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**SSE NEWS**

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# EDITORIAL

Although this issue of the *JSE*, as usual, contains a diverse cocktail of interesting papers, two of those papers are sufficiently out of the ordinary to deserve a few comments. In this issue, we fearlessly address—for the second time in the *JSE*'s history—one of the thorniest and most interesting topics in English literature—namely, the debate over Shakespeare authorship. As some current SSE members are undoubtedly aware, many have challenged the orthodox view that the works of Shakespeare were written by the person traditionally identified as the author—that is, William Shaxpere of Stratford-upon-Avon. SSE stalwart (and my editorial predecessor) Peter Sturrock tackled the topic in the *JSE* in 2008 (Sturrock 2008), and then several years later followed that up with a book on the subject (Sturrock 2013). What Sturrock did brilliantly was to demonstrate how one can invoke Bayesian probability theory to challenge the orthodoxy in a compelling way.

For this issue, we reprint that paper and combine it with a penetrating new work on the subject by David Roper. Roper approaches the matter from a different angle than that adopted by Sturrock. He draws on the science of cryptography to argue that the true author of the Shakespeare works was Edward de Vere, the 17th Earl of Oxford. (This is also the conclusion emerging most naturally from Sturrock's book.) Roper argues that Sixteenth-Century techniques of using codes and ciphers were both common and quite well-developed, and that these permitted concealing secret messages within apparently innocent passages of prose or poetry. Moreover, Roper marshals a great deal of historical evidence for the claim that de Vere and others had good reason to conceal de Vere's authorship of the works attributed to Shaxpere. So I hope our readers will enjoy this excursion into what should be largely unfamiliar territory for most of them. I know I learned a great deal from these papers, and I'm pleased that the *JSE* can make a scientific contribution to this venerable debate. As I see it, the papers by Sturrock and Roper together constitute a fascinating and impressive full frontal assault on the orthodox view.

Although most *JSE* readers will not have immersed themselves in the grubby particulars of the Shakespeare authorship debate, perhaps some have seen the 2011 dramatic feature film *Anonymous*, which presented a sporadically factual story portraying de Vere as the author of Shakespeare's works. (The film's reason for de Vere's anonymity is not the one proposed by Roper.) And if those readers are Internet nerds like your loyal Editor,

they may have seen the review by the late and lamented Roger Ebert, who objected to the film's premise, which he argued was "profoundly mistaken" (http://www.rogerebert.com/reviews/anonymous-2011).

Ebert cited what he considered to be two compelling objections to the film's portrayal of de Vere as the author of Shakespeare's works. He wrote, "In a *New York Times* article, the Shakespeare scholar James Shapiro has cited a few technicalities: (a) de Vere writes and stars in 'A Midsummer Night's Dream' when he was 9 years old, and (b) 'he died in 1604, before 10 or so of Shakespeare's plays were written'."

However, as you might have guessed, the matter seems to be rather more complex than this. In fact, I consulted this issue's two experts for their responses. Sturrock noted, "For many plays, we know when they were printed, and sometimes when they were first performed, but that does not tell us for sure when they were written. We know the latest that plays could have been written, but not the earliest" (personal communication September 30, 2017). And Roper wrote,

> De Vere was born in 1550. At the age of 9, he was still living with his parents at Castle Hedingham in Essex. Shaxpere was born in 1564. The film "Anonymous" has a number of inaccuracies, including the one you refer to. "A Midsummer Night's Dream" was written in the mid-1590s; it is thought, for a court wedding; but there is no certainty of which wedding. De Vere's supporters believe it was a wedding present for his eldest daughter, who married the Earl of Derby (himself a poet and playwright). In the Christmas festivities of 1604, six months after de Vere's death, King James I asked for a number of "Shakespeare's" plays to be performed; one of which was the first public performance of "Midsummer Night's Dream" (1 January 1605). Yet, for the next 12 years, while Shaxpere was still alive, the King ignored him, preferring to ask Ben Jonson for new plays and masques.
>
> There is [also] no firm evidence concerning the date when even one of Shakespeare's plays was written. Shaxpere as "Shakespeare" is first heard of in 1592 ("Venus and Adonis"). It is not until 1598 that Francis Meres acknowledges to the public that 12 previously anonymous plays were by Shakespeare. 6 years later, in 1604—the year de Vere died—Shaxpere retired from the stage, with at least 36 plays and 154 sonnets to his credit, and returned to Stratford-upon-Avon. James Shapiro (as others also do) spreads the plays across the time-line of Shaxpere's life, in order to account for this huge output. De Vere's supporters do the same, but they commence after his return from France and Italy in 1576, having studied continental plays. Hence, in 1577, "The Historie of Error" was performed at the Inns of Court; this is thought to be an early version of "A Comedy of Errors" (personal communication October 1, 2017).

So I hope by now that readers are sufficiently intrigued to dig into Sturrock's and Roper's papers. I'll just add that, while immersing myself in the historical minutiae of the issues, I was often reminded of the remark usually attributed (some say wrongly) to Herodotus: "Most things do not happen at the right time and the rest do not happen at all. The conscientious historian will correct these defects."

.....

Since this is the holiday season and an appropriate time for reflecting on the year that's coming to a close, I'd like once again to acknowledge and thank my dedicated and hardworking—in fact, overworked—team of Associate Editors and the many reviewers on whom we all rely in vetting papers for inclusion in the *JSE*. As I've noted before, producing this *Journal* poses a distinctive challenge. Because the *JSE* deals with topics either shunned altogether or dealt with shabbily by more mainstream publications, the community of qualified readers for high-level peer review is quite small. Ideally, I'd prefer to have a larger team of Associate Editors, in order to lighten the editorial load for those who—perhaps inscrutably—continue to volunteer large chunks of time to shepherding submissions through our system. However, adding members to that team inevitably subtracts members from the small pool of qualified referees. So I'm deeply grateful to my largely behind-the-scenes Associate Editors, who realize the need to maintain the high standard of scientific and scholarly excellence that's characterized the *JSE* since its inception, who recognize that there are only so many people on whom the *JSE* can rely, and who accordingly and generously donate their valuable time. I'm equally grateful to our many referees, many of whom we call upon over and over, simply because they have expertise in the relevant areas of research, and because the number of people who have both that expertise and the relevant degree of open-mindedness about new ideas remains too small for us to look elsewhere.

I must also express my deep appreciation for the breathtaking efficiency, technical panache, and thorough understanding of the publishing business of our Managing Editor, Kathleen Erickson. Kathleen does it all, and she does it brilliantly. I'm sure *JSE*'s Associate Editors and referees agree with me on this. We benefit, time and again, from Kathleen's assistance, patience, and good nature. In fact, I've never met anyone who can issue a reminder with such a winning combination of grace and coercion.

**— Stephen E. Braude**

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*RESEARCH ARTICLE*

# Same-Family Cases of the Reincarnation Type in Japan

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* Following the convention in Japanese, the name of the author as well as other Japanese names appearing in the article are written in the order of the family name followed by the given name.

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**Abstract**—This article reports five same-family cases of the reincarnation type occurring in contemporary Japan. The discussion will be within a set of widely adopted operative assumptions set out by Dr. Ian Stevenson and his colleagues: Streams of consciousness survive death of body and become associated with another body at another time, During the intermission period between lives, the discarnate mind retains the ability for psi perceptions and interactions, and may exercise choice in the selection of parents. The theoretical part of the present paper is with the limitation concerning auxiliary assumptions (Sudduth 2016), and the interpretations of the data adopted here (the survival and reincarnation hypotheses) are open to alternative analyses (notably, the Living Agent Psi hypothesis) as pointed out by Braude (1997, 2003, 2013) and Sudduth (2009, 2013, 2016), but it is beyond the scope of the present paper to deal with these issues. Of the five cases, the first three involve a deceased child appearing to be reborn to the same mother. One of the remaining two is a skipped-generation case, in which a deceased mother appears to have been reborn as a child of her daughter. The other is a case in which a deceased child appears to have been reborn as a daughter of his elder brother. This case also involves an "experimental birthmark."

## Introduction

The process of reincarnation may be conceptualized as a stream of consciousness that survives the death of one body and becomes associated with another body at a later time. That this is what is entailed in reincarnation is suggested by memories of the period between lives (the intermission), which are reported in about 20% of cases of the reincarnation type (CORT) (Matlock & Giesler-Petersen 2016, Sharma & Tucker 2004). Intermission

memories portray a continuous experience from death to birth, which may be broken down into three stages: (i) life-between-life, which is further broken down into three stages (from leaving the body and a period closely following death, to a period of time in discarnate existence, to the selection of new parents), (ii) life in the womb, and (iii) birth (Matlock 2017, Matlock & Giesler-Petersen 2016, Ohkado 2015, Ohkado & Ikegawa 2014). During the intermission, the discarnate mind appears to retain the ability to reason and to exercise telepathy, clairvoyance, and psychokinesis (i.e. psi). Veridical perceptions of the material world, sometimes accompanied by interactions with living persons and actions perceived as poltergeist activity, have been reported during the intermission experience (Matlock 2017, Matlock & Giesler-Petersen 2016).

The selection of parents for the next life is a key part of the intermission experience. Stevenson (2001) identified "psychic" and "geographic" factors in the selection of parents. Psychic factors are prominent in cases of reincarnation in the same nuclear or extended family (same-family cases). Geographic factors come into play in many cases in which the previous personality and present family were unacquainted (stranger cases). Although individual choice is common in the selection of parents, there may be spirit assistants in both same-family and stranger cases (Matlock & Giesler-Petersen 2016:19–20).

The version of the survival hypothesis adopted here is the one assuming the strong psychological continuity in the sense of Sudduth (2016). He lists 10 major auxiliary assumptions with some minor additional ones (pp. 220–231). The auxiliary assumptions adopted here are as follows[1]: A surviving stream of consciousness of a person P may (i) retain specific memories of P's antemortem existence, (ii) retain personality traits and skills that characterized P in his/her antemortem existence, (iii) possess knowledge of events taking place in our world after their death, (iv) possess the desire and intention to communicate with the living, and the ability to do so by extrasensory perception and psychokinesis, and (v) produce physical markings associated with important incidents or events in P's antemortem or postmortem existence. As pointed out by Sudduth (2016), these auxiliary assumptions lack independent evidence so that the reader should understand that the theoretical part of this paper is with this limitation.

With these auxiliary assumptions, we may hypothesize that, especially in societies with strong cultural traditions, culturally prescribed ideas about reincarnation would be carried into death and would influence decisions made in the postmortem state, resulting in observed cultural variations in reincarnation patterns, such as the incidence of same-family vs. stranger cases (Haraldsson & Matlock 2016).[2]

We may also hypothesize that the way in which a person dies has an impact on his/her mind in death. Thus, while reincarnating in the family and among friends suggests some degree of control over the reincarnation process, there are fewer family and acquaintance cases when deaths were violent, perhaps because violent deaths are unexpected and leave the mind befuddled, unable to make rational decisions after death (Haraldsson & Matlock 2016:270).[3] Stranger cases have received the most attention because they are evidentially stronger than family and acquaintance cases, but they appear to be rarer than cases with family connections cross-culturally, and, when geographic factors are taken into account, even in stranger cases we often see a psychic component (Matlock & Giesler-Petersen 2016).

This article reports five same-family cases of the reincarnation type occurring in contemporary Japan. Of the five cases, the first three involve a deceased child appearing to be reborn to the same mother. One of the remaining two is a skipped-generation case, in which a deceased mother appears to have been reborn as a child of her daughter. The other is a case in which a deceased child appears to have been reborn as a daughter of his elder brother. This last case also involves an "experimental birthmark" (Matlock 2017, Stevenson 1997: Vol. 1:803–879, Tucker & Keil 2013).

## The Case of Kanon

This is a case[4] in which a deceased daughter appears to have been reborn as her brother in the same family. I came to know the case through Dr. Ikegawa Akira, an obstetrician and gynecologist, who is the co-author of a paper on "children with life-between-life memories" (Ohkado & Ikegawa 2014). The case involves announcing dreams. Although the child in this case did not claim that he was her sister reborn, he made some striking remarks suggesting that he did have memories as his departed sister. He also played in a conspicuous way so as to remind her mother of the way her daughter played when she was alive.

Kanon was born in the Metropolitan area on July 26th, 2009, and has been living there since. I started communicating with his mother, who is a nurse, via e-mail and Facebook in November 2013, and after a number of exchanges I interviewed Kanon and his parents in person in May 2015. After the interview I talked over the telephone and exchanged Facebook messages with his mother a couple of times. I also talked with one of his mother's friends (Mikkun's mother) over the telephone.

### *The Previous Personality*

Kanon has two half-sisters, one named Rika (pseudonym), who was born in January 1995, and Momoka, who was born May 27th, 1997, and died in

January 2004. Kanon appeared to remember the life of Momoka.

Momoka was an active girl who loved to play with her sister using toy rabbits called Sylvanian Families. She often "directed" the play asking her sister to play the role of a certain rabbit figure and to say a certain set of words. For instance, Momoka would say: "Sister, you are this rabbit. Now say 'Let's go to the park.'" When her sister said the words, Momoka, acting as a different rabbit figure, would say: "Oh, that's nice. Let's go to the park together."

Her favorite color was pink, which is often regarded as "the color of little girls," and is the most chosen color in Japan. But in her case, the following fact appeared to make it her particularly favorite color: Her name "Momoka" means the combination of "peach" (= "momo") and "flower" (= "ka"), and the color pink is also called "peach color" in Japanese, so she regarded pink as her color.

She also loved books, and her mother used to read her a couple of books at bedtime.

When Momoka was three years old, tumors were found in her adrenal glands and she was diagnosed with cancer. After two years of intensive treatment in the hospital, she appeared to have overcome the disease. However, an examination before discharge revealed that she was developing leukemia and she underwent bone-marrow transplantation. Although the operation was successful, in the spring of 2003, the leukemia returned. There being nothing more to do in the hospital, her mother decided to take her home.

In the car from the hospital heading home, Momoka, who her mother believed did not know her real condition, started to say: "I have to go back to the Snow World." Hiding her shock, her mother replied: "Going back? It's like Kaguya-hime,[5] but what will happen if I say: 'Don't go?'" Then, she replied: "I will be scolded for being late. But, mom, I will write a letter, saying: 'Are you OK? Aren't you lonely?'" It was an unforgettable moment for her mother. After they came home, Momoka's condition became better for a while, but eventually, on January 24th, 2004, Momoka passed away in her mother's arms. She was 6 years and 8 months old.

### *Incidents Suggesting the Survival of Consciousness*

A couple of days after Momoka's funeral, her mother and sister were in the living room together. Suddenly, the room lights went out. The breaker for the living room lights had blown for unknown reasons, but Momoka's mother and sister interpreted the events as evidence of Momoka's return.[6]

About six weeks after Momoka's death, the kindergarten Momoka attended held a graduation ceremony, and Momoka (Momoka's mother) was

also given a graduation certificate. According to Momoka's mother, some of the graduating children said they could see Momoka. At the ceremony, the names of the graduating children were called one by one. When his/her name was called, the child would make a reply saying: "Yes." When Momoka's name was called, naturally nobody said: "Yes." The ceremony was videotaped by a local broadcasting company and was broadcast in a local TV program. To the surprise of Momoka's mother, a strange noise whose sound tone appeared to correspond to "Yes" (in Japanese) was recorded after Momoka's name was called as if she had made a reply to the call. The present author confirmed this by watching and listening to a video copy of the program recorded by the mother.

Four or five years after Momoka's death, Mikkun (nickname) and his mother had an impressive experience. Mikkun had been with Momoka for a couple of months in the hospital and was discharged a few months after Momoka had passed away. He was still one year old at the time of discharge. Since Mikkun's mother and those around him had not talked about Momoka, apparently he had no chance to get to know about her before her death.

One summer night, Mikkun suddenly told his mother: "Someone has come from the entrance." His mother, who was surprised because she did not see, nor hear anything, said: "Who?" Mikkun replied: "She's saying, 'I'm Momoka. I've come to see you.'" He further said: "There's another [child]." His mother said to him: "Ask for [his/her] name." After muttering something, Mikkun replied: "I asked, but [he/she] wouldn't say," to which his mother replied: "Then, ask Momoka." Then, Mikkun said: "Momoka says [the child is] Yumi." Yumi (pseudonym) was another child who was in the same hospital as Momoka and Mikkun were. Yumi, who was too young to speak, took to Momoka, who often talked to her. Yumi had died about half a year before Momoka, and since his mother had not talked about her either, he had had no way to get to know her. This incident, in which Mikkun talked about Momoka and Yumi, with whom he had spent some time in the same hospital but had had no way to remember, was an unforgettable one to his mother, and when I talked with her over the telephone, she said she still vividly remembered the details of the incident.

### *Announcing Dreams*

Momoka's mother was 35 years old when she got a divorce, and did not expect to remarry nor have another child. However, she received an unexpected proposal and got remarried. One day in November 2008, she dreamed an impressive dream,[7] in which her favorite band, Mr. Children, played a song with a beautiful melody and lyrics. A couple of days after the

dream, on November 20th, she turned on the TV to find that in a variety program titled *Utaban* the band Mr. Children was about to sing a new song. The title of the song was "Hana no Nioi (The Scent of Flowers)," which she thought was suggestive since it appeared to her to imply that Momoka ("Ka" in "Momoka" means "flower" as explained above) was still present. The lyrics of the song were also suggestive with such phrases as:[8]

> Even if this is goodbye forever,
> I can hear you breathing
> I just know that in some other form, with that same smile
> You'll come to see me again.
>
> Even if this really is goodbye
> I hear your warm breathing
> I just know that in some other form, with the same gaze
> You'll come to see me again.

Momoka's mother strongly felt that she would come back. Eleven days after the incident, she found that she was pregnant.

After the incident, her husband also dreamed an impressive dream over and over again, in which two female children were laughing joyfully in the wood. Although he was unable to see them, he thought they were Momoka and Yumi.

### *Kanon's Statements and Behaviors*

The baby turned out to be a boy and was born on July 26th, 2009. He was named Kanon after Pachelbel's *Canon*. The name was chosen because it was his parents' favorite piece of music, but also because they thought that the musical technique of counterpoint used in the piece symbolized reincarnation or spiritual connections.

Although Kanon did not say that he was Momoka reborn and his parents did not make any implication (at least deliberately) that they were thinking about the possibility, he showed a number of characteristics reminding his parents of Momoka and made some impressive statements, which are listed in Table 1.

### *Kanon's Life-Between-Life Memories*

Kanon also talked about some impressive life-between-life memories,[9] which are listed in Table 2.

**TABLE 1**
**Kanon's Characteristics and Statements Appearing To Be Related to Momoka**

| | Age | Characteristics/Statements |
|---|---|---|
| ① | | Facial features,* voice, and behavior. |
| ② | 1 year old (to present) | Loved flowers and often said: "They are beautiful." |
| ③ | 1 year to 5 years old | Pink was/is his most favorite color. Up until 4 years old, the color of the clothes he chose was always pink. At the kindergarten Kanon attended, children make their handprints to commemorate their birthdays. The color for the handprints are either blue or pink, and an unwritten "rule" is that "the blue is for boys and the pink is for girls." However, Kanon insisted on using pink for his 3-year-old and 4-year-old celebrations. But he chose blue for his 5-year-old celebration. |
| ④ | 1 year to 5 years old | Showed interest in girls' toys and had a toy cosmetic set with a lipstick, comb, mirror, and ribbons. He sometimes asked his mother to tie his hair with a pink ribbon. (He also loved boy's toys, however.) |
| ⑤ | 1 year to 5 years old | Asked to buy toy rabbits of the Sylvanian Families, Momoka's favorite toys. Played with his half-sister in the same way as Momoka used to: "Directed" the play asking his half-sister to play the role of a certain rabbit figure and to say a certain set of words; when she said the words, Kanon, acting as a different rabbit figure, would respond in accordance with his "scenario." |
| ⑥ | ? to present | Showed precociousness in reading and writing. He was able to write Japanese letters when he was four years old. He was able to read books for elementary schoolchildren when he was five years old.** |
| ⑦ | 4 years, 4 months old | Said: "The wall color of the house used to be different." Then, he elaborated: "It used to be much darker." Indeed, the wall color of the house used to be dark brown when Momoka lived there. It has faded, and the color is now light brown. |
| ⑧ | 4 years, 6 months old | Came to his mother, saying: "I have written a letter to mom." The letter had only two horizontal lines. His mother asked him: "What does this say?" He said he had written that: "Mom, are you OK? Aren't you lonely?" These words touched her deeply, reminding her of the conversation she had had with Momoka in the car on the way home from the hospital about 11 years before. They had had snow for a few days, and it was indeed as if Momoka's letter had come from the Snow World as she had promised. Next day, his mother asked him to write a letter again, saying: "Kanon, you can write all the letters. Could you write the letter you gave me yesterday again?" Thinking that she should not guide him in any way, she just said 'write the letter you gave me yesterday.' Upon her request, Kanon wrote another letter, this time with actual letters, which is shown in Figure 1. It reads: "Mom, aren't you lonely? Aren't you lonely?" |
| ⑨ | 4 years, 9 months old | Out of the blue he said: "I was once burnt." The surprised parents did not ask for further explanation, thinking that he was talking about the cremation in his past life. |

* Facial resemblance in Kanon and Momoka is "objectively" shown by an emerging technology of computer science. The "TwinsOrNot" site (http://twinsornot.net), which assesses how similar people in two photos are by giving a score of 0 to 100, gave 82 points to a picture of 5-year-old Kanon and a picture of 5-year-old Momoka. The scores of Momoka's picture and five pictures of other 5-year-old male children, randomly chosen from a kindergarten class the present author is involved in as a volunteer, are 44, 62, 67, 71, and 79 points. At present, since the technology is not yet fully-fledged, the scores are just for reference.

** According to Shimamura & Mikami (1994), none of the investigated 4-year-old children (N = 432) were able to write all the Japanese letters. Kanon's abilities have never been expertly assessed and the judgment should be taken with a grain of salt. In the letter given in Figure 1, mirror writing is observed in two letters: "し"and"く". Yet his precosity is undeniable.

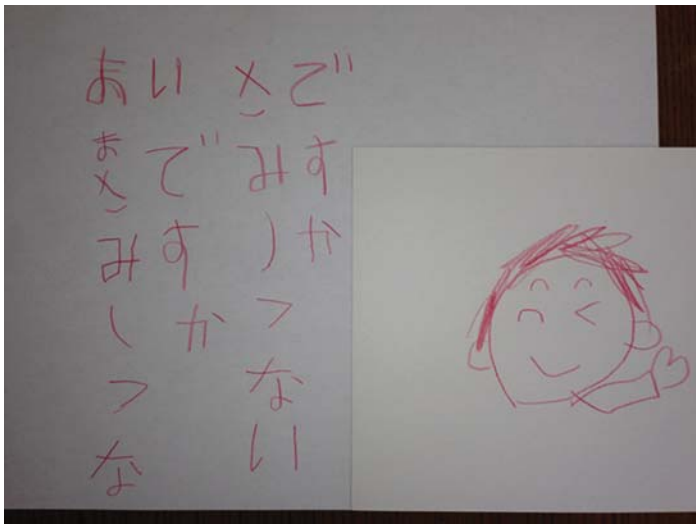

**Figure 1. The letter written by Kanon (4 Years, 6 Months Old).**

**TABLE 2**
**Kanon's Statements about Life-Between-Life Memories**

| | Age | Statements |
|---|---|---|
| ① | Just 2 years old | At bedtime, he said: "I've come to mom's belly from a faraway place. I've come, hurry, hurry! (I've come in a hurry.)" His mother was 41 years old when Kanon was born, and she interpreted his words to mean that he had cared about her age and had come to her as quickly as possible. |
| ② | 6 years, 2 to 3 months old | While lying on the bed and watching the night sky from the window with Kanon, his mother said: "It's beautiful, feels good." To this, he replied: "I'm wondering if there is heaven above clouds. I'm not sure whether it was real or in the dream, but there were so many flowers blooming in heaven and a river was running with glistening water. The flowers and the river were much more beautiful than those you see in this world. The color of the river was like pink and orange, and angels, of the same size as me, are flying. Some were male. God in heaven was sitting on a sort of cushion. There were many masks. You chose your own mask. Some of them were funny like this (he puckered and skewed his mouth to one side). I chose mine and then my face became Kanon's face." |
| ③ | 6 years, 5 months old | While taking a bath with his mother, Kanon said: "Do you remember the story of heaven I told you the other day?" (the item above). When his mother talked about the beautiful flowers and the river, he said frustratedly: "That's not all." Then, he talked about the story of God and the masks. His mother felt that he talked about this story again because he wanted her to believe that it was real, not a fantasy. |
| ④ | 6 years, 7 months old | When his mother asked Kanon what heaven was like, he replied: "There was a river or a sea, and the water was glittering and very beautiful." |

## The Case of Takatoki

This is a case in which there appears to be some "spiritual connection"[10] between a female child Kazune, who was stillborn, and her brother Takatoki, who was born two years after Kazune. Although Takatoki has not made any statements suggesting that he was Kazune reborn, he showed some unusual traits that can be interpreted as somehow related to the death of his sister. Their mother Ms. Inoue Fumiko worked as a social worker. I came to know the case through Momoka's mother, who consulted with Fumiko regularly while Momoka was hospitalized. Fumiko and her husband Dr. Inoue Shuichi, who is a university associate professor of social welfare, published their experience of losing their daughter as a book (Inoue et al. 2010).[11] It was co-authored by Ms. Hasegawa Mitsuko, the chief nurse of the hospital where Kazune and Takatoki were delivered, and edited by Takeuchi Masato, an obstetrician. Fumiko and Shuichi contributed essays from the perspective of a mother and a father, respectively, who lost their baby, and the nurse and the obstetrician contributed essays from the perspective of medical experts. After a couple of exchanges with Fumiko over the telephone and by Facebook messenger, I interviewed her in person on April 10th, 2016. I also conducted a telephone interview with Shuichi and the nurse.

### *The "Birth" of Kazune*

On July 25th, 2005, three days before the estimated date of confinement, the doctor in charge of Fumiko found that Kazune, the baby, was dead from an unknown cause, and she was "born" with induced delivery on July 26th. On July 28th, two days after the delivery, and on the estimated date of confinement, she was cremated. In the morning of the day of the cremation, Fumiko and Shuichi noticed that what appeared to be tears were coming from Kazune's unopened eyes as if she was unwilling to part from her parents.

### *Kazune and* Ave Maria

While Fumiko had been pregnant with Kazune, she had often listened to classical music, believing that it would be good for Kazune's development. Her favorite song during that period had been *Ave Maria* by Schubert. After the stillbirth of Kazune, Fumiko and Shuichi had a couple of unforgettable moments in which they heard the song played unexpectedly. The first instance was on December 24th (or 25th), 2005. While they were dining at a French restaurant in Tokyo, they said to each other: "What is Kazune doing now?" At that instant, they heard the song *Ave Maria* played, which made them feel that she was always with them. The second instance was on

April 2nd, 2006. After talking about their experience as parents who had lost their child, to young doctors at a hospital seminar, they dropped by at a Ralph Lauren shop, where they suddenly heard *Ave Maria* played. The third instance was in May 2005. They went for a trip to Sedona, Arizona, hoping to figure out the meaning of what they had experienced. Just when they came back to Japan, at the airport, they heard the song *Ave Maria*.

Ms. Hasegawa Mitsuko, the chief nurse in charge of Kazune (and also Takatoki) reported a similar experience. She did not remember exactly when, but after the stillbirth of Kazune, she was cleaning the room at home with the TV on, thought about Kazune, and at that instance she heard *Ave Maria* coming from the TV. She had heard the stories of "spiritual connections" between Kazune and the song from Fumiko, and from this personal experience, she also felt that the soul of the baby was still around there.

### *Pregnancy and Birth of Takatoki*

In the second winter since the stillbirth of Kazune, Fumiko had a dream of a dog giving birth to a puppy. The puppy was dead but the dog did not appear to realize that. When she awoke, she thought that she was pregnant, and indeed she was. Fumiko was surprised when the doctor in charge told her the estimated date of confinement: It was July 26th, the same day as Kazune's "birth."

Takatoki was actually born on July 28th, 2007, the estimated day of confinement as well as the day of cremation of Kazune. In the delivery room, merry songs were played by a cable broadcast program dedicated to birthday songs. After Takatoki was delivered, the chief nurse, who was also in charge of Kazune, said: "Kazune must also be here." In that moment, the people in the delivery room heard *Ave Maria* played.

### *Takatoki's Unusual Behavior*

Takatoki is an extremely sensitive soul and easily overwhelmed by a scene describing or suggesting death or parting. One of the most impressive instances for his mother Fumiko occurred when he was still under 1 year old. One day she read him a picture book titled *Bye Bye Matane* (*Bye Bye See You Again*) (Sato 2007), in which six characters say good-bye to the reader one by one. For instance, on the first two pages there is a chick accompanied with the words: "Good morning, chick. Let's play together." On the third and fourth pages, the chick is with its mother (chicken) and the words read: "My mother has come to pick me up. Bye bye, see you again." Every time Fumiko read the parting words to Takatoki, he began to

cry. Another unforgettable moment took place when Fumiko took him to a screening of a documentary movie titled *Umareru (Being Born)*, which features pregnancy and birth, and also miscarriage, stillbirth, infertility, and disabilities (Ushiyama & Goda 2010). It was February 2012 and Takatoki was five years and seven months old. One scene in the movie involved a short animation depicting a deceased baby having wings like an angel who leaves his mother. Watching the scene, Takatoki burst into tears and would not stop crying. Bewildered, Fumiko asked him why he was crying so bitterly, to which he replied: "Poor baby, poor baby."

### *The Interpretation of the Case*

As a social worker who has seen some cases in which a child who was born after his/her deceased sibling is negatively influenced by parents who treat him/her as the deceased child reborn, Fumiko insists that she would never accept Takatoki as Kazune reborn. Yet she says she cannot deny strong spiritual connections between them in view of the series of incidents she had experienced and described above. Shuichi, her husband, is more open to the possibility of reincarnation and says he half believes the possibility. The same applies to Ms. Hasegawa, the chief nurse.

## The Case of Takuma

This is a case in which a child who was born after two miscarriages said that he was the unborn babies.[12] He also talked about womb memories. After talking with the mother over the telephone, I interviewed her and the child on September 9th, 2016. He was six years old and did not remember his remarks, so the source of information is his mother.

Takuma was born on April 18th, 2009, in Aichi prefecture. When he was three or four years old, while he was taking a bath with his mother, he said: "The pool in the belly was small," apparently referring to his experience while he was in the womb. In October 2015, when Takuma was eating snacks with his mother in the living room, relaxing, he said casually: "I entered mom's belly twice, but died. But I looked for it again, and I was so happy that I was able to find it." His mother had two miscarriages: once in 2012 and once in 2014. In both cases the babies were about two months old when they were miscarried. Takuma had no way of knowing about them and the surprised mother just replied: "Oh, really. It's good to see you again."

According to the mother, the third pregnancy with Kazune was different from the preceding ones in that she felt a baby did come to her.

As stated above, Takuma did not remember these remarks at the time

of the interview, but he claimed that he remembered being in the womb and often hiccupping.

Although this has no direct relevance to the memories Takuma talked about, Takuma appeared to be unusually intelligent,[13] and I was impressed with Takuma's knowledge about yoga postures. According to the mother, he obtained the knowledge from a TV game, but the way he talked about them and instructed me to strike some Yoga poses, and the way he analyzed them reminded me of a real Yoga instructor.

## The Case of Tae

This is a case in which a mother appears to have come back to her daughter about three years after her death as her daughter. The two people involved in the case accept the reincarnation interpretation. I came to know this case from the director of a hospital I became acquainted with at a private meeting in which people remembering their past lives talked about them. After exchanging a couple of e-mail messages with the child's mother Atsuko, on August 11th, 2015, I conducted an interview with her and her daughter Tae, whom Atsuko regarded as her mother Midori reborn.

### *Midori and Atsuko*

The previous personality Midori, who was born in 1930, was a housewife of a town councilor in the Chubu region. She had two sons and one daughter. According to the daughter Atsuko, she was so congenial and kind that everyone loved her. Because of her husband's important position within the community, the house was frequently visited by guests, and Midori made every effort to entertain them with foods and gifts. When she was 63 years old, she was diagnosed with acute leukemia and soon passed away on June 11th, 1993. At that time, her daughter Atsuko had been suffering from depression and Midori had shown great concern for that. Midori was really sorry that she had to die, leaving Atsuko in that condition.

### *Tae*

One year after the death of Midori, Atsuko, whose mental condition had improved, got married, moved to another area, and on May 28th, 1996, a female child Tae was born. Tae turned out to be a congenial baby and she reminded Atsuko of her mother. When Tae was about two years old, Atsuko happened to show Tae a picture of Midori, saying: "This is your grandmother." In reply Tae said: "It's Tae [= me]." Upon hearing her say so, Atsuko instantly thought that Tae was Midori reborn. The religion Atsuko was brought up with was the Rinzai school, one of the major zen

**TABLE 3**
**Characteristic Traits of Tae That Reminded Atsuko of Her Mother Midori**

| | |
|---|---|
| ① | She had fastidious taste in clothes, and even as a kindergartner would insist on choosing what she wore. |
| ② | She was fond of and good at drawing pictures. |
| ③ | Whenever the house hosted a guest, she was excited and gave a big welcome to him/her. |
| ④ | She expressed great "mother-like" affection to Atsuko. |

schools in Japan, and the concept of reincarnation was familiar to her. She had occasionally heard a family member say something like: "He was too stubborn, so I don't want him to be reborn to our family while I'm alive." Although this was the only occasion when Tae explicitly said that she was Atsuko's mother reborn, she showed some characteristics that confirmed Atsuko's belief, which are summarized in Table 3.

