what Fort means – or ought to mean – to the 21st century as a stylist or a philosopher or a comedian, we can only say that these issues lie outwith the advertised scope of the project, which was to examine the reports collected by Fort, not Fort’s reactions to them.

Jerome Clark sounds bored by all this. People of good sense, he tells us, never did look to Fort as a source of forteana anyway, at least not for three quarters of a century, and now here are these Johnnies-come-lately belaboring the obvious. And yet, do we perhaps detect behind this pose of jaded insouciance a private disappointment that we didn’t find more probative strangeness? That would fit with his accusing one of us of anomalyphobia. On the contrary, both of us are drawn to anomalies, but we do see them as challenges inviting, in the first instance, explanation, not as fuel for a belief that the unexplained should remain unexplained.



Reply to Shough and van Utrecht

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At least the authors are receptive to one anomalous phenomenon: their ability to read my mind. Note in particular the last paragraph, which informs me they might be advised to stick to more conventional methods of determining others' thoughts and motives.

As for myself, I stand by my response to their book. Others who pick it up will judge for themselves what it says and how well or poorly I represented its contents. From my perspective it looks as if the authors are defending a book they didn't write. I can understand why they would demand praise, of course. I never accused them of not being human, though I wish they hadn't in turn defined my lack of enthusiasm as a character flaw.

And yes, I wish I had been more skeptical when I reviewed the first volume.

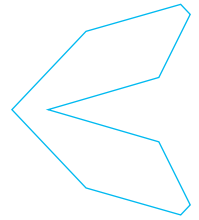
<https://doi.org/10.31275/20243473>

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ANNOUNCEMENTS SUMMER 2024

NOTICE OF CRITICAL JSE UPDATES

The *Journal of Scientific Exploration (JSE)* proudly serves as the peer-reviewed, open-access journal of the Society of Scientific Exploration (established in 1982). It exists to share the latest and highest-quality research and thought leadership across all categories of anomalous phenomena. Our steady improvements have culminated in a large-format journal filled with diverse authors, topics, perspectives, and article types. In fact, *JSE* is often the only safe haven for scientists to publish their maverick ideas and studies. However, as the landscape of academic publishing evolves, it has become evident that sustaining the integrity and quality of scholarly journals necessitates innovative approaches. **Thus, *JSE* is immediately implementing two changes.**

FULLY ONLINE FORMAT

***JSE* has ended print publications with the Spring 2024 issue in favor of a fully online (but printable) format.** This approach offers several advantages, including (a) *greater cost-effectiveness*, (b) *wider accessibility*, (c) *increased visibility and impact*, (d) *accelerated discovery and faster publication times*, (e) *enhanced collaboration and interactivity*, and (f) *robust archiving and preservation practices*. Note that readers will still be able to print articles or full issues on their own. More detailed information about the impact of this change will be sent soon to current print subscribers.

ARTICLE PROCESSING CHARGES (APCS)

The implementation of APCs is a proactive step towards securing the longevity and vitality of academic publishing platforms. Therefore, all papers (except for “Book & Multimedia Reviews” and “Correspondence”) received as of 1 June 2024 and accepted for *JSE* publication for 2025 and beyond will incur a fee of **USD \$250.00 for “corresponding authors” who are non-SSE members** and **USD \$150.00 for “corresponding authors” who are SSE members in good standing** (apply for membership at: <https://www.scientificexploration.org/join>). Note that authors’ personal, non-reimbursed payments toward publication costs are tax deductible in the United States. These modest APCs—while helping to offset operational expenses—also align with the principle of shared responsibility within academia. By contributing to publication costs, authors invest in the dissemination of their research findings and support the accessibility of knowledge to a wider audience.

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There are no strict word limits, but guidelines for different types of submissions are given below. In all cases, authors should be as clear, direct, and concise as possible in their presentations. The Editor-in-Chief reserves the right to mandate revisions to the lengths of accepted papers in the interest of readability, accessibility, and space.

Contributions can be empirical research, critical or integrative reviews of the literature, position papers, policy perspectives, or comments and criticisms. Studies can adopt diverse methods, including qualitative, ethnographic, historical, survey, philosophical, case study, quantitative, experimental, quasi-experimental, data mining, and data analytics approaches.

A. REGULAR ARTICLES (11K WORDS MAX)

Primary research or interesting and important theoretical papers that foster the diversity and debate inherent to the scientific process. This entails novel or innovative ideas that have some 'fragmentary' experimental or empirical support but which can be evaluated with logic and open-mindedness to present academia with provocative hypotheses that would otherwise be rejected by most conventional journals. Additional requirements are as follows:

1. All empirical results that have not been replicated should be called 'preliminary' with the findings treated as such. Peer-review and publication priority will be given to studies that are (a) pre-registered or (b) replications. Note that 'replication' can involve repeating the research procedure in a (nearly) identical separate study to be reported within the same paper (e.g., 'Study 2: Replication'). Or, large datasets can be divided randomly into 'Training' and 'Test (or Validation)' sets, i.e., the research findings presented are those results that replicated in the Test set.
2. To promote stricter transparency and context for readers, all analyses where appropriate should provide effect size statistics in the form of direct percentages of either *association* (correlative analysis) or *mean percentage differences* (ANOVA, *t*-tests, etc.). In the case of correlative analysis, reported results shall report R^2 to provide a covariance percentage estimate. Mean tests shall provide a 'percentage change' indicating the actual percentage change between groups (e.g., $M = 3.44$ Group 1 versus $M = 4.02$, in Group 2, on a five-point scale is calculated by the following: $ABS [M_1 - M_{2/5} (\text{scale range})] = 11.6\%$ shift or change in means). Standard effect statistics also are allowed, so long as the above percentage techniques are likewise reported. These statistics should be reported in results as 'percentage effect' and follow immediately after standard statistical analysis notation. For correlation, ($r = .43, p < .01$, percentage effect = 18%), for means tests ($M_1 = 3.44$ versus $M_2 = 4.02, t = 3.443, p < .01$, percentage effect = 11.6%).

B. SYSTEMATIC, NARRATIVE, AND SCOPING REVIEWS (12 K WORDS MAX)

All meta-analyses and systematic reviews should include a PRISMA flow diagram to clarify for readers how the exclusion/inclusion criteria were applied to create the literature set under consideration: See <http://www.prisma-statement.org/>

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Multimedia reviews can cover films, documentaries, recorded presentations or symposia, video series and reports, websites that are comprehensive resources, software for scholars, and even peer-reviewed articles in other journals that are pertinent to frontier science. Submissions are now being accepted, and authors should note that these multimedia reviews should include four components: (a) Introduction; (b) Summary of the Media Content; (c) Description of the Value of the Media to the *Journal's* Readership; and (d) Critique of the Media. These components need not constitute major sections, but each issue should be clearly addressed in the submission. We strongly encourage prospective authors to discuss their topic for a multimedia review with the subsection Editor P. D. Moncrief (pdmoncrief@yahoo.com) prior to submission.

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Important conceptual or philosophical commentaries, observations, or arguments to spark constructive discussion or debate relative to theory, methodology, or practice.

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Must address substantive issues relative to recently published content in the Journal.

SUBMISSIONS (A) TO (C) AND (E) AS APPROPRIATE, MUST ALSO INCLUDE THE FOLLOWING SECTIONS:

1. **Highlights (i.e., lay summary) (50 words max).** Placed at the beginning of the article before the scientific abstract, this is a short—1 to 3 sentences—bottom-line description of the paper. Avoid technical terms and prepare the comments akin to a published quote to a non-specialist or uninformed journalist or student about the researchers' interpretation of the main results.
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