Related to ④ in Table 3, there was a very impressive incident that further confirmed Atsuko's conviction that Tae was her mother reborn. When Tae was three years old, Atsuko was suffering from a relapse of depression. One day, when Atsuko took a walk around the house with Tae, holding her hand, she noticed that Tae was muttering something to herself. Turning an attentive ear, she heard Tae saying: "I have to cheer her up. I have to cheer her up." Upon hearing this, Atsuko strongly felt that her mother, who had been showing concern about her mental condition, came back to take care of her again.

As for Atsuko's father (Midori's husband), who passed away on January 1, 2002, by accident, Atsuko did not talk about her conviction that Tae was Midori reborn, and did not know how he thought about Tae. Tae lived in an area about 30 kilometers away from where Atsuko's father lived, and they did not have much time to be together. Yet, when Tae was with him, Atsuko felt that they were very close to each other. Tae commented that she had not necessarily been happy with him because he showed too much love to her.

When I conducted the interview, Tae was 19 years old and did not have specific memories as Midori (her grandmother). She was still fond of drawing pictures, but she no longer had fastidious taste in clothes. However, she still remembered how excited she was whenever the house held a guest (= ③ in Table 3), and I felt that she was very friendly and had a glowing personality.

### The Case of Tomiko

This is an experimental birthmark case in which a deceased uncle appears to have been reborn as his niece. I came to know this case through Ms. Komiya

Hisako. She is a wife of an offspring of Tozo, the previous personality of Katsugoro, the central figure of the well-known Japanese case, which Dr. Ian Stevenson cited in his groundbreaking 1960 article (Stevenson 1960:65). Tomiko is Hisako's younger sister. I conducted an interview with Hisako and Tomiko on February 21st, 2016, and another with Hisako, her younger brother Isao, and their mother Kie on August 28th, 2016.

### *Experimental Birthmark Cases in Asia*

In cultures where reincarnation is accepted, birthmarks or birth defects are often interpreted as evidence showing a connection between a newborn and a deceased person. In some cultures, relatives or close friends of a deceased person mark his/her body expecting that a birthmark will show at the same site on the body of a baby who will be regarded as the reincarnation of the deceased person. Dr. Ian Stevenson coined the term "experimental birthmarks" to refer to this practice and reported 20 cases he investigated in Burma, Thailand, and Turkey (Stevenson 1997:805–879), and Tucker & Keil (2013) reported 18 cases from Myanmar (Burma) and Thailand. Stevenson (1997:804) provided earlier sources reporting the practice: Tibet (Dalai Lama 1962); China (De Groot 1901/1969); Burma (Khaing 1962); Thailand (De Young 1966, Rajadhon 1961); and India (Gold 1989, Parkin 1988, Parry 1932).

The practice was also reported in Japan. Probably the oldest examples were two stories reported in *Inga Monogatari* compiled in 1661 (*Inga Monogatari* 1661).[14] One is a story of a woman who had a birthmark on her face. Her mother had painted with sumi ink, the ink used for Japanese calligraphy, the face of a child who had been born and died before the woman, hoping that the child would be reborn. The other is a story in which a parent made a scar on the arm of a dead child, and the child was reborn with a birthmark on the same spot. Other sources written in Japanese are provided by Takatsuka (2005).

A Japanese case written in English is the story of Riki-Baka, who was a man of great strength, but intellectually limited (Hearn 1904). When he died young, his mother wrote his name in the palm of his left hand, praying for him that he would be reborn into a happier condition. After a while, a child with a birthmark on his left hand was born in a wealthy family. The birthmark read "Riki-Baka." As Hearn wrote in the Preface, "[t]he incident of 'Riki-Baka' was a personal experience; and I wrote it down almost exactly as it happened, changing only a family-name mentioned by the Japanese narrator."

### *Tomiko and Yukichi, Her Previous Personality*

Yukichi was born in 1931 as a fourth child and a second son of a family living in Akita prefecture. On August 8th, 1934, he died of dysentery when he was three years old. Since he was a big, healthy child, his family members strongly wished that he would come back, and Isamu, Yukichi's older brother, drew a big circle using sumi on the back of the neck of his deceased brother. In 1950 a daughter, Hisako, was born to Isamu. Then, on April 15th, 1954, another daughter, Tomiko, was born. As the midwife in charge of the birth noticed the round reddish birthmark, possibly about 3 centimeters (1.2 inches) in diameter, on the back of the child's neck, she let out a gasp of astonishment. The mother, who was worried by the midwife's reaction, immediately noticed the birthmark and was scared that the child might have a serious handicap or disorder. Her concern was relieved when she heard from her husband Isamu that the birthmark on the back of Tomiko's neck corresponded with the circle he had drawn on his deceased brother's neck and was possibly a sign of Yukichi's return.

Tomiko turned out to be a big and healthy child just as Yukichi had been, which was another confirmation for Isamu that she was Yukichi reborn. Yukichi appeared to have been totally convinced that Tomiko, although she did not have any memory as Yukichi, was his deceased brother reborn, and whenever the family had a guest, Isamu called Tomiko and showed the guest her birthmark and told the reincarnation story.

When Tomiko was young, she was particularly big and looked a couple of years older than she actually was.[15] One story repeatedly talked about within the family is about an incident that took place at the nearby railroad station. One day when Tomiko was still a kindergartener, Isamu went out with her to Hachirogata station to get on a train bound for Tokyo. At the station, Isamu bought a train ticket only for him because kindergarteners were free of charge. At the entrance gate, however, a station attendant stopped him claiming that the child had to buy a ticket. Isamu explained that she was still a kindergartener, but the station attendant would not easily believe it.

Isao, who is one year younger than Tomiko, told the author that in the elementary school he and Tomiko attended, he had been treated favorably by the people around him including senior students because they respected Tomiko, who was not only beautiful but taller than other students.

It should be noted that since none of the family members except Isamu knew Yukichi, the purported resemblances between Yukichi and Tomiko were solely based on Isamu's observations. Furthermore, since Isamu had passed away in 2010, I was unable to obtain his testimony.

**Figure 2. The birthmark of Tomiko.**

### *About the Practice of Marking a Deceased Person's Body within the Family*

According to Hisako, her father Isamu marked Yukichi's body simply because he had been told to do so by his father (Hisako and Tomiko's grandfather). He only wished him to be reborn in a good place, but not necessarily to come back to his place. Their family religion has been Ikkoshu or Single-minded school of Buddhism, and the concept of reincarnation was familiar within the household, although none of the members I conducted an interview with knew real examples of CORT. Neither did they know if the practice of marking one's body had been conducted in other families.

### *Tomiko's Birthmark*

Hisako, Tomiko's elder sister, and Isao, her younger brother, agree that the size of the birthmark was about 3 centimeters and that the color was reddish. As for the shape, Hisako remembered that it was round while Isao claimed that it was a bit oval and horizontally longer. As Tomiko grew, the birthmark faded in color although its size did not change. It was still visible when I conducted the interview (see Figure 2).

## Discussion and Conclusion

In this article, I have reported five same-family CORT. The features observed in these cases vary considerably. The case of Kanon is the richest in the sense that it has the largest number of features observed in CORT, with an announcing dream, and statements as well as behaviors appearing to be related to the past life. The poorest is the case of Takatoki with only a kind of announcing dream and behaviors appearing to show the relevance to the girl who was stillborn.

The relative strength of children's claims to remember past lives tends to be weaker in same-family cases than in stranger cases,[16] so that, in general, the former are weaker as evidence for paranormality. Yet, in other respects, they are no different from stranger cases and therefore worth investigating in conjunction with the latter.

The present investigation raises an interesting question, which is to be pursued in future research: How common are same-family cases in Japan in comparison with other cases including stranger cases? Stevenson (1986:209–211) and Haraldsson and Matlock (2016:222–223) demonstrated that the percentages of same-family and other cases differ significantly from country to country (or culture to culture). According to the figures reported in Haraldsson and Matlock (2016:223), the lowest percentage of same-family cases is that of India (16%) and the highest is that of the Gitxsan of British Columbia (100%). As discussed in Yanagita (2013), skipped-generation reincarnation might have been considered "normal" in some areas in prewar Japan. With the assumption stated in the Introduction that culturally prescribed ideas about reincarnation would be carried into death and would influence decisions made in the postmortem state, the incidence of same-family cases is expected to be relatively high in such areas.[17]

The case of Takatoki, the weakest one, involves interesting "coincidences" appearing to suggest some spiritual connections between the two people involved: The song *Ave Maria*, and the dates of estimated confinement, birth, death, and the funeral. "Coincidence" related to the dates of death and birth is often observed in childbirth as reported in Ichikawa (2014), and the phenomenon may be worth investigating in studying CORT as well.

I hope I have shown that same-family CORT are not uncommon in contemporary Japan, and that they are worthy of further investigation.

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## Notes

1 Sudduth's original wording is modified to suit the present purposes.

2 Stranger cases predominate in places where karma or God are believed to determine the new family, and places where a belief in reincarnation is not part of the culture, but they are the rule in indigenous tribal societies where the individual is thought to have control over the reincarnation process (Haraldsson & Matlock 2016: Chapter 26).

3 Matlock (Haraldsson & Matlock 2016: Chapter 29) reaches this conclusion partly from an analysis of 10 solved suicide cases. Although violent deaths in general are associated with stranger cases, the suicide cases occurred in the same family or among acquaintances. Matlock conjectures that this is because the self-killing left the mind in control and less befuddled than an unexpected, violent death would have done.

4 This case is also reported in Ohkado (2016) in Japanese.

5 "Kaguya-hime" is the main protagonist in *The Tale of Kaguya* or *The Tale of the Bamboo Cutter*, a 10th-century Japanese folktale. She is found as a baby inside a bamboo stalk by a bamboo cutter, and raised as his daughter. She turns out to be an unworldly being from the moon and eventually goes back to the moon. See Kawabata and Keene (1998).

6 The phenomena may be accounted for in terms of psychokinesis on the part of a disembodied mind (Matlock 2017).

7 An announcing dream is one of the central features of cases of the reincarnation type (Tucker 2005:27–28). The phenomenon may be interpreted as a disembodied mind's attempt to communicate with the living through extra-sensory perception (Matlock 2017).

8 The original lyrics are in Japanese. The English translations are from a fan site with slight modification by the present author: https://ijahlovesmrchildren.wordpress.com/2008/11/16/mr-children-hana-no-nioi-the-scent-of-flowers/

[9] "Life-between-life memory" is different from "intermission memory" used by Dr. Ian Stevenson and others, in that the former does not include "womb memory" included in the latter.

[10] Here the term "spiritual connection" is used to refer to synchronic incidents which are not usually counted as features of cases of the reincarnation type, but are often observed and meaningful to those involved. As argued in Ichikawa (2014), such synchronicity is often observed in childbirth, and it will be worth recording and analyzing in conjunction with cases of the reincarnation type. One possible interpretation is that, like electricity-related phenomena observed above, they are attributed to psychokinesis on the part of an disembodied mind.

[11] The book does not include any parapsychological discussions, and the incidents are just reported as "inexplicable" ones.

[12] Tucker (2005:164–169) reports a case of a boy who claimed to have memories as a miscarried baby.

[13] Haraldsson (1995), who compared 23 Sri Lankan children between the ages of 7 and 13 years old who had had past-life memories and 23 controls who had not had such memories, showed that the former had greater verbal skills and better memory than the controls. Tucker and Nidiffer (2014) studied 15 American children who had made repeated statements about remembering a past life and demonstrated that in three of the four subtests their scores are significantly higher than the average and that they also scored higher than the average in the remaining one subtest.

[14] I owe this information to Mr. Yanase Hitoshi, a schoolteacher and an author of several biographies including the story of Katsugoro.

[15] Tomiko is about 160 centimeters (five feet 3 inches) tall. According to a survey result of the height of Japanese females conducted by the Ministry of Health, Labour and Welfare, Japan, the average height of women of Tomiko's age is 153.2 centimeters (5 feet and 0.3 inches). So she is still taller than the average.

[16] Tucker (2000) proposed the Strength-of-Case Scale (SOCS) to measure the strength of children's claims to remember past lives. A score of −2 is given to a same-family case and a score of 5 to a total stranger case. There are two intermediate levels between the two: Slight association (−1) and knew about each other but no association (0). So scores of the other items being equal, same-family cases are scored lower than stranger cases.

[17] In the Internet-based research conducted by the present author, 37 of the 10,000 women reported that their children had ever talked about past-life memories. 28 of them answered the question: "Was the person in

his/her past life identified?" Only 2 (7.7%) answered "yes," and in both cases the identified person was a family member (Ohkado 2015).

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*RESEARCH ARTICLE*

# A Test of an Occult-Themed Séance: Examining Anomalous Events, Psychosomatic Symptoms, Transliminality, and Electromagnetic Fields

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**Abstract**—This paper reports on an Owen and Sparrow (1976) genre séance study to examine the relationships among transliminality, psychokinesis (PK), general subjective and external anomalous experiences, contagion effects, and small variations in electromagnetic field activity. Eleven participants in two series of séance sessions were observed and recorded for anomalous, subjective, and somatic experiences. No verifiable PK or video-captured anomalous activity occurred, but relationships were found between geomagnetic and electromagnetic field activity during the reporting of subjective anomalous experiences. Electromagnetic fields were found to vary significantly across sessions. Contagion effects were found in the types of reports issued by participants. Transliminality and related measures were unrelated to subjective reports of anomalous phenomena. Implications of electromagnetic and geomagnetic fields associated in time with anomalous somatic reports and future research are discussed.

## Introduction

In the world of parapsychology, micro-psychokinesis (micro-PK) seems to be the preferred field of study (e.g., Bösch, Steinkamp, & Boller 2006, Radin & Nelson 2000), while macro-PK appears neglected. There

are, however, exceptions. William Roll spent decades in his study of people (mostly children) who were the focus of RSPK effects (Recurrent Spontaneous Psychokinesis) (Roll 1972). Outside of the laboratory, there are the historical and more modern accounts of Poltergeists and hauntings provided by Gauld and Cornell (1979). Psychical research is also known for a series of "séance" sitter studies for which Kenneth Batcheldor and others are famous (Batcheldor 1966, 1984, Owen & Sparrow 1976). These researchers proposed that participants joined in a sitter group can produce macro-PK phenomena over time (Batcheldor 1966, 1984, Owen & Sparrow 1976). More recently, Wilson, Williams, Harte, and Roll (2010) conducted a sitter group while demonstrating an increase in electromagnetic fields (EMF) during a particular séance session. Previous psychical research has reported PK events in séances and sitter sessions (see Solomon & Solomon 2000, Storm & Mitchell 2003, Williams & Lang 2002 for examples). However, the Wilson, Williams, Harte, and Roll (2010) study appears first to report measured changes in EM fields specifically in the séance environment (although see Batcheldor 1984 for a mention of EMF/PK associations).

We were inspired by Wilson, Williams, Harte, and Roll's (2010) research as it relates to the variety of phenomena reported and observed within purportedly haunted environments. Thus, we define haunt phenomena and séance phenomena to include EVP, apportation, light anomalies, as well as PK as externally documentable events via camera or audio recorder. We also wanted to examine the subjective symptoms of haunting, which can represent a variety of somatic features. This distinction between external and internal anomalous phenomena is not new. Storm and Mitchell (2003) in their sitter group work with "Spenser" used a Jungian classification for séance phenomena. Phenomena were classified as either endo-psychic (i.e. somatic and internal) or exo-psychic (i.e. originating in the environment). We wish to maintain this distinction, but further define exo-psychic events as phenomena that are not only externally observed, but vetted (i.e. compared and examined in terms of alternate explanations and quality via multiple digital recordings of either audio or video). To further understand endo-psychic phenomena, we examined several contextual variables and the role of psychological contagion that may provide a more holistic approach to the laboratory séance setting.

We were also interested in the generation of EMF from Wilson, Williams, Harte, and Roll (2010). A sizeable body of research has examined GMF/EMF changes associated with psychic phenomena (i.e. Ryan 2015). However, these associations were very broad in scope, represented delayed readings, and often contained large amounts of aggregated EMF data over time. Readings were taken from areas, in some cases hundreds of miles

away (but also see Braithewaite [2008] for a critique of EMF collection procedures and psychic phenomena). We deem the relationship between EMF and exo-psychic (hereinafter, external) and endo-psychic (hereinafter, subjective) phenomena of importance in the examination of macro-PK in a séance setting. Essentially, brief magnitude changes in laboratory-collected EMF that are associated in time with either type of reported event provide evidence of a known and externally measurable energy associated with potentially psychic paranormal phenomena. As such, the ability to replicate this relationship in a séance environment as opposed to a haunted environment (e.g., Laythe & Owen 2013) lends validation to the argument that these phenomena are not necessarily a product of psychosis or a psychological state (see Irwin 2009 for a review of the ***psychodynamic functions hypothesis*** of paranormal belief). We explore all of these components in more detail below.

### *Previous Work with Séances and Macro-Psychokinesis*

Work with macro-PK in the laboratory is sparse in modern settings but more common in the earlier history of parapsychology. Work by Sir William Crookes with D. D. Home was conducted under the best laboratory conditions of the time. Home, under excellent controls, produced a staggering variety of paranormal phenomena. Crookes' ultimate validation of Home's myriad phenomena was one of the impelling forces toward the formation of the Society for Psychical Research (Braude 1997, 2015). Similarly, Eugene Osty's examination of Rudi Schneider under experimental conditions in the early 1930s used an infrared motion detector to detect fraud for Schneider's PK ability. Eusapia Palladino, despite being caught in trickery, produced macro-PK in highly controlled conditions on several occasions (Braude 1997).

Research trends in the last several decades have been influenced by the work of Kenneth Batcheldor. Batcheldor's (1984) studies of sitter groups resulted in the formulation of three conditions in which sitter sessions were most likely to produce PK: a high degree of belief in the phenomena, low ownership resistance, and low witness inhibition. Essentially, what matters most for success is the amount of ***belief over doubt*** when a macro-PK event takes place. It appears essential that the participant is not inclined to believe that the anomalous movement came from himself or herself (i.e. ***ownership resistance***). This tendency prompted others (e.g., Owen & Sparrow 1976) to involve spirits in sitter groups, so that outside entities could be blamed for the phenomena. Likewise, Batcheldor (1984) claimed that any witnessed PK, due to its shocking nature, could inhibit future PK (i.e. ***witness inhibition***). As such, Batcheldor found that both cameras and

bright lighting conditions reduced any PK (Batcheldor 1966). In support of these principles, Batcheldor (1966, 1984) would often facilitate a false initial macro-PK event to facilitate belief and generate more PK success during the sittings.

Other research on macro-PK includes William Roll (1972). Roll documented poltergeist cases for several decades and recorded a series of event evidence for the movement of objects without physical contact. More recently, Laythe and Owen (2013) also documented vetted anomalous events in purportedly haunted locations while examining the EMF/GMF associated in time with these events. Roll and Joines (2013) examined previous poltergeist cases in relation to the distance of the RSPK focus and possible EM fields produced. Although speculative, Roll and Joines (2013) found that the distance and frequency of RSPK in these cases mimicked the qualities of EMF decay.

As previously mentioned, work by Wilson, Williams, Harte, and Roll (2010) set up séance settings while focusing on participants who claimed to have psychic abilities. The goal of this research was primarily associated with the manipulation of random number generators. However, these researchers also conducted one session where a Multi-Energy Sensor Array (MESA) was used to examine if environmental differences would co-vary with any phenomena that occurred during the session. MESA included meters for detecting electromagnetic fields, changes in ambient light, and vibration-acceleration. MESA demonstrated notable changes in visible light, magnetic field strength, and infrared light, but at a more general level over the entire session. Yet, Wilson, Williams, Harte, and Roll (2010) did not attempt to associate general increases or decreases of any of these physical variables to particular times of reported events during a séance session.

### *The Potential Effects of Social Contagion in the Séance Environment*

In a comprehensive approach to examining the séance environment, it is relevant to examine not only external anomalous experiences, but also subjective sensations and experiences.

The social nature of the séance environment provides a rich field in which to examine psychosomatic contagion as a primary (but not exclusive) explanation for subjective paranormal phenomena. Psychosomatic contagion represents a natural tendency in human nature to be unconsciously susceptible to both environmental and human elements of suggestion, and is considered a common cognitive heuristic dependent on belief and attention to the contagion stimulus (Rosen & Neneroff 2002).

Contagion research also provides an experimental framework for the fundamental aspect of belief, which Batcheldor (1984) deemed imperative in

the production of anomalous effects such as PK. Related to peer pressure or conformity studies (e.g., Asch 1956), contagion effects in research represent the unconscious mimicry of behaviors, emotions, or somatic experiences from one individual to another or to a group (e.g., Freedman, Birsky, & Cavoukian 1980, Gump & Kulik, 1997, Lorber, Mazzoni, & Kirsch 2007). For instance, marketing research and psychologists have demonstrated across multiple studies that emotions will unconsciously transfer from one person to another (Bruder, Dosmukhambetova, Nerb, & Manstead 2012, Howard & Gengler 2001, Levy 2001, Neumann & Strack 2000, Parkinson & Simons, 2012). Contagion can create or alter goals and produce changes in behavior (Leander & Shah 2013). In direct laboratory studies, contagion created substantial physical psychosomatic effects (Lorber, Mazzoni, & Kirsch 2007). In relation to the former, work by Lorber, Mazzoni, and Kirsch (2007) demonstrated strong psychosomatic effects from modeling a placebo toxin and inferring that participants could manifest certain side effects from its exposure. Results showed that participants who inhaled a placebo toxin displayed more symptoms than the control group and displayed physical symptoms in excess of what was suggested.

### *Transliminality*

In the context of belief in the paranormal and haunting/PK phenomena, some literature has focused on a measure of mental functioning defined as ***transliminality*** (Lange, Thalbourne, Houran, & Storm 2000, Thalbourne & Delin 1994, Thalbourne & Houran 2000). Transliminality has been described as "a hypothesized tendency for psychological material to cross thresholds into or out of consciousness" (Lange, Thalbourne, Houran, & Storm 2000:591). For instance, Thalbourne and Delin (1999), while researching transliminality, found that those with belief in the paranormal were more likely to have creative personalities, mystical experiences, depression, manic episodes, and hypomania. Results showed that those high in transliminality recalled more of their dreams, engaged in more dream interpretation, were more prone to esoteric religions, and scored highly on both paranormal belief and experiences. Houran, Kumar, Thalbourne, and Lavertue (2002) found that heightened hypochondriacal and somatic tendencies, transliminality, and paranormal belief significantly predicted self-reported haunt and poltergeist activity. Other theories relate transliminality to hypnotizability and suggestibility, as well as psychosomatic manifestations and mystical experience (Kelley 2010a, 2010b, 2011, Thalbourne & Delin 1999, Thalbourne & Houran 2000). Thus, one theoretical explanation for anomalous phenomena is that individuals high in transliminality are sensitive to psychosomatic effects created by contagion.

Work in transliminality might also define most haunting experiences as mass psychogenic illness (MPI) (Ryan & Morrow 1992). MPI is often examined by the medical community for mass outbreaks of disease such as epilepsy (e.g., Radford & Bartholomew 2001) that have no biological explanation, or multiple cases of disease within a confined area that have no biological explanation (e.g., Powell et al. 2007). Specifically, Ryan and Morrow (1992) classified four types of MPI. Of particular interest to transliminality, MPI is thought to share features from the three other disorders (i.e. sick building syndrome, building-related illness, and neurotoxic disorders). Each of these conditions begin with a believed environmental trigger-contagion, not unlike an environmental stimulus interpreted as a haunting. Unlike the other classifications, MPI can easily spread across social groups and is triggered by high levels of stress and heightened levels of arousal (Ryan & Morrow 1992). Other research by Jawer (2005) has noted certain demographic variables common to a range of environmental sensitivities or "boundary thinness" that may account for some of the function of mass psychogenic illness.

Whereas other research has demonstrated that MPI and transliminality cannot account for all haunting or macro-PK effects (e.g., Braude 2015, Laythe & Owen 2013, Wilson, Williams, Harte, & Roll 2010), the role of contagion seems present in any séance setting as a partial explanation for subjectively experienced phenomena. Dark rooms, mixed with an expectation of supernatural occurrence, have been shown to create a bevy of sensations, feelings, and perceptions that are interpreted as paranormal (Lange, Houran, Harte, & Havens 1996, Lange & Houran 1997). The séance environment is no exception. Research by Wiseman, Greening, and Smith (2003) found that the suggestion of PK effects, while fake, facilitated belief in the events as genuine. These authors found that belief in PK was a function of higher degrees of paranormal belief. The meditations, invocations, and attempts to contact a spirit serve to create a series of environmental stimuli that facilitate a participant's belief in the paranormal. Ergo, participants become prone to contagion and psychosomatic suggestion. Similarly, other participants' reported sensations and observations provide a direct person-to-person scenario for a contagion effect.

From a more macrocosmic perspective, the process of multiple séance sessions themselves can serve as a form of contagion effect similar to the cases reported of MPI (Powell et al. 2007, Radford & Bartholomew 2001) or can be alternatively considered in the context of the ***experiential source hypothesis*** (Hufford 1982, McClenon 1994, 2002). Essentially, these authors explain haunting (or séance) phenomena as a meaning-making process, where percipients are believed to interpret stimulus in the context

of their beliefs and social context. Subjects who actively participate over several weeks expose themselves to repeated subjective experiences about ghosts and spirits that are collectively shared. These experiences, through collective interpretation, serve as the reinforcement of the "reality of ghosts."

The goal of the current study was to keep track of perceptions and feelings experienced by individual participants of the group within a séance session, as well as the immediate perceptions reported by other participants as a result of that initial report. It was hypothesized that the initial participant's report of a sensation would serve as a natural form of contagion stimulus. Thus, we expected reports of subjective phenomena to be more likely to occur in clusters as opposed to single reports. Similarly, transliminality has been previously associated with these types of subjective paranormal experiences (i.e. Thalbourne & Delin 1999, Thalbourne & Houran 2000). We expected participants high in transliminality to be more susceptible to contagion, and thus more likely to report larger numbers of subjective experiences compared with those with lower transliminality scores.

Although not the focus of the current work, we note that there is the possibility that potential distant intention phenomena (DMILS) could theoretically occur. DMILS effects could confound either MPI, general contagion, or transliminal tendency (see Schmidt 2015, for a review). We recognize this possibility, but wish to look first at more conventional (and perhaps higher order) suggestion and contagion effects that can occur from the séance environment.

### *Anomalous Phenomena and Electromagnetic Fields*

Aside from research validating PK and other associated haunt-poltergeist phenomena, another area of research concerns the role of EMF and its relationship to said phenomena. Previous researchers have examined locations that are the source of reports of PK, anomalous lights, EVP, apparitions, and, in bulk, a wide variety of somatic perceptions. Previous work has demonstrated significantly different amounts of EMF strength and variation between reportedly haunted and non-haunted locales (Braithwaite 2004, 2006, Braithwaite, Perez-Aquino, & Townsend 2004, Braithwaite & Townsend 2005, Nichols & Roll 1998, Roll & Persinger 2001, Wiseman, Watt, Greening, Stevens, & O'Keeffe 2002, Wiseman, Watt, Stevens, Greening, & O'Keeffe 2003) with some research showing a lack of relation between EMF and phenomena (i.e. Maher 2000).

Whereas EMF variability in purportedly haunted locales has been established, EMF's relationship to PK effects has two non-quantum physics theoretical explanations. Persinger and his colleagues have conducted the

more commonly known (but contested, see below) line of work. Their laboratory research demonstrated low-level magnetic fields that create perceived "anomalous phenomena" (St.-Pierre & Persinger 2006). These laboratory studies demonstrated that the projection of low-hertz magnetic fields applied to the parietal-temporal lobes creates a "sensed presence" for approximately four-fifths of subjects (Booth, Koren, & Persinger 2005). As a result of these studies, other researchers have suggested that geomagnetic fields in purportedly haunted locations create hallucinations that are misinterpreted as haunting phenomena. Persinger's work demonstrated that GMF can have hallucinatory effects on the temporal lobe that would explain the residents' reports of auditory and visual hallucinations. In one study, Persinger and Cameron (1986) collected seismic and EMF/GMF data over 15 nights in a reportedly haunted location to support the hypothesis that some haunting activity is the product of geomagnetic fields (GMF) that spur from the Earth's crust. Likewise, Gearhart and Persinger (1986) also found an association between geomagnetic increases associated with what were classified as poltergeist episodes. However, Persinger's claims with geomagnetic fields and the sensed presence are controversial. Other researchers (Granqvist et al. 2005) have critiqued this work and proposed suggestion as the actual source of these effects. Persinger and colleagues have debated the validity of the suggestion interpretation (e.g., Persinger & Koren 2005, Larsson, Larhammar, Fredrikson, & Granqvist 2005).

### *Externally Vetted Anomalous Phenomena*

More recent research suggests an interesting association between EMF and phenomena that is external to the person, captured on audio and video (i.e. recordable), and subsequently vetted (i.e. compared for quality, alternative explanations, and compared against multiple other video sources and audio sources of the location). In terms of Belz and Fach's recently published model of Exceptional Experiences (ExE) (Belz & Fach 2015), our operationalization of external phenomena would be classified as a conditional attempt to separate both what is ***ordinary phenomenon*** from ***anomalistic phenomenon***. Our vetting process using the EMPE (see Methods section) serves as a further classification-verification model for separating events from ***internal anomalous phenomena*** (e.g., subjective in terms of experience) from ***external phenomena*** (e.g., veridical stimulus, which is subsequently interpreted). We would theoretically add that external phenomena as defined by Belz and Fach (2015) would subsequently fall under Hufford's (1982) ***experiential source hypothesis***. That is, phenomenologically veridical phenomena that are subsequently interpreted by their percipients in the context of culture and environment.

Wilson, Williams, Harte, and Roll (2010) noted some physical as well as external phenomena and recorded an overall increase of mains frequency (i.e. EMF from human-made electrical sources) EM fields during their séance session. In a somewhat similar vein, Laythe and Owen (2013) demonstrated a strong and significant relationship between EMF spikes and the occurrence in time of vetted audio and video recorded phenomena at a haunted location. Related to both Wilson, Williams, Harte, and Roll (2010) and Laythe and Owen (2013), work by Roll and Joines (2013) shows that in three cases the amount of RSPK produced as a function of distance conforms to the inverse square of an exponential decay function. This relationship lends observational (but not formally tested) support to a physical energy model of RSPK. These authors also found residual magnetic field readings with some objects that had been moved with RSPK. Although sparse, these studies suggest that Gearheart and Persinger's (1986) explanation of poltergeist phenomena is certainly viable, but it fails to account for the entirety of an EMF anomalous phenomena relationship. Finally, distant relationships between GMF and success in various psychic tasks in the laboratory strongly suggest at least a distant relationship between EMF/GMF and the psychic-anomalous phenomena process (Ryan 2015).

We propose several exploratory hypotheses regarding the nature of séance phenomena and whether the relationship between vetted anomalous phenomena and EMF might also occur in a séance environment. First, can contagion be shown with single and group reports of phenomena? We would expect that phenomena reports under the auspice of contagion would foster similar reports between participants, as opposed to differing accounts during a contagion scenario. Second, we would expect those who score high in transliminality to be subject to greater amounts of contagion, and thus greater numbers of reports. Third, as a more general question, should recordable phenomena occur, will a similar series of time-dependent EMF spikes be associated with them? Fourth, although the weak complex magnetic fields used by Persinger and colleagues may create the phenomena of a sensed presence (e.g., Booth, Koren, & Persinger 2005), there is no indication that brief time-dependent spikes should be associated with subjective perceptions of paranormal phenomena evoked during a séance. Thus, we examine if brief EMF spikes may potentially be associated in time with subjective sensations of anomalous phenomena.

## Methods

### *Participants*

For the current research, 11 participants (7 females, 4 males) from a small college in the midwest participated in one of two series of séance sessions.

Recruitment of participants was selective due to the time commitment and nature of the study, which may have seemed excessive to some students. Announcements for participation were given to students who had previously taken parapsychology classes and students active in the investigation of allegedly haunted locations. All students were informed of the goal of the study, which was to genuinely conduct a séance over a period of multiple sessions. Participants accepted these goals and appeared genuine both in their belief in the séance and their desire to elicit effects from the experience. Participants were also warned (per IRB consent and face-to-face briefing) that somatic sensations or negative emotions could possibly result from these activities. Series 1 had 5 participants (3 females, 2 males) who completed 10 sessions. Mean age for the Series 1 group was 23 (range = 21–28, *SD* = 3.39). Series 2 had 6 participants (4 females, 2 males) who completed 9 sessions. Mean age for the Series 2 group was 29 (range = 19–45, *SD* = 11.15). Ethnicity among the participants was predominantly Caucasian (90.9%), but participants represented a diverse group of religious beliefs (18.1% Protestant, 45% other, 8.9% Pagan, 18.1% none). The current research voluntarily recruited subjects with full knowledge of the goals and aims of the study. As such, overall paranormal belief was above the median score, as measured by Tobacyk's (2004) paranormal belief scale (i.e. average was in 60th percentile, M = 112.36, *SD* = 18.97). Series 1 contained two students with previous experience of paranormal investigations from previous work with the first author. Series 2 contained one participant who was both familiar with paganism and occult practice as well as having previous experience investigating purportedly haunted locations. Another participant was also a professed pagan, who had ceased practicing occult ritual for some time. In both series, approximately half of the students were personally familiar (and friendly) with each other outside of meeting for sessions. Finally, one participant left the study at session 6 due to a vision of an entity she professed to see. Two other participants ceased participating later in the series for reasons unexplained to the researchers.

### *Measures*

All participants first completed a paranormal belief scale, a measure of transliminality, and an anomalous perceptions scale. Participants also completed background measures, including general demographic information such as age, sex, and socioeconomic status, etc. Standardized measures are described below.

**The Cardiff Anomalous Perceptions Scale** (CAPS: Bell, Halligan, & Ellis 2006). A 32-item self-report measure of perceptual anomalies. The scale reportedly demonstrated high content validity in a clinical population

and included subscales that measure distress, intrusiveness, and frequency of anomalous experience. A principal components analysis of the general population data revealed three components: "clinical psychosis" (largely Schneiderian first-rank symptoms), "temporal lobe disturbance" (largely related to temporal lobe epilepsy and related seizure-like disturbances), and "chemosensation" (largely olfactory and gustatory experiences). Sample items included "Do you ever feel that someone is touching you, but when you look no one is there?" and "Do you ever hear voices saying words or sentences when there is no one around that might account for it?" The mean score for this measure was 8.27 ($SD$ = 4.83); reliability for this measure in the current study was .91 (KR-20).

**The Revised Paranormal Beliefs Scale** (Tobacyk 2004). A 26-item self-report inventory measured the degree of belief in each of seven dimensions of mysticism: Traditional Religious Belief, Psi, Witchcraft, Superstition, Spiritualism, Extraordinary Life Forms, and Precognition. Sample items included "The soul continues to exist though the body may die," "Some individuals are able to levitate (lift) objects through mental forces," and "Black magic really exists." Mean scores on the current measure were 112.36 ($SD$ = 18.97), and reliability was .99 (Cronbach's $\alpha$).

**The Revised Transliminality Scale** (Lange, Thalbourne, Houran & Storm 2000). A 17-item self-report measure that defines a probabilistic hierarchy of items addressing magical ideation, mystical experience, absorption, hyperesthesia, manic experience, dream interpretation, and fantasy proneness. Sample items included "Sometimes I experience things as if they were doubly real" and "I have felt that I had received special wisdom, to be communicated to the rest of humanity." The revised scale corrects for age and gender biases and is unidimensional by a Rasch criterion. Mean scores in the current study were 12 ($SD$ = 2.56) with a reliability of $\alpha$ = .87 (KR-20).

### *Equipment*

The use of equipment for the proposed study closely followed the protocols of Laythe and Owen (2013). Individual equipment is described below.

**DVR Camera System.** This equipment included a four-camera DVR system that was placed within the controlled séance environment. The infrared cameras were located to record multiple angles in the room, including under the table and outside of the laboratory space, to prevent fraud, to account for random noises, and to record any possible anomalous phenomena.

**EMF Meters and Placement**. Four meters were placed in the séance environment to record magnitude changes in EM fields that might occur.

Specifically, two Alpha Lab Tri-Field 100XE meters (measuring 60 Hz EMF) and two Alpha Lab Natural EM meters (measuring 0–8 Hz GMF) with output jacks were placed in pairs into two curtained walls of the séance space. Magnifying coils were placed on EMF meters making them more sensitive to 60-Hz magnitude changes. Thus, 60-Hz EMF meters measured changes in the 0–1 mG range, while GMF meters measured 0–8 Hz EMF in the 0–100 mG range. We emphasize here that EMF readings from the Tri-Field meters represent very small fluctuations due to the use of coils to magnify sensitivity. Data were logged from these meters with the use of a DATAQ data-logger and computer system at 20 samples per meter, per second. Previous field tests of the meters demonstrated an 8-ft diameter range in detecting a 100 mG + field. Footsteps did not affect readings on the meter, and human presence also did not register when the meters were in magnetic mode. Furthermore, all recording equipment was approximately 5–7 feet away from the meters, wiring which led to the data-logging equipment was shielded, and meters were placed at least 3 feet from power sources (outlets in the walls). From both experience and the inverse power law regarding EMF magnitude, these steps inhibited direct interference from mains frequency (60 Hz) electrical EMF sources directly within the laboratory. Direct tests of the meters capacity had been previously conducted, and computers or power outlets (if unshielded or bleeding) did not register on the meters (including coiled meters) beyond 2 feet. No magnetic shielding was employed as our analysis process accounts for environmental sources of EMF/GMF.

### *Procedure*

**Séance Content and Rationale.** One of the goals of the study was to see if a séance-like environment would create genuine macro-PK phenomena. We borrowed from Batcheldor (1966, 1984), the work of Owen & Sparrow (1976), modern occultism (e.g., Regardie 2010), and research in contagion (e.g., Lorber, Mazzoni, & Kirsch 2007) to create a hybrid approach to generating 19 macro-PK events. Our rationale was that more environmental cues (i.e. curtains and darkness) and practices (i.e. an occult summoning ritual) would facilitate the belief component emphasized in Batcheldor (1966, 1984). We recognize that Batcheldor recommended a light-hearted atmosphere, and, as such, this focus on a more traditional occult-séance environment is a deviation from previous séance studies. As Mass Psychogenic Illness is a function of location and belief in the particular somatic disease (Powell et al. 2007, Ryan & Morrow 1992), we eschewed Batcheldor's (1966, 1984) exact procedures while keeping the

spirit of Batcheldor's conditions for producing PK. Thus, by creating an environment for a séance, a ritual for a séance, darkness, and individuals who have higher paranormal belief and experience with haunted locations, we attempted to create the strongest manipulation for the contagion of not only anomalous belief but also belief in PK.

For both groups, we initially, per Bachledor (1966, 1984) and Owen and Sparrow (1976), offered a fictitious entity (complete with background and history) for participants to focus on. In both series, neither set of participants wanted to use the fictitious entity and were more enthusiastic to invite whatever spirit was available for the session. We felt that insisting on the protocol might inhibit participants' motivation (and thus effectiveness) and abandoned that component of the procedure after the first session of both séance series.

Conducted at the university at 6 p.m. during the fall, and then during winter and early spring, the experiment had a designated, specific laboratory room. The times were expedient for both participants and researchers. The room was shrouded in heavy black curtains. Placement of cameras was situated to minimize their physical appearance, and thus minimize reminders of being recorded. A standard 2′ × 2′ 4-legged card table (weighing ~8 pounds) was covered with a tablecloth, and one electric candle was placed at the center of the table. All lights were extinguished in the room, producing near pitch-dark conditions except for the very minimal light of said candle. Our hope was to minimize witness inhibition (Batcheldor 1984) by keeping the room dark. Cameras were able to record all activity using infrared mode.

In order to facilitate the most genuine experience possible, materials from existing western esoteric occult systems were integrated into the séance procedure in the form of an opening meditation involving the middle pillar. This is a common western esoteric technique taken originally from the ***Golden Dawn*** (Regardie 1996, 2010). Participants' rituals for this study involved invoking the visualization of a circle of blue light around the séance table, and visualization of a barred door with the symbol of the moon. While repeating ritual phrases, participants subsequently visualized the door opening and the invitation of a spirit or spirits to enter through. In closing the session, the opening ritual was reversed, while telling participants that this procedure would remove any spiritual influence directly from them.[1] As meditative breathing was used in both rituals, controlled breathing was also used to alleviate any psychosomatic effects created by the session. All participants were checked after each session for their wellness and emotional health. No lasting effects beyond psychosomatic effects within the sessions themselves were reported to the researchers.

**Session Procedure**. All sessions (10 in the first series, 9 in the second

series) were recorded using digital media. One audio recorder was used as additional documentation. Before any session began, the researchers checked all equipment and logged a common time stamp from the DVR display to compare reported events against EMF readings as well as camera footage.

The team of participants were then allowed into the séance setting and directed to sit at a small lightweight table surrounded by black curtains. Researchers were posted in a separate room outside these curtains. All participants were clearly reminded at each session to verbally speak any sensation or event that they felt or witnessed as it happened. Participants were then verbally cued by the researchers to begin their five-minute opening meditation, which was guided by the investigator reading each step to the participants. After the opening meditation was completed, the séance session commenced, which varied between 25 and 50 minutes. Variation in session length occurred because participant investment in the session was critical to the experiment. In some cases, despite multiple efforts, participants could not get any feelings or signs of "activity," and would ask the research assistants to cease the session. During each séance session, two researchers time-logged any type of event vocalized by participants and monitored the laboratory for odd occurrences captured on video camera (including underneath the table for signs of trickery). Time stamps were written manually by one of the two researchers posted via the DVR-provided time. As a potential lag in accuracy could occur due to writing times by hand, our analysis incorporates the second before the event was spoken (and accounts for the added probability due to the additional period of time). Participants during this period were encouraged to facilitate interaction with a summoned "spirit" (of varying nature), by engaging in attempts of knocking or rapping response in the room, levitation or movement of the table or candle (with hands fully visible on table or in laps), or general requests for a sign of presence.[2]

**Distributional and Time Dependent Binomial Coding of EMF/GMF**. Although we have previously used this method for analysis in Laythe and Owen (2013), binomial probability modeling is not often applied in the social sciences, and certainly less so to physical variables such as EMF. Thus, we wish to spend a brief amount of space clarifying the nature of this type of mathematical modeling so that the reader can see the appropriateness of its use. We have also provided an Appendix to this work for those who prefer a more detailed explanation of the modeling process (see Appendix B).

For any analysis of this type, there are actually two layers of data aggregation. The first is the collection of the raw EMF/GMF data across

séance sessions and the creation of their distribution(s). The second (and safely analyzable layer) is built off of the means and standard deviations from the raw data itself. For the current study, EMF/GMF data was collected as raw volt input (see Laythe and Owen [2013] for reasons why millivolt to milligauss conversion is not viable). EMF generally forms a normal distribution when magnitude scores are collected over time (Braithwaite 2004, 2006; see Appendix B). We operationally defined a spike as the presence of three 2 *SD* ± EMF/GMF readings present out of 20 readings sampled within one second. From this operational definition of a "spike," data are binomially coded as either a miss (any series of scores within one second that fail to achieve fewer than three 2 *SD* magnitude readings) or a success (any series of 20 scores within one second that do contain more than three 2 *SD* magnitude readings). We emphasize that coding in this manner makes the analysis inherently time-dependent (i.e. a hit or miss contained within a set period of time).

One benefit from using this approach is that concern over EMF contamination is mathematically accounted for. Potentially contaminating EMF/GMF sources all become absorbed into the raw EMF/GMF distribution. Extraneous EMF/GMF ***will expand or contract the overall standard deviation***, given sufficient variability. In turn, the magnitude required for a reading to be deemed a "spike" adjusts accordingly. Likewise, more potential contamination will adjust the probabilistic odds of the amount of operationally defined binomial "spikes" needed to obtain a significant finding. As such, the current study did not employ magnetic shielding to guarantee a lack of EMF/GMF contamination from outside of the laboratory. Potential contamination from outside the laboratory is captured in the distributions of the data, and thus adjusts the probability of a success according to the degree of hypothetical EMF/GMF contamination. This process is also more applicable to field environments, where it is often not practical to erect electromagnetic shielding. Due to this two-step process of binomial modeling, very small perturbations in EMF/GMF (as is the case here) or potentially large perturbations can be realistically modeled out of the actual EMF/GMF field data from any location. Any changes in the environment of EMF/GMF, for practically any setting, will be accounted for because the binomial trial's success is ultimately determined by the variance within the distribution.

Another benefit from a binomial approach is that independence of observed data is not necessary. Binomial coding in this manner allows the researcher to obtain the probability of complex events that may be dependent on each other. This is a regular use of binomial modeling, and literal textbook examples can easily be found in graduate or undergraduate

textbooks. One example (see Rice 1995) involves the probability of seeing a car pass by a window, which is not by any means a truly random or independent variable. As one reviewer of this manuscript and Maher (2015, 2016) have thoughtfully pointed out, EMF/GMF readings are similar to the car example, as readings of magnitude can be dependent on each other, and EMF/GMF can be affected by many environmental variables. We do not contest this statement, but note that previous work has applied *t*-tests and other inferential statistics where the independence of observation is assumed in the EMF/GMF data.

Luckily, binomial analysis relies on the *n* number of selected samples (in this case, defined as one-second intervals) collected from the dataset, which are assumed to be independently/randomly selected. Our current study meets this criterion, as we realistically have no knowledge of when participants will verbally report an observation. Their participation serves as a "random" selection from which we can gather our overall series of trials to test against the dataset-driven probabilities.

Most importantly, once EMF/GMF data are operationally defined as binomial trials in the above way, the analysis becomes a test of association between the expected number of random EMF/GMF successes for *n* number of trials selected by participant observation. Thus, a significant binomial test indicates a significantly greater or lesser amount of EMF/GMF occurring ***at the same time*** as the time-dependent phenomena being studied (for the current work, participant verbal reports). Our assumption of EMF behavior, regardless of its source, is that it should be completely unassociated or influenced by participants, their actions, or their intuition. Thus, the null hypothesis for this test is the presence of EMF/GMF at distribution-determined chance levels for any *n* selected binomial trials. The alternative is an association between participant and EMF/GMF, which by common physics should not occur.

Our data, while generally demonstrating a normal curve, showed substantially greater than 5% readings at either tail. Binomial trials based on normal distribution probabilities proved to be an inaccurate estimation of how many spikes we could expect when analyzing the data for this particular study. Furthermore, when associating a spike, as described above, with a report from a participant, we had to account for two meters, each for EMF/GMF, and allow for a two-second window for each report. This two-second window represented the second of the logged report, and the second before to account for time lag in reporting and writing the event. We emphasize to the reader that this allows for a potential binomial "success" (i.e. a spike second) to occur in either of two meters (EMF/GMF) in either of two seconds (the second of the event, or the second before). The "normal

distribution model" for binomial trials depends on extreme scores in the dataset being less than 5%. As a result, we directly aggregated binomial successes and failure across all sessions within both series to obtain an accurate random probability of a success-spike. Thus, within each series, the sum of successes divided by the total amount of seconds in all of the sessions served as an expected random probability for obtaining a spike at any given second during a session (see Appendix B, for mathematical verification of this process). We describe exact coding and the resulting actual random probabilities for EMF/GMF in the Results section.

**Classifying Objective Anomalous Events.** In terms of evaluation, potentially anomalous events were rated with the Evaluative Model for Paranormal Evidence (EMPE) as described in Laythe and Owen (2013). The EMPE system is used only with events that have been captured by audio or video means and does not involve the evaluation of somatic or internal phenomena. Each rating from 1 to 3 represents an estimate of the likelihood of an anomalous event. Ratings are generally assigned as Class 1, likely to be environmental due to audio, video, or simple physical environmental factors that can explain the event; Class 2, possibly environmental, but also possibly anomalous, which represents an event that goes above Class 1 explanations, but has some unverifiable environmental factors that could account for the event; and Class 3, more likely to be anomalous, an event that cannot be clarified or explained by either participants or the environment using all available video–audio sources. The principal of the EMPE is guided by the Popperian (e.g., Popper 1934) philosophy of science. Essentially, a phenomenon can never be accounted as paranormal, but only more likely to be so as alternate explanations are ruled out.

As an example of the application of the EMPE, "table levitation" would be rated Class 3 only if the table itself were levitating without anyone touching the table (as verified by the cameras above and underneath the table). A Class 2 example would involve the table lifting, with only one participant touching the table, thus leaving the possibility of a very clever hoax or ideomotor action. A Class 1 scenario would represent the table "levitating" while all participants touched it from underneath the table. We recognize that in some situations, an anomalous event can be both objective and subjective. However, the classification of objective versus subjective maintains a strict boundary of recordable evidence, which can then be compared against additional video or the event space itself can be inspected, versus subjective events, which have no external supporting video or audio evidence to substantiate the internal claim.

### *Coding Reported Events*

Events were classified into one of two categories: objective events (operationalized as an event captured by camera, not obviously created by participants, and of a potentially anomalous origin) and subjective events (operationalized as a report of a feeling, mood, or perception, which had no supporting external evidence). In other words, an objective event mandated camera or audio evidence that demonstrated no obvious means of tampering or human interference. Events where external phenomena were perceived by participants but were not verified by camera remained classified as a subjective event (e.g., participants' hands were on the table, felt the table lift, but the cameras recorded no movement). All events (objective or subjective) were logged by the researchers using a common time stamp when participants verbally reported any event or sensation.

In order to examine subjective events from a contagion perspective, we parsed events as single (i.e. only one participant reported it) or multiple (i.e. more than one person reported it within a 30-second time frame). All events were coded in a way that ensured only one category was selected for any particular event. We describe each category below.

**Single Event**: These events represented one occurrence of a verbal report of a physical sensation (e.g., hot, cold, prickles, being touched) by any participant. Single Events also included a single report of a participant perceiving some type of phenomenon outside themselves. Examples included touch (e.g., I felt the table move), vision (e.g., I saw a candle or curtain move), or auditory (e.g., I heard a noise, bump, or groan) reports during a particular séance session.

**Multiple Event (Contagion):** These events represented any series of single events that were reported within 30 seconds of a previous person reporting a subjective event. A multiple event was also coded when multiple people reported sensations, perceived movement, or some perceived events outside of themselves (e.g., a shadow, knock, or light anomaly) at approximately the same time. For contagion analysis, we separately coded this variable in terms of whether subsequent reports were similar in nature (e.g., both participants reported prickles) or different in nature (e.g., one participant reported prickles, but the second reported being hot).

## Results

We first note to the reader that all external events reported in the analysis failed to meet EMPE criteria that could possibly allow a classification of an event as Class 3: ***likely to be anomalous***. In other words, throughout sessions, there was never an occurrence of phenomena on video camera

that could not be attributed, at least in part or majority, to the environment or participants. Likewise, no apparitions or light anomalies appeared on camera. No potential PK events were noted in either series and the current study failed to reproduce the previously reported effects of levitation of any object in the laboratory space.

This is not to say that a variety of subjective events were not reported. Indeed, almost every participant reported a variety of movements of the table. Participants reported multiple occurrences of slight vibrations and movement as well as the table being lighter or heavier as they tried to lift it with one finger, or the table tipping or moving in one direction. Participants reported multiple events of the candle placed in the middle of the table moving. However, in all of these cases, either participant ideomotor action could not reliably be ruled out, or movement was not notable enough to be captured on video camera.

In terms of subjective sensations, participants reported a variety of somatic sensations from mild (e.g., feeling watched, touched, or poked) to severe (e.g., nausea, vertigo, exhaustion, and fear). Similarly, many participants reported both visual and auditory reports of phenomena (e.g., growls, shadows, movement around the curtains, knocks, and light anomalies). We note again that none of these visual and auditory events, beyond a few unexplained flashes of light, and numerous orbs (i.e. dust particles) were captured in any way on camera. Some knocks and thumps were reported and captured on audio and video, but with no consistency (i.e. were not repeated in response to questions enough times to be statistically analyzed), nor were we able to reliably determine their source of origin as anomalous.

As participants through both series reported an abundance of subjective occurrences, a narrative style for describing them all in detail would be too lengthy for the current work. Instead, we provide a summary of sensations and experiences of the participants in Table 1. Please note that counts are higher as all events were counted as single events (i.e. collapsing contagion counts and treating all reports as single events). As can be seen in Table 1, the most frequent events reported included various types of uncomfortable feelings (18%) followed by subjective reports of the table moving (13%), and chills or hot/cold flashes (11% each).

### *Description and Analysis of Events and Percentage of EMF and GMF Spikes by Session*

The raw count of single and multiple reports are presented in Table 1. However, because session times varied within series, we adjusted the

**TABLE 1**
**Reported Phenomena by Participants Across All Séance Sessions**

| Experience Type | Counts Series 1 | Series 1 Percentage | Counts Series 2 | Series 2 Percentage | Counts Combined | Combined Percentage |
|---|---|---|---|---|---|---|
| **Somatic phenomena** | | | | | | |
| Chills | 35 | 0.18 | 16 | 0.06 | 51 | 0.11 |
| Uncomfortable feelings * | 32 | 0.16 | 52 | 0.19 | 84 | 0.18 |
| Table lifting/shaking/ moving/feeling heavier | 25 | 0.13 | 33 | 0.12 | 58 | 0.13 |
| Chair moving/shifting | 2 | 0.01 | 2 | 0.01 | 4 | 0.01 |
| Being touched ** | 26 | 0.13 | 16 | 0.06 | 42 | 0.09 |
| Feeling watched/feeling presence | 16 | 0.08 | 8 | 0.03 | 24 | 0.05 |
| Feeling tingles | 14 | 0.07 | 4 | 0.01 | 18 | 0.04 |
| Cold/hot all over | 8 | 0.04 | 44 | 0.16 | 52 | 0.11 |
| Breeze felt | 0 | 0 | 11 | 0.04 | 11 | 0.02 |
| **Auditory phenomena** | | | | | | |
| Taps, bumps, knocks | 14 | 0.07 | 22 | 0.08 | 36 | 0.08 |
| Growls, whispers, barking, rustling, whistling | 6 | 0.03 | 5 | 0.02 | 11 | 0.02 |
| Undifferentiated noise | 3 | 0.02 | 3 | 0.01 | 6 | 0.01 |
| **Visual phenomena** | | | | | | |
| Curtains moving | 5 | 0.03 | 4 | 0.01 | 9 | 0.02 |
| Objects on table moving (candle, recorder) | 4 | 0.02 | 37 | 0.14 | 41 | 0.09 |
| Seeing something (shadow, apparitional, light) | 4 | 0.02 | 10 | 0.04 | 14 | 0.03 |
| **Olfactory phenomenon** | | | | | | |
| General smells | 0 | 0.00 | 3 | 0.01 | 3 | 0.01 |

Note: None of the above-reported phenomena were evident on 4 videocameras or audiorecorder. Counts are higher as contagion group effects were counted as the multiple of people who had them.
* Included nausea, pain, headache, ears ringing/pressure, tight chest, confined/awkward/weird/ confused/troubled/creepy/bad/sick/vulnerable, itchiness, dizziness/lightheadedness, tunnel vision, face pressure, heaviness, numbness, something attached to person/feeding, heartbeat felt in hands.
** Included feeling pushed, stinging, general pain, hair brushed/pulled, burning, and feeling poked.

**TABLE 2**
**Descriptive Statistics and Chi-Square Analysis of Participant-Reported Séance Events and 2 *SD* EMF and GMF Spikes by Series of Séance Session**

| Séance Session Series 1 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | $\chi^2$ | ***df*** | ***p*** |
| Single | 2 | 22 | 3 | 8 | 15 | 6 | 19 | 16 | 22 | 3 | 50.55 | 9 | .0000 |
| Multiple | 0 | 4 | 5 | 3 | 5 | 4 | 4 | 8 | 12 | 0 | 25.00 | 9 | .0029 |
| Single Adj. * | 2 | 28 | 5 | 11 | 22 | 9 | 19 | 23 | 23 | 7 | 49.80 | 9 | .0000 |
| Multiple Adj. * | 0 | 5 | 8 | 4 | 7 | 6 | 4 | 11 | 13 | 0 | 27.06 | 9 | .0013 |
| Meter 1T Spikes Adj.* | 1 | 254 | 371 | 406 | 77 | 224 | 51 | 465 | 384 | 180 | 1089.11 | 9 | .0000 |
| Meter 2G Spikes Adj. * | 264 | 470 | 153 | 164 | 546 | 415 | 553 | 501 | 342 | 134 | 733.54 | 9 | .0000 |
| Meter 3T Spikes Adj. * | 16 | 126 | 233 | 494 | 90 | 101 | 46 | 86 | 130 | 213 | 1314.68 | 9 | .0000 |
| Meter 4G Spikes Adj. * | 463 | 596 | 692 | 594 | 705 | 509 | 688 | 581 | 296 | 95 | 668.20 | 9 | .0000 |
| Session Minutes | 46.96 | 42.46 | 32.86 | 38.95 | 37.06 | 38.65 | 54.68 | 38.33 | 51.60 | 24.86 | | | |

| Séance Session Series 2 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | $\chi^2$ | ***df*** | ***p*** |
| Single | 10 | 12 | 6 | 17 | 12 | 11 | 18 | 22 | 29 | 26.26 | 8 | .0010 |
| Multiple | 10 | 12 | 2 | 10 | 15 | 11 | 5 | 4 | 12 | 16.66 | 8 | .0337 |
| Single Adj. * | 11 | 12 | 11 | 17 | 12 | 12 | 20 | 22 | 32 | 24.50 | 8 | .0018 |
| Multiple Adj. * | 11 | 12 | 4 | 10 | 15 | 12 | 5 | 4 | 13 | 14.40 | 8 | .0719 |
| Meter 1T Spikes Adj.* | 96 | 289 | 53 | 98 | 22 | 283 | 437 | 105 | 13 | 1105.49 | 8 | .0000 |
| Meter 2G Spikes Adj. * | 372 | 195 | 278 | 134 | 267 | 138 | 304 | 75 | 276 | 327.11 | 8 | .0000 |
| Meter 3T Spikes Adj. * | 57 | 49 | 47 | 35 | 49 | 179 | 146 | 174 | 67 | 314.17 | 8 | .0000 |
| Meter 4G Spikes Adj. * | 204 | 189 | 162 | 157 | 302 | 183 | 169 | 140 | 321 | 163.76 | 8 | .0000 |
| Session Minutes | 33.88 | 38.31 | 21.80 | 37.93 | 37.46 | 36.18 | 34.86 | 37.63 | 35.08 | | 8 | |

Single = single-participant reported event; Multiple = multiple-participant reported event; Meter designation T = mains frequency EMF, Meter designation G = geomagnetic frequency.
* Data adjusted to longest session within series.

counts of our categories and spikes by the longest session in the series and extrapolated counts for sessions that were shorter than other sessions. Adjusting shorter sessions to the longest time period data, in essence, holds time constant, and thus removes the effect of time differences as a source of variance in our reported events between sessions. However, for transparency, we also performed analysis on the unadjusted counts of reports. Finally, we note for the reader that report numbers are pooled across participants for the following analysis.

### *Main Analyses*

In order to examine the degree of variation with phenomena types (i.e. single and multiple) between sessions, a series of chi-squares was conducted. Tests were performed on both the unadjusted and adjusted counts of each type of phenomena against the average of adjusted counts across sessions. Results can be seen in Table 2. Our analysis shows that with the exception of the multiple adjusted counts in Series Two, significant variability existed in single and multiple reports across sessions ($\chi^2 = 24.50$ to 55.00, $p < .05$). Essentially, results indicate significant report variability across sessions where some sessions produced a greater amount or lesser amount of reports compared with the average of reports across sessions.

In order to examine if the overall amount of EMF and GMF spikes differed across sessions, a chi-square analysis was conducted for each series of séance sessions. The adjusted count of spikes was compared against the average amount of adjusted spikes from all sessions in the series. Results indicated that the number of spikes detected by all meters for both series significantly differed from the average ($\chi^2 = 163.76$ to 1314.68, $p < .0001$). Thus, despite laboratory-controlled sources of EMF, including natural fluctuation of the geomagnetic field, the presence of 2 *SD* EMF/GMF spikes was highly inconsistent across sessions and contrary to the typical normal distribution that occurs with collecting EMF/GMF over time (see Appendix B).

Finally, we examined our hypothesis that multiple reports of phenomena would be more prevalent than single isolated reports. A series of chi-square tests were conducted with the non-adjusted counts, as time did not confound the total counts of events. For Series 1, single events were more common than multiple events (single events = 109; multiple events = 52; $\chi^2 = 49.29$, $p < .0001$). Series Two replicated the effect (single events = 137; multiple events = 81; $\chi^2 = 14.38$, $p < .0001$). Thus, our hypothesis was not supported. Despite the presence of many multiple phenomena perceptions, single reports of phenomena were the more common.

However, secondary analysis was conducted with multiple reports

**TABLE 3**
**Spearman's Rho Correlations by Séance Session for Events and EMF**

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Session | | | | | | |
| 2. Single reports | .41 | | | | | |
| 3. Multiple reports | –.03 | .33 | | | | |
| 4. Meter 1T % spikes | .12 | .07 | .24 | | | |
| 5. Meter 2G % spikes | –.01 | .36 | .14 | –.10 | | |
| 6. Meter 3T % spikes | .33 | .03 | –.03 | **.58** | **–.46** | |
| 7. Meter 4G % spikes | –.15 | –.08 | –.19 | –.10 | **.57** | –.20 |

Single reports = single-participant reported event; Multiple reports = multiple-participant reported event; Meter designation T = mains frequency EMF, Meter designation G = geomagnetic frequency.
**Bold** indicates significance at the $p < .05$ level.

to determine if common reports (i.e. the same group perception) were significantly different in number from multiple different reports (i.e. multiple people reporting different perceptions). We used this coding as a test for general contagion, where one participant will report experiences similar to another. Chi-square analysis for Series 1 (multiple same = 34, multiple different = 18; $\chi^2 = 5.67$, $p < .05$) and Series 2 (multiple same = 64, multiple different = 17; $\chi^2 = 27.27$, $p < .0001$) indicated that similar reports were significantly more common than different reports. This finding supports a classic contagion effect when multiple reports occurred, although single accounts remain more common in the overall dataset.

### *Recorded Events, EMF and GMF Spikes by Session*

In order to examine any associations between logged single or multiple reports, and overall collected EMF spikes, Spearman's Rho correlations were conducted using the individual séance session as the unit of analysis in combining both series of séance sessions in order to increase power. We note that skew or ceiling effects are somewhat negated by use of a rank-order correlation. Results can be seen in Table 3.

Results indicated no relationships between either single or multiple reports, and the raw amount of EMF spikes present per séance session ($r = -.19$ to .36, n.s.) or to session number ($r = -.15$ to .33, n.s.). However, EMF meter readings were significantly related to each other ($r = .58$, $p < .05$) and GMF meter readings were also significantly related to each other

by session ($r$ = .57, $p$ < .05). Notably, one EMF meter was significantly and inversely related to one of the GMF meters ($r$ = −.46, $p$ < .05). Thus, the above findings support that both types of meters were logging similar frequency fields, and that for one EMF meter, increases in a particular GMF meter were predictive of lower EMF scores when compared on a session-to-session basis. We emphasize that within-session relationships of EMF and GMF may be substantially different.

### *Examination of Individual EMF and GMF Spikes Present During Reported Events*

We could not entirely rely on normal distribution modeling to determine the true random probability of EMF/GMF spikes for our time-dependent binomial trials (see Methods above). Sessions varied where EMF spike percentages ranged from 0% to 11%, and GMF spikes within sessions ranged from 4% to 18%. This is in contrast to what we typically find in non-anomalous environments, where EMF/GMF data closely adheres to a normal distribution (i.e. approximately 2.5% "spikes" from either tail, see Appendix B: Table 7, Figures 1 and 2).

Thus, the entire sample of sessions within series of spikes and no spikes was used to model the random probability of obtaining a success/spike within any given second for each of our meters. However, our method of counting a spike as associated with a participant report involved spikes from either meter (e.g., EMF Meter 1 or EMF Meter 2) in one of two second opportunities (e.g., the first second or the previous second). This joint probability (EMF meters had approximately the same binomial probability, but GMF meters did not) created some problems as we were forced to fit a probability formula to field data. As joint probability models involving correlated EMF data can be inaccurate (see Appendix B), we used VBA programming to code EMF/GMF spikes in our data so that a second of time containing a success from either meter (e.g., GMF or EMF) was counted as one success. Thus, as the time periods for both series of meters were the same, we counted a hit in either meter as a hit and left the remaining failures in the dataset. This process created a hybrid series of binomial trials that represented the exact probability of a hit in either meter (i.e. $n$ = 1 $k$ = 1, $p$ = success of either meter, $q$ = failure of both meters). We then applied these joint probabilities to a binomial trial representing two trials (i.e. the second during and the second before; binomial = $n$ = 2, $k$ = 1), which allowed us to derive an exact data-driven expected random probability of EMF spikes associated with $n$ observed events.

As we stated previously, this process allows us to examine the probabilistically expected amount of EMF perturbations (albeit, small

**TABLE 4**
**Binomial Analysis of EMF Spikes Associated with Phenomena Reports by Time**

| | Experiment | | | Control | | | | Binomial |
|---|---|---|---|---|---|---|---|---|
| | % Spike | Spike | No Spike | % Spike | Spike | No Spike | Sum | *p* |
| **Tri-Field** | | | | | | | | |
| **Series One** | | | | | | | | |
| Single | 0.11 | 12 | 97 | 0.16 | 17 | 92 | 109 | **.020** |
| Multiple | 0.12 | 6 | 46 | 0.16 | 08 | 44 | 52 | .110 |
| **Series Two** | | | | | | | | |
| Single | 0.12 | 16 | 121 | 0.16 | 22 | 115 | 137 | **.037** |
| Multiple | 0.11 | 9 | 72 | 0.16 | 13 | 68 | 81 | .060 |
| **Geomagnetic** | | | | | | | | |
| **Series One** | | | | | | | | |
| Single | 0.39 | 43 | 66 | 0.32 | 35 | 74 | 109 | **.020** |
| Multiple | 0.21 | 11 | 41 | 0.32 | 17 | 35 | 52 | **.020** |
| **Series Two** | | | | | | | | |
| Single | 0.18 | 24 | 113 | 0.26 | 36 | 101 | 137 | **.005** |
| Multiple | 0.17 | 14 | 67 | 0.26 | 21 | 60 | 81 | **.020** |

Single = single-participant reported event; Multiple = multiple-participant reported event; %Spike = percentage of events associated with EMF or GMF spike; Spike = raw count of events associated with spike; No Spike = raw count of events not associated with spike. Experiment = obtained data; Control = calculated expected binomial probability of EMF/GMF spikes.

perturbations) as a function of time and the dataset of EMF itself. As complex magnetic fields are always present, this method does not concern itself with the source of EMF. Instead, it allows us to test if more EMF is occurring in conjunction with a behavior or action as a function of time. Significance using this method can also infer brief moments of either EMF variance suppression (i.e. fewer extreme readings than should be occurring by chance or variance expansion (i.e. more extreme readings than should be occurring by chance). Practically speaking, statistical significance of either represents a period of EMF conjoined with events that, by the nature of the significant finding, is probabilistically unlikely to have occurred as a function of the existing EMF dataset for the period, and thus from the standard complex EMF of the room itself.

For Series 1, there was a combined random probability of a spike in either EMF Meter 1 or 3 in either the second or second previous at 16%. The random expected percentage for GMF in Series 1 was 32%. For Series 2, the EMF expected probability of a random spike was 16%, and for GMF 25.9%. These percentages were applied toward the counts of spikes-hits of single and multiple events in Series 1 and 2 to serve as an expected random probability to test against on a binomial probability model. Results can be seen in Table 4.

Results using binomial tests indicate for EMF/GMF associated reports that all single event reports were significant (binomial $p < .05$), and two out of four multiple report spike counts were significant (binomial $p < .05$) However, the majority of these significant counts demonstrated significantly fewer numbers of associated spikes than would be expected by chance. Only single reports in Series 2 showed a significantly greater amount of spikes associated with reported phenomena ($p = .02$). Regardless of direction, EMF/GMF counts associated with phenomena were outside of chance occurrence in six out of eight analyses. We also wish to emphasize that all GMF readings were significant, whereas only two of the four EMF tests were significant. Thus, smaller perturbations captured by the EMF coils appear to show more conservative effects of the association in time between EMF and somatic reports compared with the non-coiled GMF distributions collected in the current study.

### *Transliminality, Psychosis, Paranormal Belief, and Reported Séance Phenomena*

In order to examine the role of personality and attitudes on the séance experience, single and multiple reports were summed across sessions for each participant in both séance series. We then divided the sum of these experiences by the number of sessions in which the participant was present. This method was used to prevent artificial deflation of the scores due to session attrition, which occurred for three participants. We then placed these adjusted counts, along with participant scores of paranormal belief, CAPS, and transliminality, into a Spearman's Rho correlation matrix. Thus, findings reported below represent a participant-level analysis of how personality, paranormal belief, and transliminality might predict participants reporting different types of our coded perceptions in the séance environment. The use of rank order correlation minimizes any skew or ceiling effects in the data. Results can be seen in Table 5; however, we caution the reader that sample size for this analysis is low ($n = 11$).

Results indicate that for participants, self-reports of single events were correlated with reports of multiple events ($r = .63$, $p < .05$). Thus, those who

**TABLE 5**

**Spearman's Rho Correlations of Transliminality, Paranormal Belief, Psychosis, and Participant Séance Experiences**

| Variable | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Single | | | | |
| Multiple | **.63** | | | |
| Transliminality | .09 | .33 | | |
| CAPS | .39 | −.16 | .02 | |
| Paranormal belief | .02 | −.15 | −.05 | .22 |

Single = single-participant reported event; Multiple = multiple-participant reported event.
**Bold** indicates significance at the $p < .05$ level.

were likely to report single events were also likely to participate in a report during a multiple event. Personality measures were not significantly related to any type of reported events ($r = -.16$ to .39, n.s.).

## Discussion

Our goal in the current study was to contextually examine the séance environment, both in its ability to produce anomalous (PK) phenomena, and also psychological factors such as contagion and transliminality. Although we failed to witness or create any clear cases of PK, our findings indicated that participants had a variety of subjective experiences. Likewise, we were able to demonstrate that contagion effects are evident in the séance setting. The current research also provides a more detailed examination of the role of EMF and GMF in the context of anomalous phenomena. Our findings demonstrated significant variability of EMF and GMF across sessions and exceeded what we would expect an undisturbed distribution of EMF/GMF to produce. Similar to the external haunting phenomena associated with EMF/GMF in Laythe and Owen (2013), EMF/GMF spikes were significantly associated in time with the participant's reported experiences. But the majority of significant findings showed that fewer EMF/GMF were present than chance would expect. The significant absence of EMF/GMF occurred despite higher amounts of spikes in the overall dataset. Each of these findings will be addressed in greater detail below.

### *Contagion Effects and Traits in the Séance Environment*

The roles of contagion and peer pressure appear to be complex intermediary factors in the séance environment. Our findings first demonstrated several contagion events per session, as measured by our multiple report variable. Opposite to expectations, single reports of subjective phenomena occurred significantly more frequently than reports of closely paired subjective or simultaneous group reporting events. However, examination of multiple event reports did show that similar somatic perceptions of participants were significantly more frequent than multiple reports that had dissimilar somatic symptoms. Previous work has generally demonstrated that somatic symptoms of participants matched the symptoms of the initiator (e.g., Ryan & Morrow 1992). Thus, in the current study, single reported events were more frequent. Yet, when multiple events did occur, they were more likely to mimic classic contagion effects.

Why were there more single reports of phenomena compared to contagion? Several possibilities are likely. Examining the séance from the perspective of the ***experiential source hypothesis*** (Hufford 1982, McClenon 1994, 2002) may provide some insight. This research suggests that raw experiences along with stimuli that participants receive always are interpreted and given meaning in the context of personal beliefs as well as social context. Applying this theory, we thus have the social and physical environment itself along with the individual's personal beliefs as cues to interpret somatic sensations or perceived events. Our séance environment is unlike previous environments in contagion research because of its naturalistic setting, which allows environment and multiple participants to induce suggestion and/or contagion. Previous research (e.g., Asch 1956, Lorber, Mazzoni, & Kirsch 2007) employed exclusive experimental controls, where only a single source of contagion (e.g., another participant, or the environment alone) could account for a contagion effect. Even in other séance-suggestion related studies (i.e. Wiseman et al. 2003), only a specific stimulus (in this particular case, table movement) served as the experimental suggestion stimulus. In cases where contagion is not studied in the laboratory, researchers use individual case reports after the fact, or media reporting without analysis (e.g., Radford & Bartholomew 2001).

In the current study, the environment was decorated to look like a séance room. Multiple participants were providing stimuli by voicing their own experiences, along with their previous experience and/or beliefs influencing their interpretation. Given these multiple contagion influences, it is not surprising that more single experiences were reported. Simply put, there were multiple sources of contagion and suggestion for participants to draw from. As previous research in contagion, suggestion, and confirmation bias

show (Bruder, Dosmukhambetova, Nerb, & Manstead 2012, Freedman, Birsky, & Cavoukian 1980, Lorber, Mazzoni, & Kirsch 2007), very slight degrees of stimulus are necessary to create potential suggestion or contagion (e.g., Lorber, Mazzoni, & Kirsch 2007). As Batcheldor (1984) himself states, "Some may find it difficult to adopt the necessary relaxed informal approach in what purports to be an experiment" (p. 120). Given the relaxed environment recommended by Batcheldor, multiple contagion sources, and the variety of events reported, it would be reasonable to expect both single accounts fostered by suggestion and group contagion. The séance environment may represent a "perfect storm" from which to create both.

Our examination of the relationship between an individual's reporting of different types of experiences, their scores in transliminality, tendency toward exhibiting psychotic symptoms, and paranormal belief were not significantly related to either type of event reporting. Essentially, transliminality, paranormal belief, and the CAPS measure shared little variance with single and/or multiple event reports. However, sample size for this analysis prevents us from making any definitive claim.

### *Failure to Produce Macro PK*

If we accept what Batcheldor (1984), Owen & Sparrow (1976), and psi research suggests (e.g., Lawrence 1993, Schmeidler & Murphy 1946), belief does play a large role in producing anomalous phenomena. Our failure to produce initial PK-like events to facilitate belief, by either faked or genuine means, may have been one of the reasons why PK did not occur in the current study. However, Batcheldor (1984) stated that his view "is nevertheless compatible with evidence that PK can occur without any immediate feedback" (p. 116). Thus, while we chose to not engage in trickery to facilitate PK, we do not believe that it is the sole reason PK did not occur. What is obvious is that participants within this setting will report a substantial amount of perceptions along with feelings that relate directly to the presence of a "spirit," regardless of actual anomalous phenomena.

It is also the case that our choice to use an occult-themed ritual for the séance environment may have led to a deficit in PK. Mediums of the past often employed some form of ritual, and darkened conditions could produce a spooky atmosphere. Yet, Batcheldor (1984) stated that a lighthearted atmosphere was conducive to producing PK. In our intent to produce environmental cues to facilitate both contagion and PK, we may have inadvertently reduced our chances of producing such phenomena. Spooky does seem to be a relevant adjective for participants' experiences, as our description of participants' reports shows a host of uncomfortable or unpleasant experiences during the series.

### *EMF, GMF, and Somatic Perception of Anomalous Phenomena*

As a partial replication of Wilson, Williams, Harte, and Roll (2010), we decided to examine the overall variability of EMF and GMF in context of the séance environment. We used analysis methods similar to Laythe and Owen (2013) to determine if EMF or GMF were specifically associated with subjective reports of participants in the séance environment. We believe the findings produced by the current study lead to several theoretical questions. First, our findings did show significant variability of EMF and GMF across séance sessions. In terms of these fields, it appears in some séance sessions that abnormally high amounts of EMF/GMF were present, in contrast to our experience of collecting EMF/GMF readings in this manner for the last several years. This is in contrast to the normal distribution that EMF generally adheres to in field environments, when not interfered with by additional EMF/GMF fields (see Appendix B: Table 6, Figures 1 & 2). The laboratory spaces (and meters) were placed in a fixed position, and ambient sources of EMF from the building typically would have presented themselves as either periodic or constant interference during séance sessions. Thus, we have no easy explanation for why the amount of spikes in some sessions rose above 18%. As we have argued previously (i.e. Laythe and Owen 2013, Laythe 2016), EMF/GMF variation must be a function of either the placement of the meters, a change in reflective or absorptive materials, or the generation or change in the field(s) of EMF/GMF itself. The first two are partially controlled for in our current study (albeit without magnetic shielding), leaving the latter as a more viable explanation. However, because EMF shielding was not employed, we can make no definitive claim that the change in EMF/GMF at the time of participant reports are "emanations" from either the participants or alleged paranormal entities. We only claim that the relationship in time between somatic accounts and small perturbations in EMF/GMF is present and similar to previous work with different paranormal phenomena under study (Laythe & Owen 2013).

Batcheldor (1984) claimed, with his greater experience in these matters, that "physical side effects which sometimes accompany PK, such as electrical or magnetic effects, may not necessarily be essential features of the PK process (and thus clues to its nature) but may themselves be created by PK through overt or covert expectation" (Batcheldor 1984:107). Thus, it seems that in conjunction with Wilson, Williams, Harte, and Roll (2010), these EMF/GMF readings may have been a side effect of our séance process.

When individual reports of phenomena were examined for spikes of EMF/GMF, results showed that the majority of events contained significantly less EMF/GMF spikes than expected by chance. The exception

to this finding was single reports from Series 1, where significantly greater amounts of EMF/GMF spikes were associated with single reported events. One way to look at this finding is that EMF/GMF magnitude was somehow dampened during these report periods. This explanation seems particularly likely with GMF readings. Spikes were abundant and substantially greater than what GMF typically generates as a normal distribution (i.e. 1% to 5%, Appendix B).

To our knowledge, this is the first research demonstrating any type of relationship between specific EMF–GMF spikes and subjective experience. There is no reason currently known to expect a physical environmental variable such as GMF (or EMF) to change as a function of a participant's perception or experience. It is also the case that the sustained fields necessary to create a "sensed presence" (e.g., St.-Pierre & Persinger 2006) do not appear likely given the abundance of individual spikes (but highly varied GMF) from session to session. We can exclude a mundane explanation, which would involve a person outside the laboratory repeatedly creating a relatively powerful magnetic field on the days and times of our study. Thus, we indulge in two potential explanations.

From a traditional parapsychology perspective, a simple explanation is that some of our members had some psychic ability. Thus, similar to RSPK cases (i.e. Roll & Joines), a byproduct of these somatic perceptions or psychic influence is the (albeit weak) production or dampening of EMF/GMF. As we mentioned previously, both Batcheldor's (1984) and Wilson, Williams, Harte, and Roll's (2010) findings might bolster that interpretation.

On the other hand, previous work has associated three standard deviation EMF and GMF spikes with anomalous haunting phenomena that was external to the participant, and vetted against multiple camera and audio sources under controlled conditions (Laythe & Owen 2013). In other words, vetted paranormal phenomena appear to be associated with EMF/GMF spikes as well. However, our previous findings with external phenomena showed significantly greater amounts of EMF/GMF, and not significantly less. Regardless, some of what would be explained as purely internal psychological experiences may somehow be entwined with the "survival hypothesis." Ergo, paranormal sources are possibly giving off small perturbations of EMF/GMF as some type of physical condition of their existence. Although this theory is highly speculative, the design of the study was the attempt to contact the dead. Given our previous findings, and the apparent intelligent behavior of some of the evidence collected by Laythe and Owen (2013), we posit that the "survival hypothesis" is also a potential explanation for the extreme variability in EMF/GMF and time associations with EMF/GMF spikes. As three-fourths of our tests for

reports were significantly different from chance association with EMF/GMF spikes, replication of these findings may serve as evidence that some spiritual processes may be physically measurable in the form of small time-synced variation in electromagnetic fields.

However, both of the above explanations for the EMF/GMF and subjective experience relationship are speculative, and independent replication is very much warranted. What is important is that these findings represent a growing body of research that demonstrates a relationship between a known physical variable (EMF) and perceived anomalous experience. Although externally captured PK was not produced in the current research, the association of EMF/GMF with somatic events suggests that other physical variables may influence what we would psychologically interpret as psychosomatic or contagion events. As such, we hope the current work spurs other researchers to replicate and extend this work with further methodological rigor.

### *Limitations and Future Work*

There were several limitations to the current research. First, only 9–10 sessions were run in each series, unlike Batcheldor (1984), Wilson, Williams, Harte, and Roll (2010), and Storm and Mitchell (2003), who ran at least fifteen (or many more sessions) in their individual groups. The limited number of sessions may have contributed to the unsuccessful production of PK. Although Batcheldor (1966, 1984) emphasizes belief as the primary variable in PK production, familiarity and repetition were indicated as important variables that facilitated belief. Nine to ten sessions may not have been enough time to create the belief and familiarity for PK effects. The power of analysis between sessions or within participants was limited because of our small sample size. Thus, findings for our correlations should be considered suggestive only. Hopefully, in future research enough séance series and sessions can be conducted to obtain a more powerful analysis between subjective events and personality. We would also like to include more participant measures to capture potential traits, personality, or attitudes that might correlate with reporting subjective events. Although we were interested in transliminality, other researchers would be right to insist on broader measures such as cognitive style, absorption, social cognition, empathy, and suggestibility. However, running sufficient sessions of this design, with enough participants to have enough power to reliably conduct correlations, would be a massive undertaking. We might also suggest pre- and post-survey assessment after each session to determine the psychological impact of each session, and the subjective events personally experienced by the participant.

Our study was not a strict replication of the Batcheldor (1966,

1984) style sitter groups and should be considered more of a replication of Wilson, Williams, Harte, and Roll's (2010) and Owen and Sparrow's (1976) accounts of séance groups. It is also the case that while some of our participants were experienced with the paranormal, others were relatively naive about the paranormal. Batcheldor warned readers in his works that doubts, and both belief in the participant creating PK and the witnessing of PK, can inhibit the production of PK phenomena (Batcheldor 1966, 1984). We hoped that by creating a dark, séance-decorated environment, as well as creating a common ritual to facilitate the mood of a séance, at least ownership resistance would be minimized. Whereas several of our participants were previously experienced with PK or anomalous events, it seems possible that some members maintained secret doubts about the process. The current research did not try to facilitate fake events, although true to Batcheldor's suggestions individual sessions were friendly and rapport was quickly created among group members. We would suggest that the presence of contagion surrounding each session represents some proof that our environment created a unified belief-perspective for participants witnessing anomalous events. On the other hand, multiple verbal reports may have at the same time created witness inhibition, despite a congenial environment.

Although a fictitious spirit was prepared for participants, both groups chose to abandon this fictitious spirit for a general open séance visitation policy of bringing forth anything or anyone who wished to communicate. As reported previously, there was no shortage of reported subjective phenomena from this technique, but also no camera-recorded evidence of external PK phenomena that would meet skeptical muster. Thus, future workers in this area may want to work with participants more beforehand to create a unified "spirit guide" or "contact" that participants can work with throughout the sessions.

We did not employ magicians to examine the sessions. We openly admit this is a potential risk; however, the likelihood of participants (i.e. known, pro-paranormal students, and naive college students) conducting fraud was limited by camera placement under the table. Unfortunately, none of the events that occurred over both series were anomalous enough to possibly mandate the use of a stage magician.

Previous accounts by Batcheldor (1966, 1984) have suggested that the mere presence of cameras and recording devices inhibits the production of anomalous events. This is a double-edged sword, as better recording of the laboratory environment is the only way to verify these phenomena. Although the laboratory was dark, and the cameras were placed unobtrusively, we may not have obtained genuine PK because of the presence of these

devices. We have no suggestions to get around this problem, save future research creating a laboratory space with completely hidden devices, and using subterfuge with participants regarding their recording. As we did find what we believe to be several significant effects within the current research, we believe that continued monitoring of these phenomena is warranted psychologically.

Finally, some controversy may remain around our method for analyzing EMF (Laythe 2016, Maher 2016). Previous researchers have questioned our procedure, namely focusing on potential sources that could produce EMF spikes, or the relatively small EMF perturbations that the current study and Laythe and Owen (2013) show. Questions have also arisen over our purposeful choice not to use baseline readings to compare EMF against (e.g., Maher 2015, but also see Laythe 2016, Maher 2016). We hope our explanation here and in Appendix B clears up some of these misunderstandings.

The essence of our mathematical process is not really about EMF specific magnitude or source, but the mathematical conjunction of a behavior plus probabilistically unlikely amounts of EMF at a discrete point in time. Aside from weaknesses in baseline tests with field EMF due to receptive meters, we humbly posit that the complexity of the field, or the source of a perturbation is accounted for in this binomial/distributional method. Separating individual sources of EMF/GMF ***may*** account for where small or large EMF perturbations come from. They fail, however, to explain why EMF suppression or expansion is ***significantly*** occurring in conjunction with a behavior associated within a discrete period of time. While the current research was conducted in a complex series of fields, Laythe and Owen (2013) was not, and they had similar findings.

As one thoughtful reviewer suggested, perturbations in EMF/GMF increase as the degree of sensitivity for the measuring device is increased. In other words, more EMF/GMF spikes are likely to occur as the metric of measurement becomes smaller. We do not disagree, and again emphasize that the measurement of EMF in particular (but not GMF) was restricted to the 0–1mg range due to the coils used. However, our binomial method can account for any degree of successes or failures in the data to create an accurate probability to test against (see Appendix B). A more practical point from the existing data is that the uncoiled GMF meters, which were not restricted to only small perturbations, duplicated the restricted meters' findings (and had greater, not less, variability in terms of spikes). The restricted meters were less successful in terms of statistical significance, not more.

In our view, EMF magnitude changes, whether small or large, should not change as a function of subjective reports in a séance at a specific time.

EMF should not, in theory, change as a function of anomalous captured phenomena in an electricity-free zone at specified times (Laythe & Owen 2013). There should be no time-dependent relationship present with this known and extensively studied energy. Yet in the present research, previous research, as well as research we are currently in the process of writing up, there are time-dependent significant relationships of phenomena and EMF. Our best theory is that "something" is minutely perturbing the EM field to either suppress or expand EMF variability beyond chance. We agree with others that this source, as of yet, is unknown and the meaning of these associations is not yet clear. But we would be remiss to not remind readers that previous research (i.e. Joines, Baumann, & Kruth 2012) has made a case that small amounts of energy in the EM-field can potentially contain a large degree of information.

Finally, a growing trend of research (see Palmer & Millar 2015 for a review) focuses on potential PSI-related experimenter effects. Whereas the principal investigators were aware of reports of somatic events, neither the researchers nor participants were aware of specific EMF readings during the experimental data-collection process. As the current protocols were not fully blind, there remains the possibility that the investigators unconsciously affected EMF or GMF readings post hoc. Thus, in future studies, we hope to create randomly generated time-stamps to add to participant reports, and let blind coders associate EM readings with both real and bogus reports. However, even with these protocols in place, the true metric of these findings, given the recent experimenter effect findings, is independent replication of these types of studies.

### *Conclusion*

Despite the above weaknesses, the current study represents the first series of séance data to demonstrate contagion and suggestion effects within the séance environment. More importantly, this is the first research to our knowledge that shows a significant relationship between time-dependent electromagnetic fields and reports of personally subjective perceptions of anomalous phenomena. While by no means definitive, the current research adds to a body of growing literature where electromagnetic fields are associated with what is perceived as paranormal activity.

## Notes

[1] We would also note that purported divine names (in this instance, Judaic names of God, or archangels), or as referenced in grimoires, "barbarous names of power," were removed from these rituals, in order to not offend

or disturb individual religious sensibilities (see Regardie [2010] for a contextual description).

[2] We allowed variability in these exercises, in that some sessions allowed participants to try lifting the table with one or two fingers, whereas in other sessions requests for rocking the table were the focus.

[3] We would add that previous reviewers have suggested random sampling of the EMF data to create a sample probability to test against. We engaged in this process in the research above as one preliminary method for creating a viable accurate random probability. After running several series of approximately 600 trials, it became apparent that the random sample always closely varied around the random binomial probability of the entire dataset, thus validating the use of the overall sample probability as an accurate random probability.

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## APPENDIX A: Meditation and Séance Guide

### *Opening Meditative Exercise*

1. Close your eyes.
2. Slowly start to take deep breaths. Find a rhythm that is comfortable for you.
3. Imagine as you exhale that your muscles are relaxing. With each exhale, imagine yourself becoming more and more relaxed.

*For the next exercises, students need to visualize themselves or the room in their mind. This may take some practice, but allow yourself to use your imagination. See the images described below as clearly as possible in your mind.*

### *Establishing the Pillar*

1. For our exercise we will visualize each sphere as white but you can practice at home using the colors.
2. Kether (White Sphere above Head). After a few minutes of relaxation, imagine a sphere of brilliant white light just above your head. Then imagine a shaft of light descending from the white sphere above your head to a black sphere at the nape of the neck.
3. Tiphareth (Golden Sun Colored Sphere over the heart). Bring a shaft of light down from your neck center to the center around your heart. Form a sphere of brilliant sunshine there.
4. Yesod (Light Purple Sphere over genitals). See the shaft of light descending from the heart into the Yesod center in the genital region. Imagine a sphere of light purple light formed there.
5. Malkuth (Green Sphere over the feet). Visualize the shaft of light descending from the genital region into a sphere at the center of the feet and ankles.
6. Visualize all four spheres in your mind and the Middle Pillar complete. See a body of white light surround you.

### *Opening The Door*

1. Join hands with other participants.
2. Everyone says together, "Create the circle." In your mind, see a circle of bright

electric blue light surround the room. Focus on this for 30 seconds. When you are done, open your eyes and wait for the other members to open their eyes. When all eyes are open, say the words together, "The circle is formed."

3. Everyone says together "Create the Door." In your mind, see a large wooden door, its frame is old, but the wood is sturdy. In the middle of the door is a symbol of ***the crescent moon and it is silver***. See that the door has a bar across it and is closed. Locked. Focus on this door in your mind. When you have clearly visualized the door, open your eyes. Wait for other members to open their eyes as well. When everyone has opened their eyes, say together, "The door is formed."

4. Everyone says together, "Open the door so that others may visit." Close your eyes. See the locked closed door in your mind, the symbol of the moon on the door. In your imagination, see the door becoming unbarred, and unlocked. Then see the wooden door opening slowly. In the doorway is fog filled with light purple light. In your mind, understand that this is the door that your spirit will come through to visit. When you have done this and see the door open and filled with fog and purple light, open your eyes. Wait until all members have opened their eyes. Say together, "The door is open."

5. Everyone says together, "Let our visitation begin."

### *Closing Meditation*

1. Everyone holds hands, and says "We now end our visitation."

2. Everyone says together, "We close the door together, let there be peace between us all." Everyone closes their eyes, and sees the open door. With your imagination, you slowly close the door, lock it, and place a bar across it. When you are done seeing this, open your eyes. When everyone's eyes are open, say "We have closed the door, the visit is over."

3. Everyone says together, "We open the circle." Everyone closes their eyes, and sees the circle of electric blue light expand and grow so that the entire room is filled with electric blue light. Then see this light expand and dissipate into the distance beyond the room. When you have done so, open your eyes. When everyone has opened their eyes, say together "The circle has dissipated."

4. Separate hands. Close your eyes and see the spheres within your body. Focus on your breathing. With each exhale, feel yourself being more and more relaxed. Do this for two or three minutes and open your eyes. When everyone has opened their eyes, say "Our session is concluded."

## APPENDIX B: A Mathematical and Conceptual Verification of Binomial/Distributional Modeling for Physical Variables

In our other work (this article before the appendices), we have used a novel mathematical approach to examining the relationship between electromagnetic fields (EMF), geomagnetic fields (GMF), and anomalous phenomena. The method that we have used in this research and in previous work (Laythe & Owen 2013) has been the result of several years of experience in our attempt to collect EMF/GMF readings in the context of paranormal phenomena in the field. One concern we had early on was our inability to completely control incoming sources of EMF/GMF. Magnetic shielding

is simply not practical for collecting data in the field over many hundreds of square feet. After consulting physicists and verifying our modeling with mathematicians, we developed a simple binomial model that has its successes and failures based on the distribution of EMF/GMF scores, which in turn becomes time-dependent. By use of this model, we are able to mathematically account for contaminating sources of EMF/GMF, and apply statistical tests that are securely grounded in the actual collected data.

However, several reviewers (rightfully so) as well as other social scientists have had concerns over the viability of this model for making inferential statistical claims. The majority of these claims involve the nature of collecting field data as opposed to single-source, laboratory-controlled data of EMF/GMF magnitude. Concerns over the source of the EMF/GMF also are often a point of contention. We provide this Appendix B with some data to prove the applicability, and in some cases superiority, of this modeling technique.

There are three datasets of EMF from which we verify the claims in the current work and that serve as proof of the methods employed. EMF data were collected in two locations: a residential location our organization was asked to investigate (although no evidence of anomalous activity was found), and a (to our knowledge) regular residential location from which two sets of data were collected. Data was collected with the use of 3-axis magnetometers constructed by the author using microprocessors and data-logging components of Arduino design. These meters collect EMF data at the 0 to 8 Hz range (GMF) at a rate of two samples per second, on three axes, and were collected as raw volt input on a range of −10,000 to 10,000. The resulting data provide 9 datasets (3 separate sets of data with 3 axes each: x, y, z), to analyze for the purpose of the current work. We would state that the data presented here are typical of our experience in the collection of many EMF/GMF datasets over the last several years.

### *The Behavior of EMF in the Field*

For several reasons, the practical meaning of EMF magnitude readings and statistical tests of such are very limited and highly prone to erroneous statistical significance in the field. Most of these issues are a function of several misunderstandings about EMF field data and the equipment used to collect it. First, EMF meters are receptive meters. They register a particular EMF reading at the exact location the meter is placed as a function of the EMF received at that location. Second, EM fields decay at an exponential rate. Essentially, this translates to a 1,000 mg field registering 100 at a1-foot distance, 10 at 2 feet, and 1 at 3 feet (Thide 2004, Tipler 1987). This is an important aspect of EM fields that is often misunderstood. A power line carrying $10^{15}$ kilowatts of power, when converted to gauss, will typically register less than one gauss within 30 feet or so of distance, and one milligauss with three additional feet. Third, most meters, even when very sensitive, have a detection diameter of about 8–10 feet (i.e. 5 ft. in any direction from the meter). Fourth, interference in EMF readings from EM waves (projected as transmissions of energy, as opposed to a field) have their magnetic component greatly reduced.

The electrical force compared with the magnetic force of a carrier wave is a ratio upward of more than 200 to 1 (Thide 2004). As such, transmission waves (aside from

the fact that commercial EM-spectrum transmissions are at a much higher frequency in the EM spectrum) create little to no magnetic interference for the average receptive EMF meter (Thide 2004, Tipler 1987, World Health Organization 2016). Most carrier wave interference is so magnetically weak it simply forms the EM background noise within a measured area.

### *The Distribution of EMF over Time as Approximately Normal and Use Toward Creating Binomial Probabilities*

In contrast to controlled environments of engineering or physics, a precise value of EMF is relatively meaningless without the context of the distribution of EMF/GMF collected in field environments. In our current state of affairs, social scientists examining anomalous phenomena are not attempting to solve a single equation or determine a specific vector of EMF inside a laboratory.

To make this case, several facts must be posited. First and foremost, EMF, when collected over time, naturally varies around a central magnitude value. EMF readings are typically averaged by most meters to approximate an accurate reading. Thus, most datasets of EMF will typically form a normal distribution (i.e. Open Stax College 2013). Although Braithewaite (2004, 2006) demonstrated the EMF-normal distribution claim, we wish to conclusively demonstrate that EMF data collected over time forms an approximate normal distribution. Thus, we provide *p–p* plots of EMF data collected for the purposes of this paper (see Figures 1 & 2). Means, standard deviations, skew, and kurtosis data are provided in Table 6.

Per Table 6 and Figure 1, it can be seen that the vast majority of our EMF distributions show an approximately normal curve. However, per Figure 2, skew (e.g., movement away from central tendency) was significant ( >1.96) in 2 out of 9 datasets (one exceptionally so). Kurtosis (e.g., greater area than expected in the tails per a normal distribution) was significant ( >1.96) in 3 out of 9 datasets (two were extreme readings, $z_1$ = 13,503 and $x_3$ = 6,775). Examination of Figure 2 shows that the $z_1$ dataset has outlier readings in the right tail, and $x_3$ has extremely narrow variability. While generally normal, it should also be apparent that the variance of a particular series of collected EMF readings can be radically different from other distributions of EMF. These distributional differences can occur both from the same meter or a different meter in a nearby location (i.e. another room in the same house).

This leads us to our first primary point. Our method for modeling EMF in a time-dependent binomial fashion rests first on the distribution created by EMF/GMF collected over a series of time. From the data provided here, one can see that additional interference from theoretical additional B-fields will adjust variability in the distribution, typically expanding it in one tail or both. As our binomial modeling uses standard deviations to determine a success or failure (previously in Laythe & Owen 2013, ±3 standard deviations, and ±2 *SD* in the current work), the probability of success in a binomial model will increase or decrease as a direct function of variability in an EMF/GMF distribution. As such, large amounts of variation create more successes and higher random dataset probabilities; lower variability creates fewer successes and smaller random dataset probabilities to test against.

Second, the probabilities generated from binomial coding in this manner do not rely on hypothetical models or distributions. Binomial coding of success and failure

**TABLE 6**
**Descriptive Statistics for Three Sets of EMF Data**

| | Axis | *n* | Average | Low | High | *SD* | 2 *SD* High | 2 *SD* Low | Kurfosis | Skew |
|---|---|---|---|---|---|---|---|---|---|---|
| **Meter 1** | | | | | | | | | | |
| | x | 24909 | 223.31 | 217 | 230 | 1.60 | 226.50 | 220.12 | −0.03 | −0.05 |
| | y | 24909 | −277.17 | −283 | −271 | 1.57 | −274.04 | −280.30 | −0.04 | −0.02 |
| | z | 24909 | −478.79 | −487 | −467 | 1.82 | −475.16 | −482.42 | 13503.16 | 99.71 |
| **Meter 2** | | | | | | | | | | |
| | x | 21136 | 19.73 | 13 | 26 | 1.56 | 22.85 | 16.60 | 0.01 | −0.03 |
| | y | 21136 | −120.00 | −127 | −111 | 1.65 | −116.69 | −123.30 | 0.27 | 0.17 |
| | z | 21136 | −554.81 | −562 | −542 | 1.74 | −551.32 | −558.29 | 3.02 | 0.85 |
| **Meter 3** | | | | | | | | | | |
| | x | 26593 | 5.24 | −253 | 12.00 | 2.23 | 9.69 | 0.78 | 6775.38 | −58.48 |
| | y | 26593 | −205.47 | −212 | −199.00 | 1.63 | −202.21 | −208.72 | 0.00 | −0.03 |
| | z | 26593 | −546.88 | −557 | −535.00 | 1.71 | −543.45 | −550.30 | 1.04 | 0.16 |

from any distribution (normal or otherwise) creates an accurate testing probability based purely on the data itself.[3]

Skew or kurtosis becomes irrelevant as greater successes above the *SD* demarcation add to the overall random probability of a defined spike occurring.

Finally, even if measurement errors occur from the type of meter used, the number of axes examined, or as suggested by some an examination of small perturbations (which we do account for), so long as the data are collected in the same manner (i.e. with the same meter types in the same way), the dataset will reflect a consistently measured body of EMF data. So long as the laws of probability hold, one may see an increase or a decrease in successes to test against per the defined demarcation. Logically, a data-driven probability is a data-driven probability. So long as testing relies on the data collected, measurement type or specificity will not affect the test against randomness itself. This type of statistical assumption is no different from any assumptions made from a dataset of personality traits, rainfall, or really any other set of readings. At a fundamental level, the measurement of variables dictates the outcome of the results.

### *Binomial Time-Dependent Coding*

The goal of the remainder of this Appendix B is to demonstrate how researchers can test time-dependent readings of EMF (or any other time-dependent environmental variables, e.g., temperature, gravity, infrared light, and so on) with participant

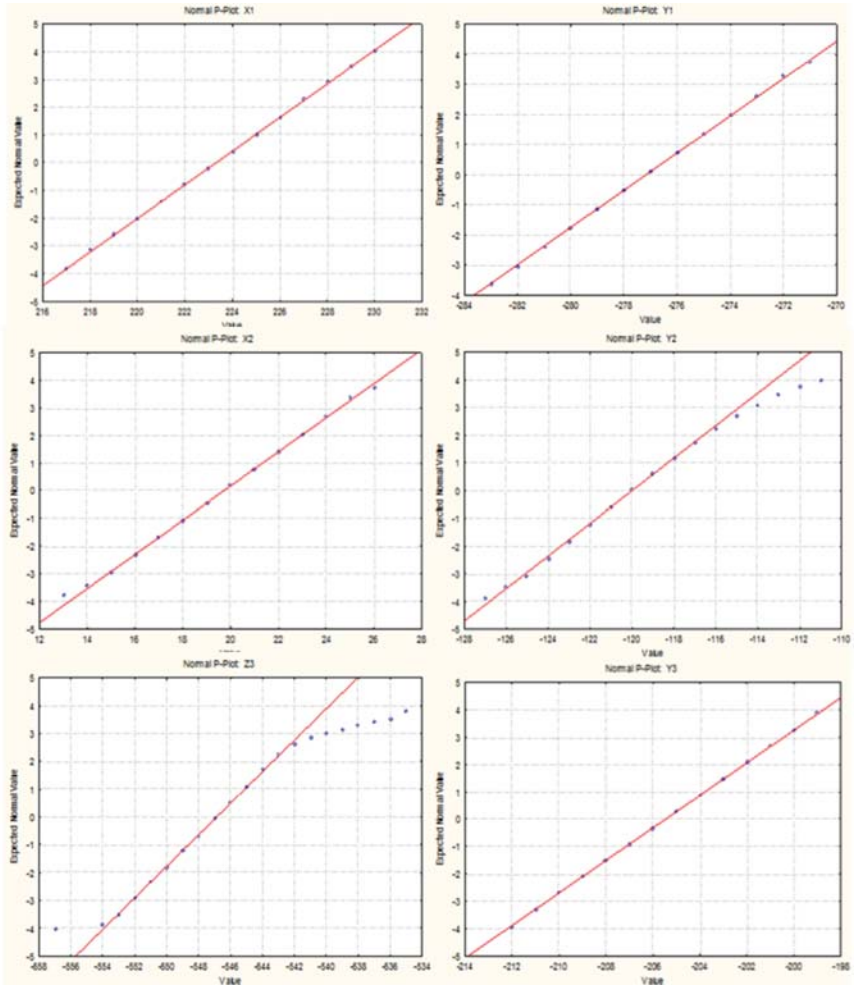


**Figure 1. Six probability plots of a normal distribution of EM field data.**

behaviors. This method can be applied to any observed event that has been time-stamped with a collected EMF distribution. The procedure described takes the initial probability from the raw distribution of EMF, and subsequently remodels that distribution into successes and failures. Thus, an initial binomial trial (for clarity, often referred to as Bernoulli trials [Rice 1995]) based on the EMF distribution is created. We then subsequently assign–divide a set amount of EMF readings within a set period of time as a series of time-dependent binomial trials. We provide a generic example below using the existing data from the *x*-axis of Meter 1 to take the reader systematically through the process.

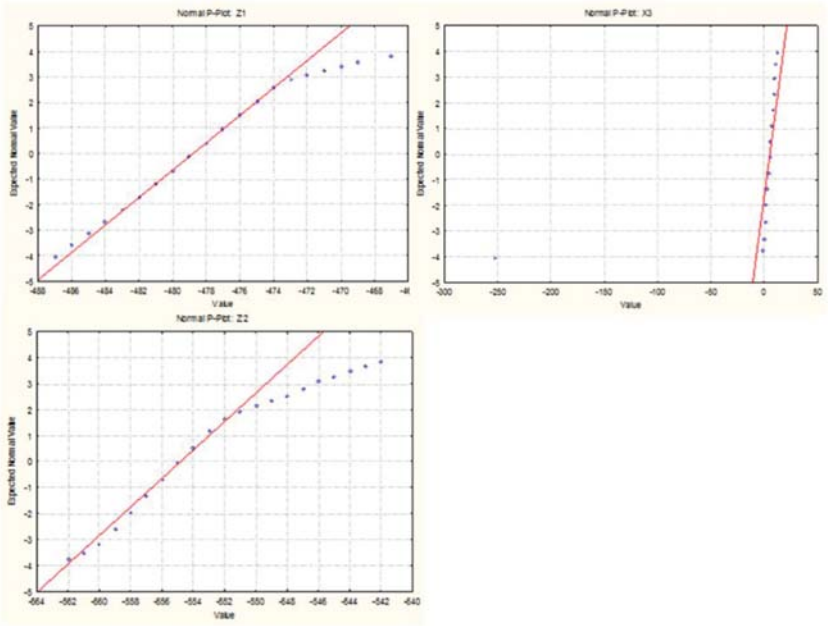


**Figure 2. Three probability plots showing high skew and kurtosis for EMF data.**

EXAMPLE: A researcher desires to examine whether sufficiently high EMF occur at the specific times a participant reports an experience. An EMF meter is placed in a room with data-logging capacity, sampling EMF at 2 samples per second. Data are then collected for 3.45 hours ($n$ = 24,909). An EMF spike is defined as any EMF score above or below two standard deviations. Approximately 1.05% of scores meet this criterion ($n$ = 262). 80 subjective experiences are reported by the participant, and their time logged in correspondence with the scores of EMF received at the time. The researcher wishes to know (a) what is the random expected amount of associations that would occur with 80 experiences, and (b) how does the researcher test for a non-random association (i.e. greater than chance occurrence with EMF experiences).

The very first step in testing time-dependent trials is to obtain a binomial probability from the initial distribution of EMF scores. This is done by assigning a critical value regarding what score in the distribution will count as an abnormally high reading in the context of the distribution. We have previously used both ±2 *SD* in the current work, and ±3 *SD* (Laythe & Owen 2013) as critical value criteria. Once this cutoff criterion has been established, the data from the EMF distribution are converted into a nominal variable by coding scores above and below the cutoff as 1 (e.g., spike), and scores within the demarcations as 0 (e.g., not spike). It is important to include at this point that the shape of the distribution of data is now irrelevant. By nominally coding the data, an exact percentage of random successes or failures is obtained.

### *Conversion to Binomial Distribution*

The binomial probability distribution provides a means of testing a series of successes or failures where a probability is desired for *k* successes out of *n* number of trials (Myers & Well 1995). The mass probability function of the binomial distribution is provided below:

$$f(k;n,p) = \Pr(X = k) = \binom{n}{k} p^k (1-p)^{n-k} \tag{1.1}$$

*k* = the probability of obtaining a set amount of successes out of *n* trials (e.g., 3/10 successes)
*n* = the number of trials
*p* = the established probability of obtaining a single success
*q* (1 – *p*) = the probability of obtaining a single failure

Although not traditionally thought of in this way, by coding our original EMF distribution to isolate cutoff scores (per the example 2 *SD* scores), the approximately normal EMF distribution (using $x_1$ as an example) can be accurately remodeled into 24,909 time-dependent binomial trials, where *k* = 1, *n* = 1, *p* = .01, and *q* = .99. As there is only one sample selected at a time, the odds of obtaining a spike from only one selection is exactly .0105.

### *Can EMF Safely Be Modeled Binomially and Are Probabilities Reliable?*

Previous concerns have rightfully been raised that EMF/GMF scores are not truly independent of each other. We completely agree. Because EMF/GMF is a wave function, current readings may be related to upcoming readings. Similarly, contamination from other EMF sources can occur, and other environmental variables will affect readings as well. Luckily, binomial testing does not require independent data. An examination of any mathematics textbook will provide examples of complex dependent behaviors (i.e. seeing a car pass by a window [Rice 1995]) being tested with binomial probabilities. For binomial tests, independence is placed in the testing sample, and not as an assumption of the independence of the data being observed to derive an initial population or sample probability (see Myers & Well 1995 and Solomon 1987 for similar examples).

In theory, any behavior or action can have a probability placed on it, given sufficient sampling of the observed behavior. The theoretical assumption is that the probability is reliable only if a researcher randomly samples the trial under the same conditions. In the case of time-dependent binomial trials, so long as the time periods are not pre-selected by researchers, or predetermined in another manner, the sample of trials that a researcher wishes to test is considered a valid sample to test against the population random probability.

This is a crucially important point for two reasons. First, the binomial tests we have employed can only tell us if a probabilistically unlikely number of successes (i.e. defined EMF spikes) or lack of successes have occurred for a given series of observed behaviors. It serves as a general test of association, where statistical significance indicates more or less EMF than there ought to be by reasonable chance. Related to this point, although our method mathematically accounts for all incoming EMF sources, our tests can say nothing of the origin of the EMF/GMF collected. We have to rely on common sense, the exponential decay rate, and the environment that data are collected in to make assumptions or claims in this regard. Second, our binomial method alleviates any violation of assumptions of independence in EMF. Yet conventional statistics used in previous work with EMF are also held to the independence assumption of data.

As such, this condition has been violated multiple times across multiple authors by the use of conventional *t*-tests or means tests.

### *Proof of a Reliable Random Probability from EMF/GMF Data*

Obtaining a probability for a binomial trial in this manner assumes that the overall dataset of EMF, appropriately coded, serves as an approximate population random probability. This overall probability for obtaining a success–failure is then suitable to use as a population probability for any given series of time-dependent trials selected by the researcher. In case the use of the overall dataset as a population probability for trials is questioned, we provide 300 random trials (with use of the Excel RAND function) of 3,000 and 6,000 data points taken from each set of EMF data, where $n = 1$ and $k = 1$. Results can be seen in Table 7. All sets of randomly selected data taken from each EMF dataset closely approximates–varies around the original datasets of EMF, and the probability obtained from said datasets. Specifically, the averaged difference from the random sampled probabilities and the original EMF datasets is .2% for the 3,000 samples, and .3% for the 6,000 samples. This demonstration serves as evidence that the initial probabilities for binomial trials should be taken from the datasets themselves. Given enough samples, random sampling to obtain probabilities will eventually mimic the probability of the original EMF dataset.

### *Expanding the Binomial Model to Create Binomial Trials Dependent on Larger Periods of Time*

In order to model a series of time-dependent, binomial trials, we have to take into account time and readings collected by second. This is done by taking the amount of samples collected per second, and then determining the duration of each EMF trial so that a distinct period of time is associated with the occurrence of events being collected.

For the purposes of the example presented previously, let us set a 5-second window in which an observed event does or does not occur. As 10 readings are taken over a period of 5 seconds, per our example, the binomial coding of EMF data is now nested into binomial trials. Using $x_1$ as an example, $n = 10$ (10 success–failure opportunities), $k = 1$ (the amount of successes required by the researcher given $n$ trials), $p$ converts to .104 (representing the inflated probability accounting for 10

**TABLE 7**
**Random Samples from EMF Data Demonstrating Probabilities from Original EMF Sample**

| | | Original Data Binomial Conversion $n = 1$, $k = 1$ (2 *SD* score) | | | Random Samples Binomial Conversion $n = 1$, $k = 1$ (2 *SD* score) | | | (2 *SD* score) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *n* | Success | Binomial *p* | Total *n* | Success | Binomial *p* | Total *n* | Success | Binomial *p* |
| **Meter 1** | | | | | | | | | | |
| | x | 24909 | 262 | 0.0105 | 3000 | 30 | 0.010 | 6000 | 57 | 0.0095 |
| | y | 24909 | 591 | 0.0237 | 3000 | 63 | 0.021 | 6000 | 110 | 0.0183 |
| | z | 24909 | 716 | 0.0287 | 3000 | 74 | 0.025 | 6000 | 139 | 0.0232 |
| **Meter 2** | | | | | | | | | | |
| | x | 21136 | 542 | 0.0256 | 3000 | 53 | 0.018 | 6000 | 128 | 0.0213 |
| | y | 21136 | 667 | 0.0316 | 3000 | 83 | 0.028 | 6000 | 142 | 0.0237 |
| | z | 21136 | 575 | 0.0272 | 3000 | 72 | 0.024 | 6000 | 136 | 0.0227 |
| **Meter 3** | | | | | | | | | | |
| | x | 26593 | 12 | 0.0005 | 3000 | 2 | 0.001 | 6000 | 1 | 0.0002 |
| | y | 26593 | 329 | 0.0124 | 3000 | 32 | 0.011 | 6000 | 63 | 0.0105 |
| | z | 26593 | 582 | 0.0219 | 3000 | 59 | 0.020 | 6000 | 105 | 0.0175 |

*n* = samples at 500 ms; Success = number of obtained 2 *SD* successes; Binomial *p* = binomial probability derived by successes divided by sample.

opportunities for a success), and *q* becomes .896. As we have now nested every 10 readings into one binomial trial, the total EMF dataset is divided by trial *n* to provide the total number of 5-second trials (i.e. 2,490.9 5-second trials where each trial has a random $k = 1$ success probability of .104).

From the above, it should be apparent once the probability of our time-dependent binomial trials are determined, that the probability of obtaining a success from one binomial trial determines the probability of obtaining success for *n* number of binomial trials randomly selected from the dataset. We know for this particular trial the odds of success (in the case of $x_1$ $n = 10$, $p = .104$). This probability can now be used for ***any n number of 5-second trials*** where we wish to test the random occurrence of EMF in association with time-synced events.

EXAMPLE: As above, our researcher has found 80 events that have occurred concurrently within five seconds of his or her EMF dataset. He or she wishes to know the probability of an EMF "spike" in any 5-second interval corresponding to the events recorded. An EMF spike is defined as one 2 *SD* reading per 10 readings ($n = 10$, $k =$

1). Using $p = .104$, from our $x_1$ Meter 1 dataset, the expected random amount of EMF spike periods should be approximately 8 trials out of 80.

Thus, once the initial distribution is divided into periods of time representing *n* independent binomial trials, the probability of success from one trial can be multiplied across *x* trials (representing the amount of time-synced observations you have). Successes within those selected 5-second trials, if random, ***should not significantly differ*** from the number of trials times the binomial probability of success of one 5-second trial.

### *Deriving an Expected Probability from Multiple Sets of EMF/GMF Data*

In some cases, we have examined events associated with EMF that were collected across several meters (Laythe & Owen 2013). We have also had to account for successes that occurred from more than one EMF meter in a small enclosed area. Regarding the former, it is often the case in field settings that observed phenomena or participant behaviors may occur in different metered locations, and thus be dependent on different meters' distributions of EMF data.

With regard to the latter, the issue of allowing more than one meter in the same space creates a mathematically complex issue. As was the case in the current work, two separate distributions of meters were used against one set of observations. As such, the joint probability of success within a binomial trial of either meter has to be determined (*p* Meter 1 + *p* Meter 2).

Unfortunately, meters in close proximity tend to significantly correlate with one another, creating potential dependence. Yet, correlation coefficients are an estimate of shared variance and do not necessarily lend themselves to calculating the exact degree of dependence between the meters. It is likewise the case that an approximate model guess of the joint probability does not create a sense of certainty with the resulting binomial tests.

Thus, the solution is to recode success and failures of two datasets into one dataset of binomial trials, where a success of Meter 1 or Meter 2 is counted within one dataset (provided that *n* for both samples is synced). By combining the 1s for any given binomial trial as a single success, while maintaining failures (all cases where neither meter was a success), researchers can divide the newly operationalized counts of success by the sample *n* to determine the actual random probability of a success for either meter in a given time period (i.e., $n = 1$, $k = 1$, $p$ = success of Meter 1 or Meter 2 $q$ = failure of both meters).

Once an $n = 1$, $k = 1$, probability for two meters has been determined, you can expand the time period by increasing *n* to include a wider range of time for any trials (i.e. $n = 2$ or 3, $k = 1$) to allow a success, if so desired. For clarity, what has been described above functions no differently from our example presented earlier in the paper, where successes and failures are remodeled into 5-second or 10-second trials. The only difference is that the initial $n = 1$, $k = 1$ probability is an amalgam of the successes of two meters, and not just one. We would also note that this process could be used theoretically to obtain the true random probability of more than two meters. While this method is tedious until the combined binomial $n = 1$, $k = 1$ probability is obtained, it is exact, and generates the genuine probability of a success from either meter given *n* trials.

### *Testing against Binomial Expected Probabilities to Determine Non-Random Association*

The use of a binomial test is by far the most precise method of analyzing this type of time-dependent data. The mean of the binomial distribution is expressed as the following:

$$np. \tag{1.2}$$

In addition, variance of the binomial distribution is defined as

$$np(1 - p). \tag{1.3}$$

Dividing the original EMF dataset into a series of binomial trials creates a higher-level dataset where the odds of success are derived from a binomial distribution (i.e. from $x_1$, $n = 2490.9$ trials, with a $p$ of success = .104). Per our example, it can be seen that, for any given $n$ trials, the probability of .104 remains constant in terms of obtaining successes–hits. Only the number of trials changes, as each sample is an independent binomial trial as a function of selection. Thus, by using the probability of this trial (.104) multiplied by the number of observations you are comparing (from above 80), we obtain the mean (8.35) expected chance associations in time. Multiplying the mean times $q$ (.896) provides the variance. The square root of the variance can be used to create the standard deviation (2.72), and thus a 95% confidence interval to test against (i.e. 2.88 to 13.76, or 2 to 14). As such, more than 14 occurrences of EMF with 80 observations has less than 5% chance occurring for $n$ number of randomly selected trials. It can be easier by simply calculating the probability directly with a binomial calculation.

To demonstrate that randomly chosen moments in time adhere to the model described above, we remodeled the original random sample data into 5-second and 10-second periods, representing 300 random samples of $n = 10$ and $n = 20$ trials. We then tested the number of successes obtained against the expected amount of successes, which was based on the probabilities obtained from the EMF binomial data. Results can be seen in Table 8.

Using random samples as an approximation of $n$ selected observations of relevant behavior associated with EMF nested as 5- or 10-second trials, it can be seen that across all but one random sample ($x_2$ produced significantly lower successes in the $n = 10$, $k = 1$ condition, binomial $p < .01$), the obtained random successes fall within the confidence interval generated by the collected EMF binomial data. In fact, the averaged $z$-scores for the differences between these random trials, compared with the expected EMF successes from the actual data, are very small ($n = 10$, $k = 1$ samples; average $z$ of difference = .29; $n = 20$, $k = 1$ samples; average $z$ of differences = .06). Thus (as the events were truly randomly selected without any type of compared variable) the randomly sampled trial successes closely mimicked the expected random successes determined by the dataset binomial probabilities.

In closing, we hope that this extended explanation clarifies applicability, strengths, and limits of this binomial modeling method. Through the sample data presented here, textbook application of binomial models, and determining successes

## TABLE 8
### Binomial Random Time-Dependent Samples with 5-Second and 10-Second Intervals
**Binomial Random Samples of 300 from Original Data (*n* denotes trials)**

| | | Samples $n = 10, k = 1$ (5 seconds) | | | | | | Samples $n = 20, k = 10$ (10 seconds) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Trial *p** | Obtained Successes | Expected Success 300 Trials* | *SD* Expected Successes* | 95% CI Success* Min | Max | Trial *p** | Obtained Success | Expected Success 300 Trials* | *SD* Expected Success* | 95% CI Successes* Min | Max |
| **Meter 1** | | | | | | | | | | | | | |
| | x | 0.104 | 30 | 31.20 | 5.29 | 20.63 | 41.77 | 0.198 | 57 | 59.4 | 5.29 | 48.83 | 69.97 |
| | y | 0.215 | 63 | 64.50 | 7.12 | 50.27 | 78.73 | 0.384 | 110 | 115.2 | 8.42 | 98.35 | 132.05 |
| | z | 0.255 | 74 | 76.47 | 7.55 | 61.37 | 91.57 | 0.444 | 139 | 133.2 | 8.61 | 115.99 | 150.41 |
| **Meter 2** | | | | | | | | | | | | | |
| | x | 0.228 | 53** | 68.40 | 7.27 | 53.87 | 82.93 | 0.405 | 128 | 121.38 | 8.50 | 104.38 | 138.38 |
| | y | 0.275 | 83 | 82.38 | 7.73 | 66.92 | 97.84 | 0.474 | 142 | 142.14 | 8.65 | 124.84 | 159.44 |
| | z | 0.241 | 72 | 72.30 | 7.41 | 57.48 | 87.12 | 0.424 | 136 | 127.7 | 8.56 | 110.05 | 144.29 |
| **Meter 3** | | | | | | | | | | | | | |
| | x | 0.004 | 2 | 1.17 | 1.08 | −0.99 | 3.33 | 0.008 | 1 | 2.37 | 1.53 | −0.70 | 5.44 |
| | y | 0.117 | 32 | 35.19 | 5.57 | 24.04 | 46.34 | 0.221 | 63 | 66.24 | 7.18 | 51.87 | 80.61 |
| | z | 0.199 | 59 | 59.58 | 6.91 | 45.76 | 73.40 | 0.358 | 105 | 107.34 | 8.30 | 90.73 | 123.95 |

* Trial and Expected Success derived from binomial probabilities of EMF dataset. ** Exact binomial test $p < .01$. Trial $p = 1, n = 1, k = 1$ base binomial probability multiplied by the number of samples of selected data at a time. Obtained Successes = the amount of random 2 *SD* successes obtained. Expected Success = multipication of Trial *p* times number of trials. 95% CI Success = the confidence interval derived around the expected amount of random successses.

and failures as the function of the original EMF/GMF distribution(s), we believe this method is applicable (with appropriate understanding of limitations of findings) to many parapsychological subjects. As controversy over parapsychological phenomena continues, any association of anomalous phenomena with known measurable energy cannot help but strengthen the validity of parapsychological research.

Criticism in psychical research has long centered around the inability to measure a mechanism by which ESP or PK occurs (e.g., Hines 2003). We hope others in future research will independently replicate these findings, and perhaps look at other spectra and types of energy for additional associations.

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*HISTORICAL PERSPECTIVE*

# William Shakespeare: A Study of the Poet and Five Famous Contemporaries Who between Them Used the Rune Ciphers to Reveal His True Identity

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**Abstract—**While it is true to say that the identity of William Shakespeare has thus far survived numerous doubts, the problem of his authorship continues to remain in want of a permanent solution. But with little contemporaneous, documentary evidence to support an alternative author, the traditional acceptance of his right to recognition remains intact. It will therefore be argued that since both literary and historical arguments have failed to resolve the authorship question, a mathematical resolution is available from the science of cryptography. Shakespeare flourished at the close of the Italian Renaissance, by which time advances in secret writing had kept pace with those in natural philosophy and the arts. Among the most noted of contributors to codes and ciphers in the Sixteenth Century was the mathematician Girolamo Cardano. His method of concealing secrets within an innocent passage of prose or poetry required a template, cut with apertures over the words and letters of a passage written in ciphertext. The template, when placed in position, revealed the secret through the apertures. Later, when the ciphertext was reproduced on a grille (from which it acquired its name, Cardano Grille), the secret could be read acrostically from the vertical alignment of cells in a set number of columns on a grille conforming to a unique key. Without the key, alternative grilles display nothing but a random spread of disconnected words that form an incoherent babble. It will be argued that Cardano Grilles became the modus operandi for informing posterity of Shakespeare's real name. Five known poets of the Elizabethan period, Ben Jonson, Edmund Spenser, Edward de Vere, Thomas Nashe, and Leonard Digges, joined by two publishers of Shakespeare's sonnets, Thomas Thorpe and John Benson, each wrote about Shakespeare in ciphertext, while embedding a plaintext encryption that included his real name as an acrostic, alongside the invented codeword, *rune*, with its archaic meaning of "whisper, talk in secret." Evidence will be produced, both documentary and

circumstantial, that demonstrates why secrecy about Shakespeare's written work threatened England's national security to such an extent among the ruling class that a lower-class member of society was made responsible for its authorship. This presentation will offer conclusive proof, validated by seven contemporary sources, that provides a resolution to the authorship dilemma. It will explain the repeated absence of Shakespeare's name where most researchers have been led to expect it to appear. It will also account for the failure of Shakespeare's death, in 1616, to have been of any public interest beyond the confines of his immediate neighborhood, and why his last will and testament made no mention of books, fellow writers, or even those plays now attributed to him that were not made public until seven years after his death, when the *First Folio* was published.

Extraordinary claims require extraordinary evidence. Secret plaintexts that have lain hidden in centuries-old dedications, and poems that contradict the 'standard model' of Elizabethan history, are so unexpected that their effect has the potential to undermine the scholarship of both past and present. Charles Dickens showed concern at this prospect, and committed it to writing (13 June 1847): "It is a fine mystery; and I tremble every day lest something should come out." Current accounts of Shakespeare's literary life are unlikely to withstand the revelations that have now "come out." The evidence contained in this paper is a straw in the wind: an augur of the literary storm required to sweep away old notions of Shakespeare and prepare for new research about a poet who was compelled to hide behind the characters of his creative genius.

## Cryptology during the Italian Renaissance

The Renaissance period that began in Italy, and flourished in Europe between the Fourteenth and Sixteenth Centuries, is primarily identified by its contribution to humanism and the artistic life of man. It introduced a surge in new ways of thinking about architecture, painting, and sculpture. Literature, too, went through a transition with the discovery of ancient Greek and Roman texts. These provided a fresh impetus to rethink philosophical ideas about man's place in the world, both politically and theologically; and from the writing of the ancients there emerged new genres for expressing the written word.

Classical drama was another subject that profited from the Renaissance. The performances given by traveling actors eventually developed into the theatre we know today. One of the chief driving forces for the development in stage entertainment came from the Italian commedia dell'arte, and it came at the time when Elizabethan dramatists, such as William Shakespeare, were

ready to make a transition from plays modeled upon the Greek and Roman classics to ones that reflected life in the then current era.

The Italian Renaissance also heralded the emergence of modern-day scientific thinking, as astronomers looked beyond Ptolemy's geocentric model of man's place in the universe, replacing it by a heliocentric one. Anatomists, too, began making their first major discoveries about the working of the human body. But historians are apt to display negligence when bypassing the fact that cryptology, too, dates its progress into a science from the Renaissance period. Before then, codes had been of the type referred to as Caesar-shift ciphers, in which one letter is systematically replaced by another. These continued to be used in Europe until the Fifteenth Century, when the cipher disk made its first appearance in 1466–1467. With this invention, the West, which up to this point had equaled but had never surpassed the East in cryptology, took the lead that it has never lost (Kahn 1967).

Invention of the disk is attributed to Leon Alberti, "the father of cryptology." There were two disks. The larger was stationary and consisted of a circle inscribed with the alphabet and the first four numbers. The smaller, inner disk rotated on top of it. This contained the alphabet written in a form of Atbash. The idea was to use the two discs as a single-step replacement device commencing with a 'trigger' letter (in this case 'g') aligned with A on the outer disk. Each time a letter in the plaintext fell in line with one of the four numbers, it became the new 'trigger': and this was aligned with A until another trigger occurred. These repeated realignments upgraded cryptology from a monoalphabetic substitution cipher to a polyaphabetic cipher, but the system was slow in becoming popular.

In 1606, Johannes Trithemius, Abbot of Sponheim, published *Steganographia* in three volumes, only to find it had been placed on the Vatican's list of prohibited books. In fact, according to Paul Lunde (2009), the Vatican archives contained thousands of pages of coded intelligence gathered by the papacy over the years, a clear indication of the extent to which cryptology was in use by Catholic nations. Of Trithemius' three volumes, one includes a complex work on cryptography; in which there is described a variety of systems for secret writing (Lunde). Twelve years later, Trithemius published *Polygraphiae*; this was the first European book to be written that was entirely devoted to cryptology, and it anticipated work

that would appear later by Giovan Battista Bellaso, and Giambattista della Porta, the latter having improved upon the former's ideas in his *De Furtivis Literarum Notis* (1563).

It was during this time that cryptology in England came under the intellectual province of Dr. John Dee, whom Queen Elizabeth I described as 'my philosopher'. His travels, learning, and access to rare texts, and Europe's leading thinkers, placed him in the excellent position of opening up the riches of the Renaissance to the English court (Woollet 2001). Such was his reputation that Shakespeare later cast him as the magician, Prospero, in *The Tempest*.

Dee's biographer, Benjamin Woollet, wrote that "Dee was fascinated by, and evidently expert in, cryptography." In 1563, Dee visited Antwerp to make a copy of Trithemius' *Steganographia*, which was later republished in Frankfurt in 1606, together with *Clavis*—the Key to understanding the content in the first two volumes. The Key had apparently eluded attempts to discover it earlier. But when it was reprinted, the Key revealed a very sophisticated means of concealment in the form of an Equidistant Letter Sequence (ELS), hidden by an innocent Latin ciphertext, "Padiel aporsy mesarpon omeuas peludyn malpreaxo."

The plaintext message within this ciphertext is revealed by taking alternate letters in alternate words.

Padiel aPoRsY mesarpon oMeUaS peludyn mAlPrEaXo

The letters then spell 'Primus apex' (the first summit). The *Clavis* was then able to show that Books I and II of the *Steganographia* were full of ciphers (Woollet).

## Cryptology in Sixteenth-Century England

Renaissance Italy's fascination with the methods of secret writing quickly spread. By 1542, the Republic of Venice had already set up its own secret service in the Doge's palace, with the employment of three encipher secretaries to develop new means of encoding diplomatic secrets; the duchies of Florence and Milan already employed cryptographers of their own; and from 1555, the Vatican began employing a cipher secretary to deal with incoming coded papers. But, in England, the same urgency for developing new ways of coding and decoding secret information to counter political espionage failed to keep pace with continental Europe until 1573, when Sir Francis Walsingham became Secretary of State and the country's 'Spymaster'. Realization of its importance appears to have come only when it was learned that not only Catholic priests but also

conspirators against Elizabeth were corresponding by cipher (Cooper 2012). Thereafter, Walsingham became Elizabeth's most ruthless minister. He was a Machiavellian figure, a spymaster who was responsible for the Queen's security. To meet the task before him, he acquired a small network of spies, which he rapidly expanded into the Continent, where many of the plots against Elizabeth were being hatched. Simon Singh (1999) goes on to say that Walsingham had originally encountered codes and ciphers while reading a book written by the Italian mathematician and cryptographer Girolamo Cardano. It was this book that aroused Walsingham's interest.

Cardano has been credited with being the first person to publish solutions for cubic and quartic equations. But he also achieved fame for his outstanding contribution to cryptography. Building upon Alberti's "cipher discs," his first invention was the so-called auto-key, in which the first few letters of the plaintext (the hidden, intended message) provides the rule that tells the recipient of a polyalphabetic cipher how far and how often the inner wheel should be turned against the outer.

Cardano's second contribution to cryptology was the forerunner of the grilles by which he is known: and it was based upon the Cabbalist practice of equidistant letter sequencing; that is, the skipping of letters within an otherwise innocent text. It is also this form of cipher that is the subject matter of the present article.

Cardano published details of his system in 1550; and it certainly became widely used in diplomatic correspondence for hundreds of years after its invention (Callery 2006). It also attracted the military, where it received a number of serious studies, initially by C. F. Hindenburg in 1796 and then by M. De Prasse in 1799. Ten years later, C. J. Mendelsohn (1939) described how J. H. Klüber was able to improve upon de Prasse's calculations in his *Kriptographik* (1809). But the two most outstanding contributions to the effectiveness of the grilles have since been recognized as those of F. von Wostrowitz in his *Handbuch der Kryptografie* (Vienna, 1881), and by General Luigi Sacco in *Manuale di Crittografia* (second edition, Rome, 1936).

The success of Cardano's invention was proved by its effectiveness in allowing innocent-looking documents to be written as ciphertext, thereby camouflaging the existence of an enciphered secret. As Jeffrey Satinover remarked (1997):

> To decipher a message, the recipient must either have a grille [or templet] identical to the sender's, or must know the spacing rule that created it, if it conforms to a rule. An equidistant letter cipher is the equivalent of a 'simple Cardano Grille'.

He then acknowledged that

> although the *rule* is simple, the encryption process is more difficult, since the encoder must devise a sensible-sounding message that accommodates encrypted letters at fixed positions: for a complex message, an exceedingly challenging problem in 'combinatorics'.

Genuine, cryptographic facts are singularly irrefutable, especially when in acrostic form. William and Elizebeth Friedman confirmed this when remarking "that acrostics were popular in Elizabethan literature;" adding that "acrostics have unquestionably been used to establish claims of authorship." To emphasize this, they then provided several examples.

In 1599, Sir John Davies published "twenty-six poems entitled *Hymns to Astraea*, each of which is an acrostic on the words *Elizabetha Regina.*" Sir Francis Walsingham too was named in an acrostic poem to commemorate his memory, and this is thought to have been written by his granddaughter, Elizabeth. Another Elizabethan was the Welsh poet, Sir John Salusbury (1567–1612); he became "as devoted to acrostics as he was to a lady called Dorothy Halstall, [having] enfolded her name in poem after poem." There was also "A striking example . . . in an anonymous Latin work published in 1616. The consecutive initial letters of each of the fifty-three sections into which the book is divided spell [in Latin] . . . Francis Godwin, Bishop of Landaff, wrote these lines." As the Friedmans commented, "In each case there is no room to doubt that they were put there by the deliberate intent of the author."

At the time Walsingham came to office, England was in the midst of a period of instability, with Queen Elizabeth in constant danger of losing not just her throne, but also her life: as several plots to assassinate her bear witness. Her court and capital swarmed with Spanish spies, reporting back to Philip II that England was on the verge of ruin, being without money, men, armour, fortresses, practice in war, or else good captains (Thompson 1937). Spain's interest was to return England to the Catholic fold, which it attempted, but failed, with its Armada in 1588. As a result of this political and religious turmoil,

> Late sixteenth-century England was a country that provided a ready audience for dissident code: Its people were addicted to hidden meanings. Codes, devices, and punning allusions were everywhere—in street songs and ballads, conversation, poems, plays, woodcuts, portraits, jewellery, costumes. Entire buildings were constructed in the form of riddles. (Asquith 2005)

Sir Thomas Tresham's house in Northamptonshire is just one example of what was happening at that time. It was constructed with three triangular walls, on three floors, with three windows to each side and three gables on each facade: thus representing the Holy Trinity. To this, Asquith added: "There were literary codes, too, accessible only to a sophisticated elite." It is a selection of these with their acrostics that will occupy the central theme of this paper.

### William Shakespeare: A Mystery Wrapped Inside an Enigma

Against this backdrop of English life in the second half of the Sixteenth Century, William Shakespeare suddenly emerged in the heart of London: like the literary equivalent of Athene, plucked from the head of Zeus; fully equipped in every genre of literature, but with no known path having paved the way to his abilities. If that were not enough, there also remains unexplained his unbelievably intimate involvement in the life of the 3rd Earl of Southampton, who was then a sheltered youth under the protection of Lord Burghley: the most powerful man in England, next to the Queen. Yet, with no letter of recommendation, and having published nothing, Shakespeare was lucky enough for the young Southampton to immediately became his patron. Academics refer to the period prior to this as Shakespeare's "lost years." But this lack of relevant information extends far greater. As Bill Bryson (2007), one of a great many who have attempted to write a biography of Shakespeare, was forced to admit.

> On only a handful of days in his life can we say with absolute certainty where he was. . . . By the time he is first mentioned in print as a playwright, in 1592, his life was already more than half over. For the rest, he is a kind of literary equivalent of an electron—forever there and not there.

Sir Hugh Trevor-Roper (1962) gave an even more forthright and explicit account of this problem in the following terms.

> During his lifetime nobody claimed to know him. Not a single tribute was paid to him at his death. As far as records go he was uneducated, had no literary friends, possessed at his death no books, and could not write.

To this, he expressed further vexation.

> It is exasperating and almost incredible that he should be so. After all, he lived in the full daylight of the English Renaissance, in the well-documented reigns of Queen Elizabeth and King James I. . . . Since his death and particularly in the [19th] century, he has been subjected to the greatest battery

> of organized research that has ever been directed upon a single person. Armies of scholars, formidably equipped, have examined all the documents which could possibly contain at least a mention of Shakespeare's name. One hundredth of this labor applied to one of his insignificant contemporaries would be sufficient to produce a substantial biography. And yet the greatest of all Englishmen, after this tremendous inquisition, still remains so close to a mystery that even his identity can still be doubted.

Biographical details of Shakespeare's life and times proliferate, but none go beyond historian Hugh Trevor-Roper's account. Instead, they surmise, suppose, and conjecture about the connections with literature he must have had to justify his authorship. Upon such a background, biographies of the man are little more than historical romances.

For the first twenty-nine years of his life—more than half of his lifetime—absolutely nothing of a literary or scholarly nature is known about this person; even his school records have been removed—if they even existed—and by excluding the plays and poems with which he is associated, although only by the similarity of his family name, Shaxpere to that of Shakespeare, there is no evidence he could actually write; the more especially since his will had to be written by another hand.

The name Shakespeare first appeared in public in 1593, when *Venus and Adonis* was published under the patronage of the twenty-year-old 3rd Earl of Southampton. The poet referred to this poem as the first heir of his invention. But when it was examined by Professor James Morgan (1900), a dialectologist, whose expertise was the English dialect, he was perplexed at discovering that it totally lacked a single word of the Warwickshire patois, since this would have been inculcated into any Warwickshire-born resident living among family and neighbors during his formative years. Morgan's conclusion was unequivocal. He explained it was absolutely impossible that the lad Shakespeare acquired or used any other dialect than the Warwickshire he was born to, and that his father, mother, and neighbors spoke. Morgan then went on to explain, "words are detectives that never fail to detect, and whose reports cannot be bribed, distorted or gainsaid. No man can write in a language he has never heard, or whose written form he has never learned." And with this, we have a dialectologist's expert testimony; the author of *Venus and Adonis* was not born and bred in Warwickshire's Stratford-upon-Avon. But it left Morgan in dismay, having to admit Shakespeare's poem represented an unsolved mystery.

Despite this, the poem proved an enormous success. By 1616, it had gone through eight editions. It appealed to the cultivated, the Court, and fashionable society; it found its audience especially among the young men of the Inns of Court and universities, who found it stimulating (Rowse 1973).

The excitement had barely time to settle before Shakespeare's second poem, *The Rape of Lucrece,* went on sale at the White Greyhound in St. Paul's Churchyard. This too went through six editions by 1616. But Shakespeare's sudden leap to fame as a poet, with its lucrative promise of further reward, is extraordinary. He never again published a single work. Instead, he went into hiding.

In 1595, the year after *Lucrece* was published, Thomas Edwards, author of *Cephalus and Procris*, made a revealing remark about Shakespeare. He described 'Adon'—widely assumed to mean Shakespeare—holed up, 'I have heard say', somewhere in London, 'the centre of our clime', hidden by the 'purple robes' of the aristocracy and 'tilting under Friaries' (Asquith 2005). 'Tilting' means covering with an awning for its protection. Edwards is indicating that he had learned that Shakespeare was being kept away from the public eye, 'holed up' in a London Friary. Moreover, his concealment had become the responsibility of the 'purple robes' of the nobility.

Edwards' reference to a London Friary points to Blackfriars: the friary that took its name from the color of the Dominicans dress. After Henry VIII's 'Dissolution of the Monasteries', part of the friary became a theatre (Smith 1964). It was where the Children of the Chapel Royal performed their plays between 1566 and 1597. In 1584, Edward de Vere, 17th Earl of Oxford, about whom we shall hear more, acquired its sublease for performances by his young actors, Oxford's Boys, alongside the Children of the Chapel.

William Shakespeare (or Will Shaxpere, to call him by his married surname), therefore emerges as a person with connexions to a member of the royal court, the theatre, and to the poems *Venus & Adonis* and *The Rape of Lucrece*. Yet, according to the dialectologist, James Morgan, he could not possibly have written *Venus & Adonis*, which would imply that he was not the author of *The Rape of Lucrece* either. Nevertheless, he was certainly identified as the author of these poems, and by a sufficient number of people to force a member of the nobility to provide him shelter in a London friary: to which this nobleman obviously had access.

The inference from these few facts is that a person other than Shaxpere wrote both poems, using Shakespeare as his pseudonym; and that Shaxpere was paid to play the role of the pseudonymous poet. But due to the success of both poems, Shaxpere became a centre of attraction, and no doubt this invited curiosity concerning what else he had written, and what he was working on for his next publication. Shaxpere would eventually have been irked by this constant demand for answers, especially if he had insufficient education to make reply. Eventually, failure to meet the impossible demands placed upon him would explain why he appealed for protection, and was taken into hiding. Moreover, since a member of the nobility responded

to his appeal, this suggests it was the same man who wrote the poems. A nobleman would also have had good reason for not wishing to be publicly identified as having employed a man of Shaxpere's low class to stand in for him, especially with authority to act as the acknowledged author of his work. It is therefore of interest to note that when this suggested subterfuge was taking place, *The Taming of the Shrew* was written. It is a play that commences with a nobleman deceiving a drunken Warwickshire tinker into believing that he is that nobleman—Art imitating reality?

The purpose of this paper, which is firmly based upon positive evidence from cryptology and the absence of any substantive reasons to the contrary, is to pursue the hypothesis that William Shaxpere was not William Shakespeare. Instead, it is proposed that William Shakespeare was the pen name adopted by Edward de Vere, 17th Earl of Oxford; and that Shaxpere was employed to serve his Lordship, with procuratory authority to assume authorship as an allonym.

This resolves several major problems that mystify those wedded to the belief that Shakespeare and Shaxpere were the same person. It explains why Shaxpere was forced to escape the public eye by hiding at Blackfriars, when the pressure had became too great for him to handle; it is also a reason why 'Shakespeare' was compelled to cease publication after *Lucrece*; and it explains why the 3rd Earl of Southampton was no longer needed as the poet's patron; which in turn explains why no record of Shakespeare's association with Lord Southampton exists in the family's archives (Stopes 1922). It also clarifies the passage in Robert Greene's *Groats-worth of Wit*, in which Shaxpere is correctly referred to as Aesop's 'Crow', beautified by the feathers of another: when, in reality he was a Jack-of-all-trades ('Johannes fac totum'), acting in his own conceit (as the poet Shakespeare). And, it explains, too, why the real poet's superior education in language, history, law, and court protocol, together with his knowledge of foreign lands, their customs and language, is incompatible with the absence of these same abilities, in what little is known about Shaxpere, with his insular, rural upbringing. All of which makes it abundantly clear why there has to be a lack of his biographical detail in the plays and poems of 'Shakespeare'; but which, by contrast, emerge in the biography of Oxford. Solved, too, is Professor Morgan's otherwise unexplained mystery concerning the absence of a single word of Warwickshire dialect in *Venus and Adonis*.

To add to this, the hypothesis accounts for those embarrassing absences in Shaxpere's will: where there is no mention of his library—not even a single book, and certainly no reference to literature. Yet, several of Shakespeare's plays were still unknown at the time of his death, and they would remain unknown for a further seven years. As for his life in the theatre, the only

reference to this in his will is an interpolation added to the document after it had been completed. It bequeathed £1. 6s. 8d to each of three actors: John Heminge, Henry Condell, and Richard Burbage.

By January 1616, Shaxpere had begun dictating his last will and testament, possibly to the Warwick lawyer Francis Collins. In his opening statement he professed to be 'in perfect health and memory, God be praised.' However, the will took three months to complete, and is remarkable for having been written on three different-sized sheets of paper, suggesting as many lacks of continuity. The will is also unusual among legal documents for its large number of alterations, substitutions, and interpolations (Wilson 1993). It was not until 25 March that it was finally completed. Twenty-nine days later, despite being in 'perfect health' at its commencement, Shaxpere was dead. Some fifty years later, when the Reverend Doctor John Ward was vicar of Holy Trinity, where Shaxpere lay buried, the clergyman was informed that Shaxpere's death had occurred immediately after the arrival of two fellow poets, Ben Jonson and Michael Drayton. They "had a merry evening and it seems drunk too hard. For it seems Shakespeare died of a fever there contracted" (Ogburn 1988).

In which case, this is puzzling. What was the purpose of the poets' 100-mile visit—surely not for a single night in the local alehouse? Then again, why did these two visitors hurry back to London, having just arrived after a three-day journey: thereby abandoning the dying Shaxpere? Even more curious, when Shaxpere died on 23 April, neither Jonson, Drayton, nor a single writer, actor, or member of the Queen's court were prepared to utter a single word of condolence at having seemingly lost England's most outstanding writer—nor was there even a solitary person at that time who was sufficiently moved to write a eulogy for him. Where was Cuthbert Burbage: first a manager of the Theatre in Shoreditch and then of the Globe? Both playhouses had, over the past years, produced most of Shakespeare's plays. Moreover, Shakespeare had also been one of the Globe's shareholders. Yet, all and everywhere remained silent at his death. The easy answer to this mystery is that of an 'open secrecy' concerning Shaxpere's role at the Globe. As a shareholder, he was perfectly placed to act as a proxy: collecting new plays from one of Oxford's servants and passing them to Burbage to produce. Outwardly, it would look to the unenquiring mind that Shaxpere had written them. It is therefore not difficult to imagine that something similar had occurred to enable Philip Henslowe, manager of the Rose, to produce the earlier Shakespeare plays, which he dutifully recorded in his daybook (Foakes 2002), but with neither an author named, nor any payment made; thus implying his resolve to remain silent about their provenance.

Surely, therefore, it is necessary to enquire—what did the entire literati of that age know about Shakespeare that the present age fails to acknowledge? It is a question that lies at the very heart of the controversy.

Its significance cannot possibly be doubted, because 48 days prior to Shaxpere's death, the less gifted poet, Francis Beaumont, also died. But the contrast between these two deaths is astounding. Beaumont's death was met with a flurry of tributes and eulogies from a list of poets. He was also immediately awarded a burial in Westminster Abbey, and placed among the great men of literature in what has become known as 'Poets Corner'. So, what is it that was known about Shaxpere that caused his death to pass as a non-event? And it is with this mysterious response to his death and its contrast to Beaumont's demise that suspicion concerning 'Shakespeare' grows deeper.

One month before Shaxpere's death, Lord Pembroke—brother-in-law to Susan Vere, daughter of the deceased 17th Earl of Oxford—recommended to King James I that Ben Jonson be awarded a pension of 100 marks per annum (≈ $20,000), paid quarterly. Jonson was therefore financially free to commence the mammoth task of collecting and editing the 36 plays written by 'Shakespeare' that would later appear in the *First Folio*. This edition became a public record of the writer's dramatic work, which had never before been authorized for publication. Up until that time, *Timon of Athens, Coriolanus,* and *All's Well That Ends Well* were completely unknown—seven years after their proposed author's death.

Shaxpere's death also removed him from exposure to the fame and praise which, thirty years earlier, had forced him to take refuge in a London friary, following publication of *Venus & Adonis* and *Lucrece.* By an uncomfortable coincidence, given that before he purchased New Place, two former occupants had been poisoned there, the death of his widow Anne, on 6 August 1623, removed her, too, from recognizing his fame; and preventing her giving a personal account of her husband's genius: especially at a time when the *First Folio* of his plays was about to go on sale and her testimony would have been most revealing. In the same respect, it is noteworthy that just weeks before Shaxpere's sudden death, his 31-year-old, spinster-daughter Judeth, had hastily married Thomas Quiney; despite his having just recently impregnated another woman. The wedding took place during Shrovetide, when marriages without a special licence—which they did not have—were banned. Shaxpere's other daughter, Susanna, had previously married Dr. John Hall in 1607. Therefore, by the time the *First Folio* was published in late 1623, both Shaxpere and his wife were dead, and his two surviving daughters were safely under the covertures of their respective husbands. Interestingly, too, neither Shaxpere's neighbors, nor

his associates, have ever provided one shred of evidence to indicate they were aware that he was anyone other than a wealthy, local businessman: a tradesman in malt, wool, and no doubt other commodities, as well as practicing usury.

Doubts concerning the identity of Shakespeare actually date back to the age in which he lived; and these can still be discerned by the comments made by writers who knew the man. Within weeks of *The Rape of Lucrece* appearing in the bookshop, *Willobie His Avisa* went on sale. It contains the first printed mention of Shakespeare by another person; but the name is separated by a hyphen, suggesting that the author already knew it was a pseudonym—"And Shake-speare paints poore Lucrece rape." The hyphen separating the name continued to be used thereafter, especially upon pirated versions of Shakespeare's plays. But this did not occur until after 1598, when Francis Meres gave the green light to acknowledge that 'Shakespeare' had already written twelve previously anonymous plays.

The hyphen even made its appearance in the carefully edited *First Folio*, in which I. M. (John Marston, representing the world of theatre, although James Mabbe is more often quoted) wrote "To The Memorie Of M. W. Shake-speare." The hyphen was again repeated in his tribute: "Wee wondered (*Shake-speare*) that thou went'st so soone / From the World's-Stage, to the Graues-Tyring-roome." The hyphen also appeared a further three times in the accompanying tribute written by Leonard Digges, representing Oxford University. He wrote: "*Shake-speare,* at length thy pious fellowes give / The world thy Workes: . . . when Posteritie / Shall loathe what's new, think all is prodigie / That is not Shake-speare's . . . Be sure, our *Shake-speare,* thou canst neuer dye." So as not to miss the point of these hyphens: the tributes were made to honor the author of *The Workes of William Shakespeare*: but with the name in the title spelt without a hyphen. The author received tributes from both Oxford and Cambridge (the latter, courtesy of Hugh Holland): it being from both these universities that the Earl of Oxford had received degrees. Shaxpere, of course, had no connexion with either university, and was merely a shareholder of the Globe theatre and a bit-part actor.

John Marston is of particular interest in this matter, because of his three books of satire, *The Scourge of Villainy*, published in 1598 and enlarged in 1599. Within its pages he wrote of an unnamed poet as "my love," adding "Most, most of me beloved, whose silent name / One letter bounds. Thy true judicial style I ever honour." 'I ever honour' or I honour E Ver, explains the one letter E that bounds that silent name: Edward de Vere.

*Willobie* was an instant success, although ranking low in literary merit, its subtle references to recognizable members of Elizabethan society

ensured its popularity. It also partly plagiarised certain verses in *Venus and Adonis*, while loosely following the storyline in *Lucrece*, as its author frankly admitted in his epistle to the reader. Its allusion to Shakespeare further occurred when the author referred to W. S. "as the old player" and H. W. as the "new actor"; thus, allowing a semblance to be made to the supposedly, secret relationship between 'William Shake-speare' and Henry Wriothesley. Also, when W. S. meets H. W. he greets him in satirical style, calling him, "Friend Harry," and then proceeds ("in loving comedy") to give him lessons in love, which reduces the student lover to a quivering mess. *Willobie* evaded the censor until 1599, when it was 'called in' and destroyed.

A further mystery concerning Shakespeare's identity occurs in Thomas Thorpe's dedication to the author's sonnets. Not only is the dedication notoriously asyntactic (not conforming to accepted patterns of syntax), but each word is interposed by a funerary stop (a dot carved between each word on a gravestone). Thorpe also described the author as "ever-living"—a word that is only used to commemorate someone who had died: thus acknowledging de Vere's death in 1604; whereas, Shaxpere was very much alive. The book's title, Shake-speares Sonnets, with the name separated by the near-customary hyphen is also consistent with the death of its author, for it implies that no more will be written.

A further reason for rejecting Shaxpere as Shake-speare is discerned from examples set by the Reverend Charles Fitzgeffrey, Thomas Vickers, and Henry Peacham; all three refused to name 'William Shakespeare' in company with the named poets of their era. In 1601, Fitzgeffrey wrote *Affaniae: Sive Epigrammatum*, in which he acknowledged all the great names in contemporary English literature—Daniel, Drayton, Jonson, Chapman, Nashe, Marston, Spenser &c., but no mention of Shakespeare; even though Meres had lauded his excellence at every level of the written word just three years earlier (Anderson 2005).

One year after publication of the *First Folio*, Thomas Vicars published his manual of rhetoric, which included a list of England's most excellent poets—but, again, no mention of Shake-speare. Four years later, he found a way of correcting this omission to accord with his conscience. "To these [names] I believe should be added that famous poet who takes his name from 'shaking' and 'speare'." One does not *take* a name that one is born with; one *takes* a name when one adopts a name they were *not* born with.

In 1622, Henry Peacham published *The Compleat Gentleman*. Peacham was the son of the Reverend Henry Peacham, also an author, who had once attended a performance of *Titus Andronicus* in 1574, when Shaxpere was aged 10. After this performance, Peacham gifted a signed and dated copy of

a scene and dialogue from the play to Lord Burghley's secretary, Michael Hicks, a collector of antiquities (Roper 2011).

Peacham's publication date, 1622, was intended to coincide with that of the *First Folio* (advertised in the Frankfurt Book Fair catalog of 1622). Yet, in his book, Peacham had included a chapter in praise of those "who honoured poesie with their pens and practice." He described this time as "a golden age (for such a world of refined wits and excellent spirits it produced . . . are hardly to be hoped for in any succeeding age)." He then listed those he had been referring to, placing "Edward Earl of Oxford" at the top of his list; but nowhere does he record the name of Shakespeare. In 1624, the popularity of this book required a second edition: but again Shakespeare's name was omitted from the 'golden age' of Elizabethan poets. In 1634 *The Compleat Gentleman* was published for a third time; yet, still the author made no mention of Shakespeare (ibid.). Peacham had obviously recalled hearing of his father's visit to watch *Titus Andronicus* in 1574.

## Key Issues for Resolving the Shakespeare/Oxford Debate

From what has been said this far, it is understandable that those defending the traditional biography of Shakespeare have a need to make clear why their arguments are superior to the doubts that exist. Much ink has been spent on the era in which the poet lived, and the legal documents and court cases in which he (Shaxpere) was involved. None of which is doubted by those in dissent. Records are also produced in support of the orthodox position that refer to Shakespeare—never Shaxpere—and his artistry; but this fails to prove Shakespeare was not another poet's pen name, for which familiar usage had made its use customary. Therefore, exactly what are the key facts that safeguard Shaxpere's reputation as a poet and playwright?

Are there any existing records of Shaxpere having received an education? Did any notable writer of that time record having met and conversed with him? Is there any record of his having received payment for the plays and poems he wrote? Are there any actual records in Stratford-upon-Avon, during the time he lived, that acknowledge him as a poet or playwright? Does his last will and testament contain the least mention of his literary career? Did any member of his family, including Judeth who lived for 46 years after her father's death, ever remark upon their personal relationship to William Shakespeare? When he died in 1616, did one single person anywhere in England take notice of his death as being worthy of public comment? The answer to every one of these questions is a resounding no!

In 2001 Diana Price published *Shakespeare's Unorthodox Biography*, in which she compiled a list of 25 writers, contemporaneous with, and including Shakespeare. Price then investigated the question: Are there any

miscellaneous records that refer to each of those listed as having been a writer? For all but one of those named, she found existing references. For William Shakespeare (or Shaxpere), she found none. This would help to explain why his death was totally ignored when it occurred: especially by those expected to commemorate him for making an unrivalled contribution to literature and the English language.

Those defending Shakespeare's traditional right to be the world-famous poet of Stratford-upon-Avon, were described by Professor Alan Nelson at a symposium organized by the University of Tennessee College of Law in 2004: where the question, *Who Wrote Shakespeare?* was debated. Nelson admitted to the assembled audience:

> I agree that antagonism to the authorship debate from within the profession is so great that it would be as difficult for a professed Oxfordian to be hired in the first place, much less gain tenure, as for a professed creationist to be hired or gain tenure in a graduate-level department of biology. (*Tennessee Law Review 72*:149)

Nelson was admitting that defense of the Stratford position is ensured by the safe hands of an embedded professorship. It is therefore one that has a group-think attitude, and can therefore be relied upon to maintain the status quo. In other words, a key issue in the Shakespeare authorship debate is 'groupthink'.

Yale psychologist Irving Janis (1970) described 'groupthink' as

> a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' striving for unanimity override their motivation to realistically appraise alternative courses of action.

Janis has described what is quite evident within the arguments that are repeatedly proposed to uphold belief in Shakespeare's Stratford origin. For, when taken too far on a wrong course, the inevitable result is to educate oneself with absurd conclusions, and then defend them to the hilt.

One attempt at a cornerstone for Shaxpere's defense has been to argue that his plays were published under the name Shakespeare at the time when he lived. But this, by itself, is not sufficient to prove that Shakespeare was not a familiar pen name adopted by some other author. To add to this: These very same publications are those that Heminge and Condell condemned in the *First Folio*, as "stol'n and surreptitious copies, maimed and deformed by frauds and stealths of injurious impostors." If Shakespeare's company of actors, or even Shakespeare himself, owned these plays, then why did these pirate publishers believe they could escape prosecution with impunity, just because the author was Shakespeare?

The defense has therefore to lean heavily upon the *First Folio*, with its title, *Mr. William Shakespeares Comedies, Histories, & Tragedies*. Beneath the title is a picture of the author; but which, upon inspection only increases the doubts that surround his identity. The figure appears two-faced. The dividing line below the ear lobe, with the hair extended outward, would appear natural on a face viewed from the rear of the picture. This Janus effect has also been emphasized in a most incredible manner by the right-half of the wearer's doublet, including the arm and shoulder, which very clearly belongs to the rear, left-half of the same garment (*Gentlemen's Tailor* 1911). In which case, one half of the figure is facing forward; the other half is facing the rear. Lord Russell Brain, President of the Royal College of Physicians (1950–1956), and a neurologist who was also a member of the Royal Society, noticeably observed that the figure had been given two right eyes. This would be a symbolic gesture: since a Janus figure does have two right eyes, although the second one looks rearward. Tarnya Cooper, Chief Curator at the National Portrait Gallery in London, with an expertise in Sixteenth century dress, added to the mounting criticism by explaining that only noblemen were allowed to wear embroidered cloth (2006). And this is precisely what the figure is attired in. It could therefore have been worn by Shakespeare, but only if he were the Earl of Oxford. The starched, pleated collar worn by the figure is also noteworthy. Apart from the fact it has no fastening at the front, which gives it a shield-like appearance, it happens to be identical to the collar worn by Thomas Wentworth, 1st Earl of Strafford. Hence, observe the subtle paragram—"a low form of humour," achieved by changing a single letter in a name or phrase. By exchanging the first F for T, the 1st Earl of Strafford becomes the 1st Earl of Stratford: a deliberate pun on Shaxpere's role of misdirecting attention away from the Earl of Oxford, and onto his allonym: a resident of Stratford.

Let it be supposed that before publication of the *First Folio*, the picture at its front was shown to notables of Stratford-upon-Avon; and they were asked if they recognized this person. Apart from pointing out that the dress was that of a nobleman, it is doubtful that anyone would have identified a

likeness to the recently deceased Shaxpere. But, if the same question were asked, when shown a picture of the original bust of Shaxpere, before it was positioned above his gravesite, the answer would be one of recognition. Yet both pictures, supposedly of this man, were produced at approximately the same time.

The logical inference is that the picture in the *First Folio,* complete with its deliberate oddities, was devised to prevent either Edward de Vere or William Shaxpere being recognizable as Shakespeare. The secret of de Vere's authorship was to remain inviolate: acknowledged only by artistic subtleties, capable of being understood by those aware of the truth. At the same time, Shaxpere's authorship was to continue being assumed by playgoers, and others who had never been introduced to him, but who were admirers of his art.

Despite the picture, the *First Folio* enjoys an overriding position of being a major key to the authorship question, with the effigy repeatedly reproduced as if exempt from the oddities that have been exposed.

Defenders of Shaxpere, having ignored the picture's deficiencies, concentrate upon Ben Jonson's encomium of Shakespeare's art, which commences after the picture. After this, they make reference to words written by Leonard Digges, which follows those of Jonson, in which he writes of the future: when, "Time dissolves thy *Stratford* Moniment." This unquestionably connects Shakespeare to Stratford-upon-Avon, and reinforces Jonson's naming of the poet as, 'Sweet Swan of *Auon.*' All doubts can therefore be set aside—or so it would seem.

Other key issues have been *Venus and Adonis* and *The Rape of Lucrece*; each with a dedication by William Shakespeare. But the lack of any local dialect in *Venus and Adonis*, which would have been a major part of Shaxpere's upbringing, and the failure to find any reference to Shakespeare in the family archives of his supposed patron, the 3rd Earl of Southampton, seriously enfeebles this evidence to the point of a mystery, if not patent doubt.

However, there still remains Shakespeare's Sonnets: another cornerstone in his defense. But to this, the asyntactic dedication written by the publisher raises unexpected concern; and when this unease is coupled with the fact that Shaxpere took no interest in the illegal appropriation of his literary property, which was totally contrary to his legalistic character, doubt as to the authorship of the sonnets is increased rather than diminished.

Mention must also be made of Henry Chettle's reference to "Shake-scene" in *Greenes Groats-worth of Witte,* which is another key issue in maintaining the orthodox view of Shakespeare. There is also an oft-repeated claim that *The Tempest* was written after de Vere's death. But the arguments

proposed as evidence for this come to nothing: as was successfully demonstrated by Professor Roger Stritmatter and Lynne Kositsky (2013).

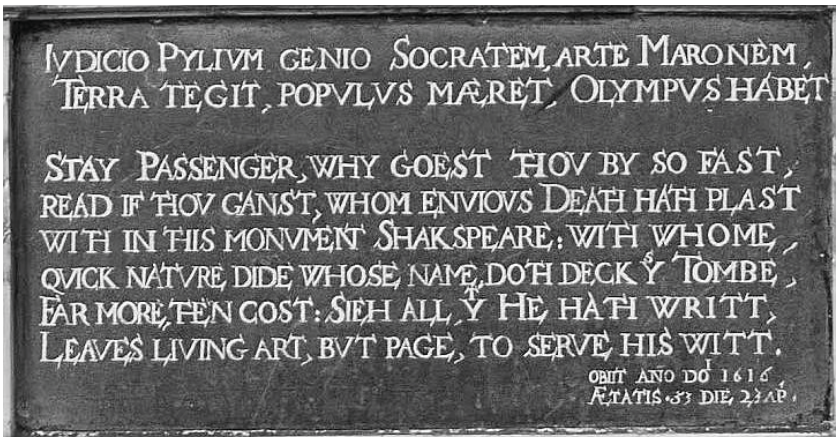
It is with this that we depart from the semantics of defenders and dissenters, and turn to the secure ground of numbers and their recognized application to cryptography. First in line is Ben Jonson, followed by Leonard Digges; both have been named in defense of Shaxpere's right to be recognized as William Shakespeare. In what follows, we shall allow the evidence to decide which of the two sides they support.

## Ben Jonson and the Stratford Monument

Stratford-upon-Avon's failure to acknowledge Shaxpere, other than as a local businessman, especially when 'Shakespeare's' entire collection of plays was about to go on sale countrywide, would inevitably raise questions when visitors arrived to pay their respects to the author in his hometown. Therefore, to meet the expected flow of people, a monument was commissioned in London, and constructed by Gheerart Janssen, a Southwark monumental mason. To assuage any doubts that might arise among those who knew him personally, Janssen received orders to carve a bust of Shaxpere, showing him to be a merchant, thus conforming to the local remembrance of this man. The original woolsack, once held by the bust of Shaxpere, and confirmed by Sir William Dugdale—"a man of scrupulous accuracy united with stubborn integrity"—who copied the bust in 1634, for inclusion in *The Antiquities of Warwickshire Illustrated* (1656), has long since been replaced by a cushion. This is presently shown as a support for the sheet of paper placed upon it. To further complete the idea of his authorship, a quill is poised above the cushion, as if the business-like figure is about to invoice a customer.

Beneath this monument is an inscription; and below that is a ledger stone covering Shaxpere's grave. Both have interest for the cryptographer. The English part of the inscription reads:

Stay Passenger, Why Goest Thov By So Fast, | Read If Thov Canst, Whom Enviovs Death Hath Plast. | With In This Monvment Shakspeare: With Whome, | Qvick Natvre Dide: Whose Name Doth Deck Y$^{S}$ Tombe, | Far More Then Cost: Sieh All, Y$^{T}$ He Hath Writt, | Leaves Living Art, But Page, To Serve His Witt.




As may be noted, the inscription challenges each passerby to read, if they can, whom death has placed within this Shakspeare monument. Why should the author challenge passersby to *read if they can* who, other than the named person, has been placed there? Why is the one named not sufficient?

The possibility that this inscription may actually be a cryptogram is heightened by the words of David Kahn (1967). He observed that awkwardness in phrasing may betray the very secret that the phrasing should guard: the existence of a hidden message. Some 'awkwardness' is indeed evident within this inscription.

- Whom, when first spelt, is without e: but it is spelt with e, when it next appears.
- This is written firstly in full, but when it is next required, it is abbreviated to Y$^{S}$.
- That has unnecessarily been abbreviated to Y$^{T}$ .
- Monvment Shakspeare, in mid-sentence, appears in this reverse order for no apparent reason.
- Shakspeare has been spelt by omitting the letter E between K and S.
- Sieh is not an English word at all; it is the German imperative from siehen: Look or See.
- Writt has been spelt with a second T.

In the Cardano Grille below, the plaintext message depends upon the presence of each one of these anomalies for the positioning of its letters to make a meaningful sentence. The first letter of plaintext, 'S', commences in the 8th cell of the first line, thus coinciding with the final letter of Profecto (truly): a Latin synonym for Vere (*Collins Latin Dictionary & Grammar* 2005). All rune ciphers follow suit, by referring to Edward de Vere. Jonson's known love for Latin is apparent here.

**P R O F E C T O**

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| E | A | D | I | F | T | **H** | **O** | V | C | A | N | S | T | W | H | O | M | **E** | N | V | I | O | V | S | D | E | **A** | T | **H** | H | A | T | H |
| P | L | A | S | T | W | **I** | **T** | H | **I** | N | T | H | I | S | M | O | N | **V** | M | E | N | T | **S** | **H** | **A** | **K** | **S** | **P** | **E** | **A** | **R** | **E** | W |
| I | T | H | W | H | O | **M** | **E** | Q | **V** | I | C | K | N | A | T | V | R | **E** | **D** | I | D | E | W | H | O | S | E | N | A | M | E | D | O |
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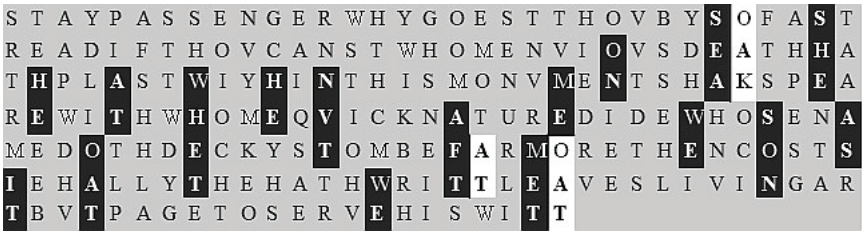
HIM, SO TEST, HE, I VOW, IS (WHISPER, TALK IN SECRET) E DE VERE:
AS HE SHAKSPEARE: ME, I.B.

First, observe how the E added to WHOME (row 4) allows TEST, VOW, RUNE, VERE, DE, and ME to be essential parts of the plaintext. Next, observe how Y$^{S}$ (row 5) in place of THIS (row 3), perfectly complements the additional E in WHOME; while Y$^{S}$, written in full as THIS, allows N and V to complete both RVNE and VERE; added to which, it also exactly aligns AS and HE with the S and E in SHAKSPEARE.

It can therefore be understood why MONUMENT SHAKSPEARE has been written in reverse, particularly with the E omitted from SHAK[ ]SPEARE. The inclusion of the German word, SIEH (row 5) can also be seen as an essential part of the ciphertext, because it supplies the necessary letter E in ME at exactly the place needed. Finally, the additional T in WRITT (row 6), permits the correct spelling of VERE, I B, HE, and IS in the plaintext.

The grille displayed above, with its 34 columns of vertically aligned words, is in stark contrast to any grille with the inscription laid out in a different number of columns. When the late Professor Albert Burgstahler examined these words in grilles, ranging from 10 columns to 50, he could find nothing remotely comparable to the 34-column grille (cf. the 33-column grille below).




This one example serves all. From which it may be inferred that the 34-column grille is unique among those available, for it is not only coherent throughout, it also responds to the challenge in the ciphertext.

The grille must now be examined for further evidence to confirm the authenticity of the plaintext. Is there a key to this particular display? Although it was first discovered by a crib and a simple arithmetical algorithm during a single evening, Dr. Bruce Spittle's attention was drawn to one particular line in the inscription that had been inset, and which leads immediately to the ciphertext beneath it. The line contains 34 characters, the same number as the columns that produce the vertical alignment of the plaintext. To meet this number, the Latin word MAERET has been spelt with the digraph Æ in place of AE, thus reducing the number of characters from 35 to 34: the number required for the key.

Further evidence of the plaintext's authenticity is provided by the word RUNE, attached to E VERE. All 8 grilles appearing in this study include this word as a cipher, which makes it appear to have been a codeword that was agreed privately by those involved in affirming the identity of Shakespeare. As a matter of fact, it is an extremely apt choice: since one of its archaic meanings was, "whisper, talk in secret" (http://www.yourdictionary.com/rune#DRzukbTPdfEZFBGh.99).

When the actual words of the plaintext are inspected for their validity, a different set of questions have to be satisfied. Although codes in the Sixteenth Century were abundantly used (Friedman & Friedman 1957), this does not guarantee every proposed solution is authentic, but it does favor the possibility.

In the first place, the plaintext must be seen as having been intended for the benefit of someone who would profit from the knowledge it conveys. Secondly, as the Friedmans said: The experienced cryptologist looks for two things, and they are equally important. First, the plaintext must make sense, in whatever language it is supposed to be written; and it must be grammatical and it must mean something, and say it intelligibly.

Because the plaintext commences with HIM, the direct object of the verb to TEST, it has been argued that this destroys the grammar of the sentence.

But in Elizabethan literature, it is not difficult to discover similar examples: especially where Ben Jonson has made the same inversion. Examples such as one found in *The Alchemist* (Act 5 sc. v 121), where Jonson wrote: "The Doctor, he shall hear of him at Westchester." And another, in *Every Man In His Humour* (Act 1 sc. ii 82), in which he wrote: "From the bordello, it might come as well." Quite notably, therefore, the initials I. B. adjacent to ME in the plaintext are the same that Jonson used in the *First Folio*, which was published close to the time when the Stratford monument was set in place.

Attention therefore refocuses upon two new questions. Would Jonson have been aware of Shaxpere's lack of ability to be the author of Shakespeare's work? And, is Jonson known to have used cryptography, other than on the monument?

The answer to the first question is resoundingly positive. Not only did Jonson conduct the editorial section of Shakespeare's *First Folio*, but he also acknowledged William Shake-speare (carefully hyphenating the name) as having acted in his own play, *Every Man In His Humour.* This play includes a character believed to be based upon Shaxpere, named Sogliardo. Jonson pitilessly lampoons him as "so enamoured of the name of a gentleman, that he will have it though he buys it." This is widely believed to refer to Shaxpere's purchase of a coat-of-arms from Sir William Dethick, who was later charged with forging historical evidence for personal gain. Jonson's suggestion for Sogliardo's motto was, 'Not Without Mustard'. Shaxpere's motto was 'Not Without Right', which depicted a black bend on a mustard-colored background.

As for the second question, it is known that Jonson liked to test his audience's powers of interpretation. His cleverness at devising appropriate anagrams and impresas in this manner was to become a hallmark for his success as a masque writer (Kay 1995). Jonson also admitted to having made use of ciphers in the past. In his book of *Epigrammes* (1616), he admitted to William Earl of Pembroke that "when I made them, I had nothing in my conscience, to expreßing of which I needed a cipher." Jonson's conscience is not unimportant in this manner; for he confided to William Drummond "that of all styles he loved most to be named honest" (Kay). Two plays by Jonson, *Volpone* and *The Alchemist,* are also of some interest, as each one is summarized with an acrostic poem that spells the name of the play.

It is with this that we return to the ciphertext on the Stratford monument, which has a second level of encryption to support the plaintext arrayed by 34 columns. It is found in the words QUICK NATVRE DIDE, which significantly links the two clusters of plaintext between Jonson's vow and de Vere's name.

In Latin, QUICK NATVRE can be translated as SUMMA DE VELOCIUM RERUM

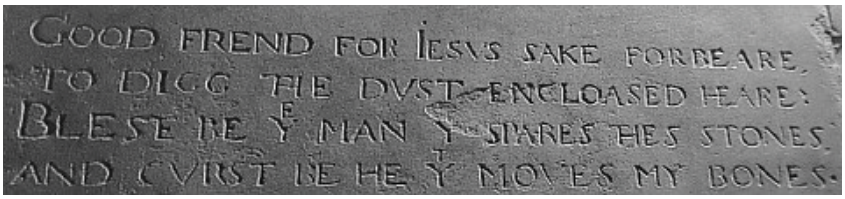
NATURA. In fact, it is an expansion derived from the three words in Titus Lucretius' poem, *De Rerum Natura,* in which *'Summa'* has been added to comply with Epicurus' atomic view of Nature—which was the basis for Lucretius' poem—as the *Summa*, i.e. sum of its working parts. To this has been added *Velocium* (the genitive case for *velox*: re, *velox mortis*—a swift death). Lucretius' book was popular at that time, and Jonson was exceptionally proud of his Latin scholarship. By allowing these words to die, or fade away—as clues in crossword puzzles sometimes suggest: e.g., 'died' is the solution to: 'Diane and Edward faded away'—they leave behind their first syllables: SUM DE VE RE NATU—I AM DE VERE BY BIRTH; perhaps, just another case of Jonson testing the reader's powers of interpretation?

A point has therefore been reached when the mathematical theory of probability can be applied, and the chances calculated with an exactness to fit the present situation. William and Elizebeth Friedman (Friedman & Friedman 1957) maintained that if a chance value is "one in one thousand million, the cryptanalyst's solution will be more than justified." In this regard, the entire grille—as with those that follow—deserve a detailed statistical analysis that goes beyond the scope of the present paper, and merits a paper to itself. Even so, to again quote the Friedmans:

> Scan the initial letters of any book of poetry, or of prose for that matter, and, see how often *short* "acrostics" turn up by accident. But when a long straightforward, simple acrostic is found, its objective existence can hardly be questioned. The probability that it is an accident is so small that it may safely be completely disregarded. . . . In short, the appearance of the acrostic appellation is not an accident; and if not an accident, it follows that it is there by intent, and because of the very nature of the mechanics of acrostics it can only have been placed there by the author himself. (Friedman & Friedman 1959)

With this information at hand, the curious ledger stone nearby, which covers Shaxpere's grave, but without naming him, also includes the codeword, RUNE: a discovery made by Art Neuendorffer. Speculation concerning the author may therefore be put to rest, since both inscriptions appear to have been written by the same person.

By commencing with the letter in the 12th cell—to comply with the connection to Edward de Vere—the first letter of RUNE is spelt vertically. The key to the number of columns, 28, is equivalent to the 28 letters spelling 'William Shakspeare's gravestone', with the deceased's surname spelt exactly as it is written on the wall monument above his grave. This meets the requirement that a key must apply to the plaintext—as maintained by the Friedmans. They held that a key must conform to some rule, "*corroborative*




**E D W A R D d e V E R E** → **17**

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | O | O | D | F | R | E | N | D | F | O | **R** | I | E | S | V | **S** | S | A | K | E | F | O | R | B | E | A | R |
| E | T | O | D | I | G | G | T | H | E | D | **V** | S | T | E | N | **C** | L | O | A | S | E | D | H | E | A | R | E |
| B | L | E | S | E | B | E | Y | E | M | A | **N** | Y | T | S | P | **A** | R | E | S | T | H | E | S | S | T | O | N |
| E | S | A | N | D | C | V | R | S | T | B | **E** | H | E | Y | T | **M** | O | V | E | S | M | Y | B | O | N | E | S |

in nature and purpose: something other than the mere choice of letters themselves must substantiate and validate the selections made" (Friedman & Friedman 1959). In this case, the key describes the location of the plaintext. And the 12 letters in Edward de Vere indicates the 12th column of the grill, where the count for RUNE begins. Similarly, the 17th number of de Vere's earldom points to where the count for letters spelling SCAM begins.

As for these two words of plaintext: Of all the four-letter words in the English language that might have occurred by chance, RUNE ('whisper, talk in secret') and SCAM ('traditionally . . . where an individual would misrepresent them self as someone with skill or authority') stand alone. No other four-letter word can be seen. According to the Persian philosopher Aviconna (981–1037), in his treatise concerning cause and effect, he said 'scamonia' defines "anything that destroys the end or purpose of something by eliminating its supporting condition" (https://www.thefreelibrary.com/Causality+in+Islamic+philosophy%3A+the+arguments+of+Ibn+Sina-a0201086401). Scammonia in its abbreviated form, 'scam', can therefore be seen as an apt description for describing the prevention of Lord Oxford's authorship rights, by having eliminated the conditions supporting it, by a person misrepresenting him).

The encoding of RUNE on both Shaxpere's gravestone and his monument continues to suggest Ben Jonson was the author of both verses. The use of a Latin 'I' for 'J' in Jesus; the abbreviation of 'that' with Y$^{T}$ and a 'V' instead of 'U' are all found in the inscription on the monument.

Clarification is also required for the word, BLESE (sic) on the ledger stone. Close inspection shows that a clumsy attempt has been made at converting the second E into a digraph, with the vertical part of E sharing its upright with an intended T. The result, through lack of space, is that the top,

left bar on the intended T appears to have been cut later; it is far too short and uneven to have been part of the original word. It has also collided with the adjacent S. Compare this with the digraph in THE, in the line above. Quite clearly, the chipped stone between S and E in BLESE bears scant comparison with the other, professionally carved digraphs.

The encipherment of RUNE together with SCAM not only consolidates the secret cipher in the inscription above the grave, it reinforces it by positioning these two words in columns that refer to Edward Vere 17th Earl of Oxford, whom the encoder (surely, honest Ben Jonson) vowed was Shakespeare.

The ciphertext inscribed on the gravestone is clear. Leave this body where it has been buried: with a curse added—made in a superstitious age—to anyone with the temerity to do otherwise. The intention of its author can be interpreted as an attempt to prevent Shaxpere being removed at some future time for re-interment inside Westminster Abbey.

There is also reason to believe that Shaxpere's remains were later taken from his grave to prevent a future generation depositing them in Westminster Abbey. This became evident in the early Nineteenth Century, when work was done to the floor close to his grave. The cavity dug nearby enabled the church sexton to peer into the grave where his coffin had been laid. When asked by Washington Irving, who had arrived in England in 1815, what the grave revealed, the sexton confessed he "could see neither coffin nor bones; nothing but dust." Interestingly, in 2016, the grave was scanned by ground-penetrating radar, seeking for human remains. The grave was found to be empty.

Let it therefore be observed that the ledger stone bears no name. An examination of other memorial inscriptions—surely in any cemetery across the world—will undoubtedly fail to find another gravesite monument that has omitted to name the famous person to whom lines of remembrance have been addressed. And to those inclined to claim the incumbent of the grave was so famous, he needed no other recognition, it must be asked: 'Why, then, did not one single person from the world of art, theatre, or literature recognize his fame at the time of his death?' Clearly, there was some 'open secret' that was too dangerous to mention—hence, the pressing need to impart it through cryptograms, lest his recognition be lost forever.

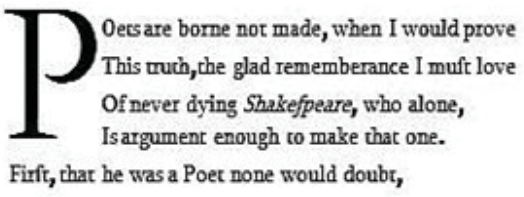
## Leonard Digges's Dedicatory Poem to Shake-speare

Leonard Digges was a distinguished man of letters, an Oxford graduate who was later awarded his M.A. for the studies he conducted abroad. He was also descended from a well-connected and influential Elizabethan family. But his special importance to the problem of Shakespeare's identity resides in the fact that he not only wrote a tribute to the man, whom he named

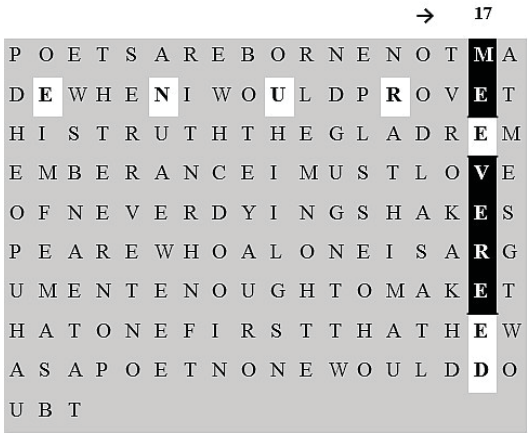
Shake–speare, but at the age of 28, his stepfather, Thomas Russell, who lived in the village of Alderminster, four miles south of Stratford-upon-Avon, was invited to act as overseer to the will of William Shaxpere shortly before his death. This fact connects Digges to the life of Shaxpere and the truth about Shakespeare.

Digges's first tribute in praise of Shake-speare, and published alongside other poetic accolades at the front of the *First Folio*, made use of several English words belonging to the Thirteenth Century—Maister instead of Master, and moniment in place of monument. Therefore, when Digges looked into the future, "And Time dissolues thy *Stratford* Moniment"; this would have formerly been understood to mean: "And Time [resolves as doubts, riddles; archaic: refer Chambers] thy *Stratford* Moniment [evidence (of some fact); O.E.D.]"; and it suggests that Digges's choice of Middle English was intended to refer to a Time (sic) when the Stratford monument has resolved the doubts he foresaw would occur: once Shakespeare's plays and poetry were scrutinized, and comparisons were drawn between Shaxpere's lack of education and alternate lifestyle, and that of their courtly author. It therefore strongly implies that he knew very well what had been concealed in the memorial inscription at Stratford-upon-Avon. And since Digges was a first-class scholar: "esteemed by those who knew him in Univ. coll. a great master of the English language, a perfect understander of the French and Spanish, a good poet, and no mean orator" (Anthony à Wood), it may be concluded that Digges's choice of words was made in the full knowledge of what he intended to be inferred by them.

Digges also wrote a second commendatory poem in praise of Shakespeare, but with an encryption concealed within its opening words. The verse survived his death, and was subsequently used as part of John Benson's introduction to his new edition of Shake-speares Sonnets, published in 1640.


POets are borne not made, when I would prove
This truth, the glad rememberance I muſt love
Of never dying *Shakeſpeare*, who alone,
Is argument enough to make that one.
Firſt, that he was a Poet none would doubt,

It can be seen from this grille that Digges has imitated the layout adopted by Ignoto (see below): the unidentified poet who wrote his tribute to Edmund Spenser in the *Faerie Queene*; excepting that Digges has reversed the horizontal plaintext for the vertical and the vertical for the horizontal. His ELS key of 18 is signalled by *Shakespeare,* written in italics, which contains the number of letters that spell William Shakespeare, to whom the poem is dedicated. The plaintext conforms to the 'rule' of commencing with the first




letter in a cell connected to Edward de Vere; in this case, 17, the number of his earldom. The key has also obeyed Friedman's "corroborative" rule. And it is equally important to observe that Digges has placed his cipher, which identifies de Vere by name, at the very beginning of his poem. He has therefore complied with the cryptographic rule that dates back to the Attic plays, when:

> Authors of Greek tragedies constructed their first eight iambic lines so that they not only made sense but also provided letters to make eight other iambic lines, the first two giving the writer's name. (Thompson & Padaver 1963)

This, of course, stresses the importance of a Cardano Grille as the preferred method of encryption. Whereas a code advertises the presence of a secret that can be decoded, a Cardano ciphertext conceals that fact entirely. And, when the finest poets of the Elizabethan Age set their pens to the task of composing ciphertext, their results were to remain hidden for more than four centuries; time enough for the tradition of Shaxpere's supposed artistry with a pen to usurp the Earl of Oxford's right to recognition.

Even so, tradition can no longer obstruct the fact that in all cases of de Vere's encrypted name, the plaintext always commences with a letter preceded by the number of letters in de Vere's name; or, alternatively, at the 17th letter of the ciphertext. Moreover, this, too, is constantly accompanied by the codeword RUNE. Although by chance, a concurrence of letters on a random grille may occasionally form a grammatical phrase, it cannot be expected to bear any relationship to the ciphertext from which it was derived; nor can it be expected to bestow knowledge of a secret nature to benefit the person discovering it. These preclusions leave the deciphered secrets on these grilles in the unique position of having accomplished those requirements.

The foundations supporting traditional belief about Shaxpere's authorship are systematically being shaken to destruction. Both the Stratford monument and the gravestone beneath it have been overturned by force

of the evidence exposed and the accompaniment of the codeword RUNE, implying the need for secrecy. There is also the loss of Shaxpere's peculiar portrait to contend with. For this is infected by too many oddities to be counted reliable. *Venus and Adonis* has also been lost: it having failed the dialect test, which then affects the authorship of *Lucrece*. To these losses, traditionalists have now suffered further embarrassment. Leonard Digges's use of Middle English has provided a deeper meaning to his choice of words than the superficial meaning formerly attributed to them. And when this is accompanied by Digges having enciphered the name of E de Vere and rune into a poem that outwardly praises Shakespeare; ensuring that it is positioned to accord with the Attic tradition of commencing his name in the opening lines of ciphertext, it remains only for science to confirm that this cipher, too, may be accepted as being another one of deliberate intent. As the Friedmans remarked, "a short one [acrostic], say of five letters or less, may and often does occur purely by accident." Digges's acrostic, however, consists of nine letters. And even though de Vere is transposed, this does not negate it; for, as the Friedmans admitted: "exceptions are made to the rules, and these permit the right kind of messages to be extracted. This tactic is acceptable to the professional cryptologist only if the exceptions do not exceed a certain minimum" (Friedman & Friedman 1957). A single transposition, as in the present case, would therefore be acceptable.

One key issue still remains. Ben Jonson referred to Shakespeare as "Sweet Swan of Auon." Can this be an expression that defies any realistic connexion between the Earl of Oxford and the river Avon?

### John Benson's Preamble in His Reissue of Shakespeare's Sonnets

It was not until 1640, after a gap of more than three decades, that Shakespeare's sonnets were again released to the public. But it would seem that a license for their publication was made conditional upon the young man, to whom they were mainly addressed, being understood as female. This was achieved by the simple strategy of changing the gender of several pronouns; sonnets 18, 19, 43, 56, 76, and 136 also were omitted. It would be almost a century and a half before Edmund Malone redirected attention back in time to Thorpe's original edition, and the realization that Shakespeare had not been wooing some fair maid with 'sugared sonnets', but it was a teenage boy who had been receiving the poet's devotional poetry.

The man responsible for altering the youth's gender was John Benson, a London publisher, who entered his revised edition of the sonnets in the Stationers' Register on 4 November 1639: describing it as POEMS: VVRITTEN BY WIL. SHAKE-SPEARE. Gent. Attention is drawn to the word 'Gent' and to the two Vs representing W, as compared with the single

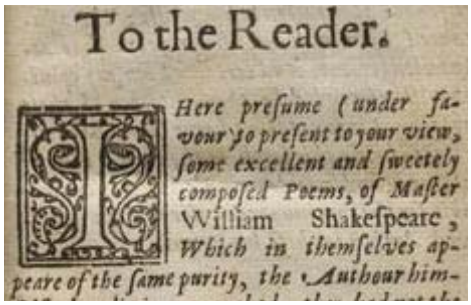
letter W in Wil. It means that the word VVritten consists of 8 letters. There is also the fact that the hyphenated name in capital letters contradicts the excuses made for it appearing hyphenated only when printed in lowercase letters (Shapiro 2010). Quite the opposite, the hyphenated capital letters alert the wary that Shake-speare was a pseudonym.

Benson's edition is no less contentious than Thorpe's had been. The cover depicts an altered copy of Martin Droeshout's anamorphosis of Shakespeare, which appeared in the *First Folio*. William Marshall, the new engraver, has added a nobleman's cape to his copy of Droeshout's figure, while also retaining the 1st Earl of Strafford's starched collar. Tarnya Cooper (2006) noted the further contradiction this displayed to 'Shakespeare's' social class in society, where the penalties for violating sumptuary laws could be harsh, and heavy fines were imposed for dressing out of one's class. "Only men above the rank of gentlemen could wear a cape over their clothing." Therefore, take note of Benson's deliberate emphasis upon class, when he stresses Shake-speare as Gent. The Droeshout engraving, with Shaxpere wearing embroidered cloth, also flouting the sumptuary law, may have failed to achieve sufficient notice; and so a cape has been added to accentuate the nobility of the wearer by clothing him above the status of Gent.


Of further interest to this ennobled figure of Shake-speare is the sprig of hyssop (belvedere in French) it holds: This allows the French word to reform as 'bel de vere'—in English, 'noble de Vere'. But Benson did not stop there. The opening comments of his poem, which he placed beneath the purported image of 'Shakespeare' is punctuated by question marks. "This shadow is renowned Shakespear's**?** Soule of th'age | The applause**?** delight**?** the wonder of the Stage . . . "

Aside from this, the third denouncement of this man is found in the letter which Benson addressed to his readers. It is this that establishes him as a member of the circle of writers who were bold enough to jeopardize their safety, by adding to the paper trail of rune ciphers; each one of which leaves little doubt as to who was meant by the name Shakespeare.

Benson's ciphertext commences: "To the Reader. | I here presume


To the Reader.

Here presume (under favour) to present to your view, some excellent and sweetely composed Poems, of Master William Shakespeare, Which in themselves appeare of the same purity, the Authour him-

(under favour) to present to your view, some excellent and sweetely composed Poems, of Master William Shakespeare, . . . "

Benson has therefore commenced his encryption, like Digges, to accord with the Attic tradition of using the first words of ciphertext as concealment for his secret plaintext. In addition, the first letter of his plaintext occurs in cell 4, allowing 17 in Latin numerals to conform to previous grilles that employed the strategy of identifying the subject of the cipher by matching the poet's name or earldom with the first letter of plaintext. The key to deciphering it is governed by an ELS of 8, which is denoted by the 8 letters in VVRITTEN—an apt choice of key for an epistle—also by the repetition of 17 in numerals. Benson's plaintext can then be read from a single cluster of words: ME: LO, E. VERE, RE: MARY S. OWED [i.e. indebted to] HIS ROTE. The word rote is archaic: derived from ancient French, in which it is defined as "companionship, or company (of actors)" (Greimas 1987); and from which the modern meaning of 'learning by rote' is obtained. Credit for discovering E. Vere's name is due to Art Neuendorffer.


The close clustering of the plaintext in the grille is evident. This has importance; because vertically aligned words by themselves are of no consequence unless the whole is connected to the parts by syntax and grammar. Additionally, the message must be meaningful to the author, as well as to the decoder. It can be seen how well this applies in Benson's grille, where the plaintext provides an implicit reason for Jonson's reference to Shakespeare as 'Sweet Swan of Avon'.

Benson's use of the word OWED, which, in the present case, means 'indebted to', is the preferred choice of synonym, because it so easily fits this type of grille. By connecting it

to MARY S and ROTE, it directs attention to the year 1603, when 'Shakespeare' visited Mary S. (Sidney) at Wilton House—"the paradise for poets" as it was called—watered by the river Avon, and where the poet was joined by King James I and his court (Wilton House no date). The royal party had recently left London to shelter from an outbreak of plague, and had travelled through Surrey and Hampshire into Wiltshire. The King's Men (often referred to as 'Shakespeare's' company of actors) were then summoned from their winter retreat in Mortlake, Surrey, to entertain the King and his court gathered at Wilton (Michael 1873).

Mary Sidney was at that time owner of Wilton House, and this was remarked upon by Aubrey (*Brief Lives*), who commented upon the scholars visiting the House, and its collegiate way of life. It was also where "Shakespeare wrote a number of his works," which inclines toward making de Vere's presence at Wilton especially significant. Moreover, according to its collegiate description, it was where Nashe had been taken in 1592, when he returned from "the country" with "my Lord"—"where there be more rare qualified men and selected good Schollers than in any Nobleman's house that I know in England."

In the *First Folio*, we recall that Ben Jonson had been scrupulously careful to ensure that any statement referring to Shakespeare was ambiguous, thus allowing it to apply equally to de Vere. But, when Jonson described the poet as 'Sweet Swan of Avon', attention became fixed upon the town of Stratford-upon-Avon: as mentioned by Digges, where a false trail had been laid to William Shaxpere. To counter this, Benson refers to Mary S. alongside E. Vere: and her indebtedness to his ROTE (company of actors). It redirects attention to Wilton House. For there, across its once extensive parkland, three little rivers flowed, of which the river Avon was the main waterway; the other two were its tributaries (Rose 1887).

De Vere's association with the river Avon in Wiltshire, and Jonson's reference to 'Sweet Swan of Avon', is therefore established. In 1951 during the Festival of Britain, and again in 1964, during the 400th anniversary of 'Shakespeare's' birth, Wilton House played an important role in these celebrations: as can be seen by an advertisement from that time.

> There's history in every corner. King Charles the first spent many happy summers here. Shakespeare wrote a number of works here. Queen Elizabeth not only slept here, she left a lock of her hair, which is still a treasured heirloom. (*Glasgow Weekly News* 19 May 1951)

To this may be added further evidence from the Victorian poet William Cory who stayed at the House in the summer of 1865. It was while residing there as classics tutor to the son of Sidney Herbert, 1st Baron of Lea, that he recorded in his diary how he had been reminded, by his pupil's mother,

of James I's visit to Wilton House in 1603. The invitation was extended by Mary Sidney, who had been made aware that the King was nearby. After the visitors departed, she honored the occasion with a building, which Cory made note of in his diary (Warre-Cornish 1897). "To commemorate it a temple was built at Wilton, and known as 'Shakespeares House'" (Compton Mackenzie 1950).

Actually, Mary Sidney had a second reason to commemorate the occasion. Her son had just become engaged to Lady Susan Vere, the daughter of the 17th Earl of Oxford—the same man, which the rune ciphers declare was the real William Shakespeare. The forthcoming wedding may explain de Vere's visit to the House at that time; although it also coincided with an outbreak of plague in the London parish of St. Botolph in June 1603. Of special note, therefore, is the fact that Oxford's future son-in-law, the Earl of Montgomery, together with his brother, the Earl of Pembroke, were to later become the 'brethren' to whom the *First Folio* of Shakespeare's plays were dedicated.

Sweet Swan of Avon is therefore no longer the sole preserve of William Shaxpere, for whom no record exists of his ever having written anything at Stratford-upon-Avon—not even a letter. With the strength of the *First Folio* totally devitalized, we turn next to Shakespeare's Sonnets.

## Thomas Thorpe's Dedication to Shakespeare's Sonnets

One of the most ingenious cryptograms ever devised must surely be the Dedication that appeared at the front of Shakespeare's Sonnets, published by Thomas Thorpe in 1609. Within a mere 144 letters, it includes four statements in plaintext that refer to either Edward de Vere, the 17th Earl of Oxford, or to Henry Wriothesley, the 3rd Earl of Southampton: the teenage youth to whom the sonnets were mostly addressed.

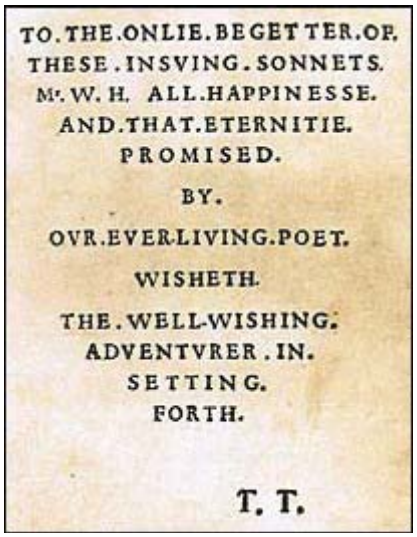
In England's divisive and highly charged atmosphere of religious affiliations and political unrest, especially so soon after the Spanish Armada's attempt to conquer England, such a loving relationship between an elderly statesman and a teenaged earl, if made public, would likely cause a hugely, damaging outcry against the ruling class. This could prove fatal to the career and aspirations of Lord Burghley, at a time when he was the most powerful man in England. But Burghley was in a delicate position; he was related to both parties: being grandfather to Oxford's three daughters, while also acting as Elizabeth I's appointed guardian to young Southampton. He was therefore responsible to the Queen for the boy's moral welfare. At the same time, he was desirous of protecting his family members from any salacious gossip at court, or from a public outcry.

Burghley may be judged to have responded to this dilemma with

political astuteness. As the head of censorship in an era known as "Regnum Cecilianum," when for 52 years, William Cecil and his son Robert effectively governed England, they created a dynasty so powerful its effects can still be felt today (Asquith 2005). And, as George Orwell sagely remarked, "He who controls the present, controls the past. He, who controls the past, controls the future." From this power base, and with the ear of Queen Elizabeth, Burghley ensured that his son-in-law, Lord Oxford, would never be associated with his sonnets to Southampton. And for two decades, all but two of the sonnets remained unpublished. But, for long-lasting security, a Cambridge graduate, Francis Meres, was persuaded to name William Shakespeare as the author of the Sonnets (even though they had never been published, and were unknown to all but a few of the poet's "lewd friends"). To commence removal of the author's previous anonymity, Meres heaped praise after praise upon Shakespeare's art of composition: naming him many times for his admirable ability at every level of literature. Meres's encomium was published in *Palladis Tamia* (1598). With his goal achieved, England was suddenly awakened to a named, literary genius among its population: a poet and playwright ranking alongside the greatest names in classical literature.

Eleven years later, the Sonnets were 'leaked'. Thomas Thorpe had somehow managed to obtain the complete collection. Very probably, they were sold by Oxford's son, Henry, who had assumed his deceased father's profligate lifestyle, and was in financial difficulties at that time. Mr. W. H., named by Thorpe, is therefore likely to be Mr. William Hall, who lived in the vicinity of Oxford's widow and son, and who occasionally dealt in manuscripts. Hall would have sold them on to Thorpe, who rushed them through the press as '*Shake-speares Sonnets* neuer before imprinted'. They were accompanied by a dedication that has dismayed lovers of Shakespeare's poetry ever since. Sir Sydney Lee described the words as "fantastically arranged and in odd grammatical order." Louis Gillet simply dismissed them as "a few lines of gibberish." John Leslie Hotson concluded the entire declaration appeared "preposterous," because it had been written back-to-front. It should have read: "To the only begetter of these insuing sonnets, Mr. W.H., the well-wishing adventurer (in setting forth) wisheth all happiness, and that eternity promised by our ever-living poet." It must therefore be a "cryptogram," Hotson concluded; which happened to be the truth.

Shaxpere expressed no reaction whatsoever to the publication of 'his' sonnets; as Thorpe must have known would happen when he published them. Although, in common law, the author of any book or composition held the sole right of first publication, and the right to sue anyone who


TO.THE.ONLIE.BEGETTER.OF.
THESE.INSVING.SONNETS.
Mr. W. H. ALL.HAPPINESSE.
AND.THAT.ETERNITIE.
PROMISED.
BY.
OVR.EVER-LIVING.POET.
WISHETH.
THE.WELL-WISHING.
ADVENTVRER.IN.
SETTING.
FORTH.
T. T.

printed, published, or sold the same without consent. Shaxpere's disinterest was therefore completely contrary to the ruction 'he' is said to have set in motion when Henry Chettle published *Greene's Groats-Worth of Wit*. Instead of prosecuting Thorpe, Shaxpere commenced court proceedings against Thomas Hornby: who had stood surety for the purchase of a supply of malt by John Addenbrooke, who disappeared without paying.

It was the late Dr. John Rollett, a scientist, who broke the first level of Thorpe's cryptogram. He queried why each word had been separated by a stop, and why the dedication had been divided into three parts of six, two, and four lines. This led to his discovery that by taking each sixth, second, and fourth word in succession, they spelt THESE SONNETS BY EVER THE FORTH. 'Ever' is an anagram of Vere; or, as some have said, Ver refers to Ver in France, from where the Vere family name originated, before migrating to England at the time of the Norman Conquest. As for de Vere being the fourth: a document from that time confirms that "E. Oxenforde, 17th Earle of Oxford, was the fourth ranking member of Queen Elizabeth's Privy council at the time of King James accession, and had been for an (as of now) undetermined number of years before" (Folger Shakespeare Library (documents), and R. Horne *Shakespeare Oxford Newsletter* 1970). His signature was therefore always fourth on the council's written decrees.

Although Rollett remained unaware of Vere's association with 'the fourth', it was by dint of examining "well over 20,000" paragraphs, in which he "only found one sentence that even remotely made any sentence at all" ('London was built before'. It occurs in an abridged version of *Boswell's Life of Johnson*). From this, Rollett "calculated the odds of the message being a chance occurrence were roughly one in a hundred million" (Rollett 2004). This figure exactly meets the Friedmans' criterion for acceptance as a genuine cipher.

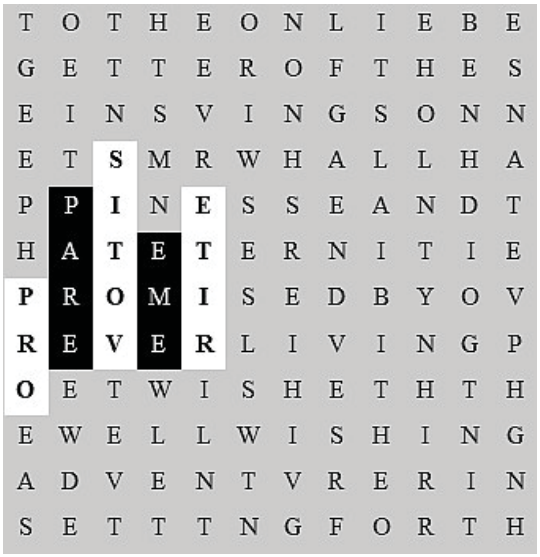
The success of Rollett's investigation was followed by his second discovery; the name HENRY WRIOTHESLEY had been encrypted into Thorpe's dedication. This was the 3rd Earl of Southampton, the unnamed youth to whom most of the sonnets were addressed. This discovery was to lead to the

present author discovering a further encryption that read, TO DE VERE HIS WS EPIGRAM. Thereafter, Jonathan Bond was able to reveal another encryption written in Latin, PRO PARE VENTIS EMERITER. All three are shown separately to emphasize each plaintext.

The first of these grilles, which names Lord Southampton, Henry Wriothesley, has an ELS of 15 for Henry, and 18 for Wriothesley. These form two keys—LORD SOUTHAMPTON, and SURNAME WRIOTHESLEY. Rollett observed from his research that grilles of a similar nature were used in the recent past by prisoners, who began, 'Dear George', or 'My dear George' to indicate every tenth, or twelfth word or letter in the innocent-looking passage that followed. Rollett therefore recorded the number of vertical words and their length in grilles composed of Thorpe's dedication, ranging from 6 to 30 columns. From these he found "only three 5-letter acrostics—*Henry, waste,* and *tress,* plus the 5-letter segment, *esley.* From these four 5-letter words or segments, he noted that two were used in the full name Henry Wriothesley" (Rollett 2004). And from this, he reckoned "the chances of the whole name turning up in two different arrays is . . . 1 in 300 million, which makes it far more likely that it really is a genuine cipher." To this, he added a subjective probability of "one in a hundred" to account for the name being that of the youth most likely to have been the subject of the sonnets. The probability of chance having been the cause, he said, was "very roughly 1 in 30 billion" (ibid.).


To discover the Earl of Southampton's name encrypted in the dedication to a book of sonnets that omits naming him as the subject of the poems, although leading academics agree this is the person named in plaintext, would be extraordinary, if it were coincidental. Fortunately, the inclusion of the codeword RUNE and the Latin plaintext discovered by Jonathan Bond help allay that suggestion. This was achieved by a further cipher that remarks upon the secrecy surrounding Southampton, together with the Earl's later career.

This second grille, consisting of four Latin words—PRO PARE VOTIS EMERITE—translates as a comment addressed to Henry Wriothesley. With



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| P | **P** | **I** | N | **E** | S | S | E | A | N | D | T |
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an ELS of 12, the letters of the key are the same in number as that of H. Wriothesley, the subject of this embedded comment.

A literal translation from the Latin reads: PRO—an interjection for Thou! rather than as a preposition; since pro is not followed by the ablative case; PARE—2nd person, present, active, is the imperative form of the verb, to appear, be present; VOTIS—is the plural form of votum, either dative or ablative, directing the meaning 'to vows', or 'to wishes'; EMERITE—is the vocative case for emeritus: a veteran, or retired soldier. Unfortunately, when Bond published his discovery in 2009, he added the available R (present in the ciphertext) to EMERITE; but the word EMERITER in any declension, either as an adjective or as a noun, does not exist in Latin. He also elected for a 'free' translation, thus avoiding the declension rules that are so important in a literal translation. From this, he obtained: "For my dear companion vowing to be well-deserving" (Bond 2009). Understandably, free translations favor personal bias; whereas, the Friedmans insisted that a translation in any language must be grammatically correct.

When Thorpe published these sonnets, the 3rd Earl of Southampton was aged 36. As a younger man he had joined the Earl of Essex in Queen Elizabeth's military campaign against the Irish rebels, but after his return to England, he became a veteran of Essex's Irish campaign. The plaintext therefore reads: VETERAN, THOU ART VISIBLE TO WISHES. This confirms the validity of Southampton's encrypted name by referring to his concealment from the public eye as the youth in the sonnets. But later, in adult life and as a military veteran, he is made visible by those wishing to see Shakespeare's sonnets made public.

This second set of plaintext has therefore delivered an apt comment upon the name encrypted in the first grille. It will also be recalled that the plaintext must be meaningful and grammatical in *any* language. A literal translation of the Latin satisfies this commitment perfectly.

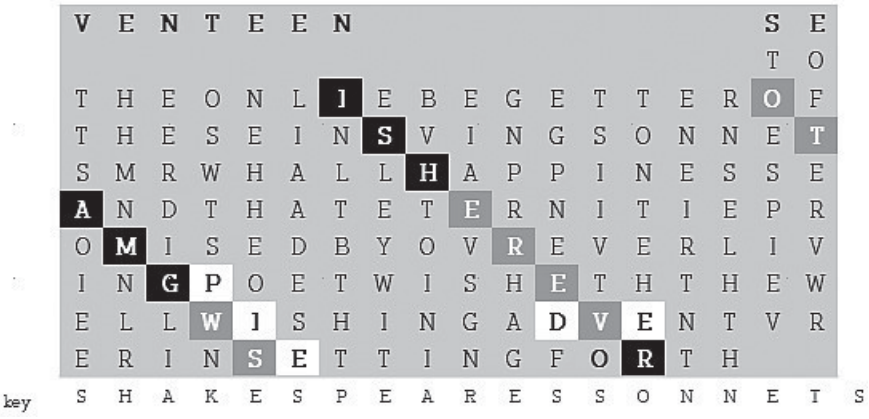
Secondly, would the author of the plaintext have known these facts? The suppression of the Sonnets at the time they were written, when Southampton was a teenager, would support this. Thirdly, the encryption must have a purpose conveyed by the plaintext. That purpose is clear; it identifies the unnamed subject of the poems by his family name, and then confirms it by the secrecy surrounding him, and then validating it by referring to his subsequent veteran status after the Irish campaign.

The third grille, with its 19 columns, reveals for whom the dedication was intended. The plaintext states, To Vere His W.S. Gram. These letters stretch in an uninterrupted acrostic from one side of the grille to the other. But observe how the ciphertext letters d and e embrace the initial v in vere, and the letters e p i run adjacently beside w s in a 19-ELS array. The statement then reads:

To De Vere His W.S. Epigram.

Because of the intense concentration of different plaintext statements occupying the grille, using only 144 letters of ciphertext, some letters in the plaintext have been employed more than once. A case in point is the word his, where i and s have been transposed, so that the s can also be used for Wriothesley (see 1st grille). The word epigram, for which the initials: sw, ip, and ma also require transpositions to complete the message, aided by transfer of the isolated r, is a case where the professional cryptologist would be expected to permit these as a minor inconvenience (Friedman & Friedman 1957).

The title of the book, Shake-speares Sonnets, with 19 capital letters, forms the key for an ELS of 19, resulting in 2 arrays of letters. The grille has been inset from 19 columns to 18 for graphic effect. The outcome of



this is to form a sequence of letters in the plaintext that run in an alternating letter sequence of 9, 10 . . . The first of which, commences at cell 9, to coincide with the spelling of SEVENTEEN; the second sequence begins at cell 17 along the line as if to confirm this number. These represent a sensible choice, and are entirely in keeping with the basic rules of cryptography. The plaintext also confirms the 6-2-4 word skip, declaring: THESE SONNETS BY E VER THE FORTH. The requirements for satisfying the conditions for a genuine encryption have therefore been met.

It is worth mentioning that when commenting upon acrostics, the Friedmans had further declared:

> Acrostic devices have the advantage . . . they leave no doubt that the author of the open text must also have been responsible for any hidden message—once it is established that one exists. . . . If, therefore, any genuine messages of this kind exist, they must be taken as conclusive. (Friedman & Friedman 1957)

Chance can therefore be ruled out as reason for the plaintext. Instead, it can be seen as a deliberate attempt by Thorpe, or an associate with the skills required for constructing a cryptogram, to alert a more liberal-minded posterity that Edward de Vere was William Shakespeare. And, as we shall now see, Oxford was not averse to establishing this truth for himself.

## Shakespeare's Self-Identification

Since the presence of these grilles repeatedly asserts that Edward de Vere was William Shakespeare, it would not be surprising to find the poet exclaiming this truth for himself; the more especially if he was motivated by the threatened extinction of his name as author of works which he foresaw would live on long after his death. It is certainly evident in Sonnet 72, where he has come to realize the fact that very soon he will cease to be named by anyone for his written works.

My name be buried where my body is,
And liue no more to shame nor me, nor you.
For I am shamd by that which I bring forth,
And so should you, to loue things nothing worth.

These words indicate the reason for this. He has become compelled to relinquish his name as author of his poetry because of the shame it would bring to his family members, and to the rank he held in society. His adoration for the youth he was addressing was known at court, and it was considered unnatural—even unbiblical. As Clinton Heylin remarked in 2009:

> If the sonnets are interpreted in what I think these days would be considered a fairly normal way, which is that they are about a homosexual affair with a peer, [Shakespeare] was committing several criminal offenses. . . . It would have been extremely socially sensitive to have a scandal come out that involved him and a male peer.

In Sonnet 2, the difference in age between the poet and his subject is revealed. When de Vere was 40 years of age, Southampton was 17, and Shaxpere—unpublished, and unknown—was 26. There is also the pertinent fact that in the late Sixteenth Century, the impropriety of someone from Shaxpere's class faulting a young earl, or addressing him as 'lovely boy' and then accusing him of dissoluteness and infidelity, as the sonnet writer does, would have been unthinkable (Ackroyd 2005). But for a senior earl and father-figure to the boy to have done this is understandable.

When fortie Winters shall beseige thy brow,
And digge deep trenches in thy beauties field,
Thy youthes proud liuery so gaz'd on now,
Wil be a totter'd weed of smal worth held:

In Sonnet 81 the author again bemoans his future loss of recognition. The sentiments he expresses are totally contrary to the fame, glory, and praise by which William Shakespeare is remembered today.

Unsurprisingly, therefore, in Sonnet 76, Dr. James Ferris was able to discover Edward de Vere's name, concealed where it would be most relevant—next to where the author speaks personally about his name.

Or I shall liue your Epitaph to make,
Or you suruiue when I in earth am rotten,
From hence your memory death cannot take,
Although in me each part will be forgotten.
Your name from hence immortall life shall haue,
Though I (once gone) to all the world must dye,
The earth can yeeld me but a common graue,

The ciphertext in this sonnet begins with some interesting comments by the author. 'Why write I still all one, ever the same', he enquires? Ever the same can be rewritten as 'the same E Ver'. Also, 'ever the same' was Elizabeth I's personal motto: *Semper Idem*. This poem may be one of those occurrences when 'Shakespeare' was addressing the Queen with a sonnet. Elizabeth was far from being adverse to flattery, or to words of poetic love, when declared by members of her Court. She saw herself as the moon goddess of classical literature. And, what is more, the Queen's admiration for Lord Oxford is expressed in a letter she wrote to him (held by Cambridge University Library). It attests to her "favour in no ordinary way" for Oxford, but from "our soul," which

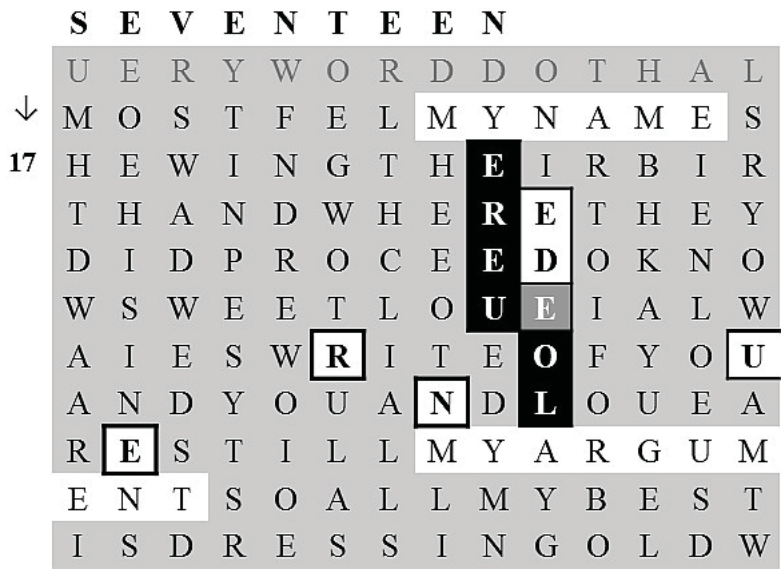
she adduces to his "outstanding intellect and virtue." It is of interest, therefore, to note that the poet actually addresses his subject as 'you', which was then a polite form of the singular (as with the French *vous*), and used when upper classes were conversing with each other; whereas, the poet addressed the Earl of Southampton, when still a youth, as 'thou'. This, too, was entirely in keeping with the convention of that age: as when a superior addressed an inferior, or when a father or senior figure addressed a youth (Crystal & Crystal 2005).

Why is my verse so barren of new pride?
So far from variation or quicke change?
Why with the time do I not glance aside
To new found methods, and to compounds strange?
Why write I still all one, euer the same,
And keepe inuention in a noted weed,
That euery word doth almost fel my name,
Shewing their birth, and where they did proceed?
O know sweet loue I alwaies write of you,
And you and loue are still my argument:
So all my best is dressing old words new,
Spending againe what is already spent:
For as the Sun is daily new and old,
So is my loue still telling what is told,

Further down, the poet exclaims: 'That every word doth almost fel my name.' From this, it is again possible to discern how easily *that word* 'EVERY' does, indeed, almost fel (cause) E VER[E]Y. Fel is spelt with typical Elizabethan freedom; employing one 'l' instead of two, so as to ensure the plaintext retains its position. In Anglo Saxon usage, fell is derived from 'fyllan'—"causal of" (Skeat 1882).

The plaintext, LO, E DE VERE, is therefore meaningful and informative. And, although like other brief announcements, it lacks a verb, its placement between MY NAME and MY ARGUMENT would be expected to compensate for this: Since it is the poet speaking about himself. There is also the inescapable fact that the poet, having named himself, is emphasizing the number 17—the number of his earldom—with which to locate the first cell of his plaintext; that is, in the 9th cell of line 17. An ELS key of 14 also coincides perfectly with the number of lines in a sonnet; to which has been added the codeword RUNE; once again, making it consistent with the other grilles affirming de Vere as Shakespeare.

While it is conceivable that Oxford would have been willing to retain his anonymity, as was traditional among the nobility who wrote verse, it is less believable that he would have been willing to assign his entire literary output to a Warwickshire tinker in perpetuity. He was, after all, the most




senior ranking nobleman in the Queen's court. It would have required no one less than Elizabeth herself to impress upon him the danger to her realm and to her position, if his expressions of love for the young Earl of Southampton should be construed by the public as improper.

Since Sonnet 76 is just one among 154 of Shakespeare's sonnets, the conclusion cannot be escaped that they were all written by the same person; with the majority addressed to the 3rd Earl of Southampton, with whom the author had become impassioned. This would therefore explain their secrecy, the censorship, and the seldom-mentioned fact that the poets and pamphleteers of that era never dared to refer to them after their brief publication in 1609.

### The Faerie Queene Names Ignoto

To Ben Jonson, Leonard Digges, Thomas Thorpe, John Benson, and Edward de Vere, as contributors to William Shakespeare's true identity, Edmund Spenser can also be added. Upon completing his epic *Faerie Queene* in 1590, he prefixed it with several dedicatory sonnets that were addressed to members of the nobility: one of whom was the 17th Earl of Oxford, to whom his words of praise included an endearment, specially bestowed upon him by the Muses—the dwellers on Mount Helicon.

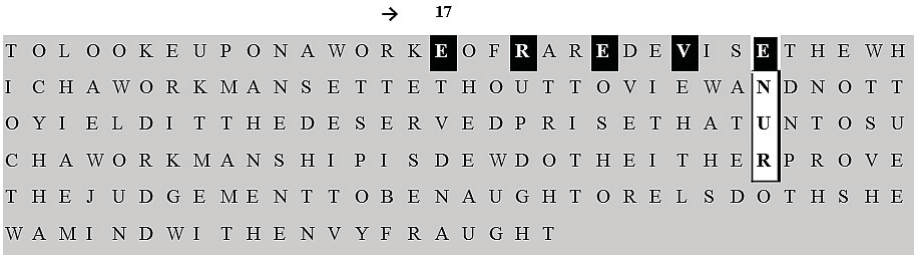
> And also for the love which thou doest beare
> To th' Heliconian ymps, and they to thee,
> They unto thee, and thou to them, most deare.

In response, Spenser received a number of verses, including one from a poet known to him, but who required anonymity: calling himself Ignoto (the Unknown). The verses he produced shine with the quality of Shakespeare in their composition; but, if they were by William Shaxpere, this fails to explain why he would have chosen to remain anonymous. And so the identity of Ignoto has never been established—that is, until recently, when Art Neuendorffer discovered de Vere's name.

Ignoto's poem begins with the opening lines of its first stanza concealing his true name by a rune cipher. This is important; because not only is the name joined to the codeword, RUNE, but it also obeys the cryptographic rule used by the Greek tragedians, in which they chose letters in their first two lines of verse, with which to name the author (see above). Digges and Benson, as we have already seen, were to later employ the same strategy for their own, secret ciphers. In fact, Digges's cipher is almost the same as Ignoto's, but with the vertical and horizontal encrypted information given in the reverse position. Both poets did, however, choose the same cell 17 for the first letter of their cipher.

*To looke upon a worke of rare devise*
*The which a workman setteth out to view,*
*And not to yield it the deserved prise*
*That unto such a workmanship is dew,*
*Doth either prove the judgement to be naught,*
*or els doth shew a mind with envy fraught.*

Ignoto's employment of this method of concealment clearly reveals the name, E. VERE, in plaintext: with RUNE (whisper, talk in secret) attached to it, and occupying the opening lines of his first stanza. It can therefore be tested for




a chance effect as a conjoined acrostic of 8 letters, but with the additional condition that the first letter of the cipher must occupy the 17th cell of the first line.

Let it not pass notice, either, that the ELS of 34, used by Ignoto (de

Vere), was subsequently adopted more than thirty years later by Ben Jonson on the Stratford monument. For his key, Jonson purposely *inset* a single line of Latin, with a digraph reducing the number of letters from 35 to 34. Ignoto, however, used the number of letters occurring in the title of Spenser's epistle 'The Faerie Queene A Letter of the Authors', which was circulated prior to the poem's publication. However, Oxford may also have had in mind the double nature of his title, as a reason for doubling 17, the number of his earldom.

The aforementioned epistle sent by Spenser was intended to describe the story of the *Faerie Queene* as "cloudily enwrapped in Allegorical devises" so that it would not be misconstrued. The meaning behind these words is also apposite for the number of letters that provide the key to Ignoto's secret identity.

### *Strange Newes* by Thomas Nashe

The close association between Edward de Vere's name, having emerged as plaintext in Sonnet 76, and its reappearance in Ignoto's commendatory poem to Edmund Spenser, may be attributed to the dates in which both sources were written. It is generally agreed that the sonnets were composed close to 1590. Ignoto's poem was written in 1589/90. This is important, because in 1592, Thomas Nashe became yet another contributor to the Earl of Oxford's right to be known as the playwright and poet, William Shakespeare.

Tom Nashe was prominent among the pamphleteers, poets, and play writers of the Elizabethan Age, and a person with whom Oxford had associated. Evidence for this is inferred by the sharp response Nashe gave Gabriel Harvey for the callous remarks he had written about Robert Greene, following this man's death in September 1592. Nashe told Harvey that he, in company with two others, had dined with Greene shortly before his death. He also reminded Harvey of the gold coins he received from Lord Oxford, when they were both studying at Cambridge.

Before his death, Greene had left scribbled notes referring to the three men with whom he had recently dined, calling them by nicknames: a common practice at the time. First was 'young Juvenal' (Tom Nashe, aged 24); 'Gracer' was Christopher Marlowe, who received his degree from Cambridge by 'special grace'; and 'sweet Saint George' would have been entirely appropriate for the Earl of Oxford as an aptronym in 1592. That is, if he were the author of *Henry VI Part I & III*. Both plays resound with shouts of 'Saint George'; and the same cry is repeated several times more in *Richard III*. It is also heard in *The Taming of the Shrew*, written in the same period. Nashe seems to have been aware of this when he further commented in his letter to Harvey: "I and one of my fellows Will Monox

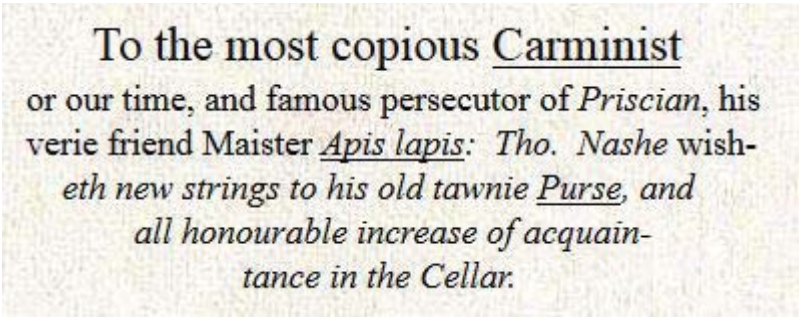
were with Greene at that fateful banquet." But, knowing that Harvey would recognize no one by that name, he added a clue: "Hast thou never heard of him and his great dagger?" Only then would Harvey have understood. He had already been reminded by Nashe of the gold coins he received from the Earl of Oxford, and he would now remember it was Oxford's public duty, as Lord High Chamberlain, to carry the Sword of State (his great dagger)—hence, Nashe's anagrammatic Will Monox, which is composed of three abbreviations: M. Will. Oxon. (Master William Oxenford); but it would have left Harvey puzzled as to why Nashe had joined Lord Oxford to Master William. It was a typical Nashe jest. Oxford was, at that time, about to assume the pen name of Master William Shakespeare for his forthcoming poems *Venus and Adonis* and *Lucrece.*

Nashe would have learned about the intended transfer of authorship between Oxford and Shaxpere at the banquet he attended in company with fellow writers Marlowe and Greene, for it would have been where they were told about Oxford's pen name Shakespeare; and how Shakespeare was to be identified as William Shaxpere, together with the plays and poems Oxford had written.

The purpose of the banquet is therefore apparent; it was to alert Oxford's three guests of the imminent arrival of this new poet, William Shakespeare: to wit, himself: but with Will Shaxpere acting in his own conceit as Oxford's allonym. These three writers, foremost at that time, were therefore asked to leave Shaxpere alone (which they certainly did) and avoid mentioning in public what was intended. But the plan misfired. After the banquet, Greene suddenly took ill and died. Notes he had made concerning Shaxpere fell into the hands of Henry Chettle, who naturally failed to understand them. He believed Greene's description of Shaxpere referred to Shakespeare, and he alerted his readers to this in Greene's *groats-worth of witte*: making it appear that Greene was envious of Shakespeare, and he had made this known before he died. It caused a minor rumpus at the time, with 'Shakespeare' having to protest his innocence. Much has been written on the subject of Chettle's error ever since.

Nashe, for his part, set about the task of secretly referring to the truth about Shakespeare in *Strange Newes,* which he began by addressing his dedicatee with innuendoes that point to Oxford's' lifestyle: both as a man and a writer.

"To the most copious Carminist of our time" [carminis is Latin for, 'a composition in verse': hence, carminist, a versifier of stories;—most copious would refer to *Venus and Adonis,* with 199 stanzas, and *The Rape of Lucrece*, which has 265; one at least of these two epics, if not both, had been written by this time], "and famous persecutor of Priscian" [the name of the


To the most copious Carminist
or our time, and famous persecutor of *Priscian*, his verie friend Maister *Apis lapis*: *Tho. Nashe* wisheth new strings to his old tawnie *Purse*, and all honourable increase of acquaintance in the Cellar.

5th century grammarian whose book became the basis for teaching Latin in the Middle Ages: but which Shakespeare used for a comedy sketch in *The Merry Wives of Windsor* (1592)], "his verie friend" [a play on Ver[i]e, his friend's name]. "Maister Apis lapis" [lapis is mentioned in the Priscian comedy scene. Apis refers to the Egyptian equivalent of Jove. Disguised as a bull, Jove carried off Europa. This was parodied by Falstaff in *Merry Wives of Windsor*; when, disguised as a stag, Falstaff tried to carry off Mistresses Page and Ford at a tryst in Windsor forest. Both *Apis* and *lapis* therefore take their meaning from comic scenes in this Shakespeare play, written that same year.]: "Tho. Nashe wisheth new strings to his old tawnie Purse" [Reading tawnie and blue were the colours of Oxford's livery; apart from which, his purse had been emptied by debt after his wife's death in 1588], "and all honourable increase of acquaintance in the Cellar.

This last phrase confirms Nashe's recent acquaintance with 'Apis lapis' as a drinking companion, and he expresses the hope it will continue. De Vere was known to be an entertaining companion and *raconteur* when in his cups. There is also strong evidence that Nash acted as Oxford's secretary in the collegiate atmosphere of Wilton House: the home of Mary Sidney and her sons, the Earls of Pembroke and Montgomery: to whom Shakespeare's *First Folio* was dedicated.

In 1592, the German Count Mümpelgart was due to visit the Queen at Windsor Castle, and to attend the royal garter ceremony. For entertainment, Elizabeth is said to have requested 'Shakespeare' to write a play showing Falstaff in love. Several different reports confirm that the play had to be ready in two weeks. This bears witness to the haste in which it was prepared, since it is written mainly in prose. In which case, a secretary would have been essential. And it would explain Nashe's boast in 1592, when he wrote of his return from "the country" with "my Lord."

*The Merry Wives of Windsor,* apart from being set in Windsor, includes several accurate references to the German party's visit to England, including the garter ceremony and the German party's misadventure when being

branded as horse thieves. All of which points to the play's composition coinciding with the German visit in 1592.

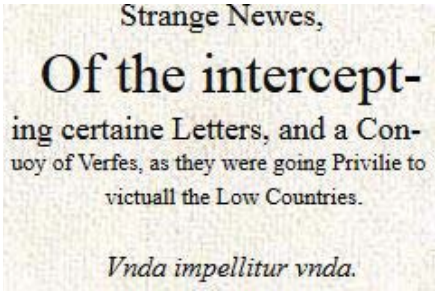
Nashe then delivered his *coup de grâce* by enciphering in *Strange Newes* the name of the person he had been secretly addressing as Apis lapis—E VERE: together with the codeword RUNE, and the commencement of his cipher in the 7th cell, so as to coincide with the final letter of E de Vere. He also issued a challenge—as Jonson would do later—to put his disclosure to the test.

Nashe's method for concealment was the Cardano grille; ensuring that it conformed to the Attic tradition of the author's name secretly occupying the opening lines of ciphertext.

The implication of his cipher must once have seemed plain to Nashe at the time he arranged it. In 1592, Oxford was about to begin publishing under the name of William Shakespeare, with his first poem, *Venus and Adonis*. It would not be long before the deception became known. For, although Shaxpere might act the poet on Oxford's behalf: Once he was inveigled into setting pen to paper, the truth would surely be revealed.

This possibility had apparently been foreseen. When John Aubrey began collecting facts about Shakespeare for his *Brief Lives*, he made a note that pertains to this. In a personal memorandum, he observed: "he was not a company keeper lived in Shoreditch, wouldn't be debauched, & if invited to writ: he was in paine." Practical advice for anyone with a secret to keep. It also explains why Shaxpere was forced to take shelter in a London friary, under the protection of the nobility, after publication of *Venus & Adonis* and *The Rape of Lucrece*.

Nashe's grille, with its plaintext message: LO SO TEST E VERE, and the codeword RUNE, as first shown by Art Neuendorffer, include 128 letters of ciphertext, 17 of which are plaintext. E VERE has an ELS of 15; and LO SO TEST has an ELS of 12. Because Nashe's title includes 15 typescript characters in enlarged, bold print, it is unlikely to be coincidental that this happens to be the key to 'E VERE'. And since *Strange Newes* has 12 letters set directly above the clue to the first key, this is aptly placed for acceptance as the key to, LO SO TEST. Twelve also has the advantage of being the number of letters in Edward de Vere—the object of the test. Added to this, Nashe has complied with what has now become the convention of selecting the first cell for an intended cipher in either cell 17, or in the cell that spells the family


Strange Newes,

Of the intercept-

ing certaine Letters, and a Con-

uoy of Verfes, as they were going Privilie to victuall the Low Countries.

*Vnda impellitur vnda.*


name of the 17th Earl of Oxford.

Nashe's grille contains three acrostics of 8, 5, and 4 letters, totaling 17, in close union. This is of special interest, because they are also complementary. A four-letter acrostic would not normally excite attention. But when that same acrostic occurs, without exception, on all eight grilles that refer to Edward de Vere, it intuitively overcomes the suspicion of a chance occurrence; the more especially because of its archaic meaning of attending a secret. That secret is explained by the other two acrostics—LO SO TEST E VERE as Apis lapis; the carminist to whom Nashe has dedicated *Strange Newes*.

## Concluding Remarks

It was William and Elizebeth Friedman who drew attention to the difference between scientific evidence and arguments shared by historians and literary critics concerning Shakespeare. The Friedmans maintained the historical argument can never produce certainty either way; for there is always a counter-argument, always an appeal to the lack of evidence, a counter-interpretation of what evidence there is, much inference and some coincidence. This is now understood as 'confirmation bias'; for which enough research will tend to support a professed theory. Those affected will always seek to interpret new information in a way that confirms preconceptions and avoids information and interpretations that contradict prior beliefs. It was precisely these reasons that caused the Friedmans to seek the "more certain ground of cryptology," so as to overcome personal bias.

It is therefore cryptanalysis that may be said to have resolved the Shakespeare authorship question—courtesy of Ben Jonson, Edmund Spenser, Thomas Nashe, Leonard Digges, Thomas Thorpe, John Benson,

and of course Edward de Vere, himself; whereas, historians and literary critics have only succeeded in raising the dust to obscure the truth.

It was reasons such as these that caused the Friedmans to affirm they would be content, only to ask,

> whether the plaintexts make sense, and the cryptosystem and the specific keys can be, or have been, applied without ambiguity. Then, provided that independent investigation shows an answer to be unique, and to have been reached by valid means, we shall accept it, however much we shock the learned world by doing so. (Friedman & Friedman 1957)

Each one of the eight rune ciphers provides factual evidence concerning Shakespeare's identity in acrostic form. The inscriptions, letters, dedications, and tributes to 'Shakespeare', and even two of the poet's own verses, have either made this known, outright, or they have intimated it as fact—Edward de Vere was William Shakespeare.

If it be asked why so much time and energy was spent in the construction of these ciphers, the answer must be the innate, human desire for justice and truth: if not in their own time, then at some future date. But it was also a task attended by peril to the encoder. As Gerard Kilroy (2005) explained—

> Never have books or writing or letters been as dangerous as they were between 1581 and 1606; proclamation after proclamation forbade seditious writings; books were seized in midnight raids, and men were questioned for copying poems. Stephen Vallenger lost his ears for printing one work, and subsequently died.

Ben Jonson and Thomas Nashe both spent seven weeks in Fleet Prison for their part in writing *The Isle of Dogs*. At another time, Jonson was arrested for the alleged "popery and treason" appearing in his play *Sejanus*. John Marston and George Chapman were also arrested for having written just two paragraphs in *Eastward Ho*, thought to be slanderous. They were then told they would have their ears and noses cut. Edmund Spenser was exiled to Ireland for having caricatured Lord Burghley in an animal fable. In Stowe's *Annals of London* for 1601, Stowe described the public whipping of five citizens, before their ears were cut off. Their crime was to have uttered slanderous words against Lord Burghley. The pamphleteer, John Stubbes, together with his publisher, both had their right hands publicly amputated at the wrist with a butcher's cleaver and a mallet, for having published an opinion about Queen Elizabeth's proposed marriage to the French prince, Hercule duc d'Alençon.

Understandably, against threats of disfigurement, "Writing went

underground, between the lines, into the paper and into code" (Kilroy 2005). Evidence for this can be found in the rune ciphers, where the plaintext exposes the truth of a politically induced coverup by the most powerful man in England, Lord Burghley. His relationship, as father-in-law to Oxford, and his royal appointment as guardian to his youthful ward, Lord Southampton, made it imperative that he disassociate himself from the threat of scandal posed by their loving relationship, expressed in the sonnets. Censorship was immediate, but not long-lasting. And so was born the idea of misdirecting public attention from the author, by imposing it upon a person far removed in status from the ruling class, William Shaxpere. After Burghley's death, this misdirection continued under the governing power of his son, Robert—the protective uncle of his nieces: de Vere's daughters, and their family name. A generation or two further on, the acceptance of Shaxpere's authorship had, by then, already moulded itself into a part of English history, to be accepted by the general public. Thereafter, by the time the theatres reopened in the second half of the Seventeenth Century, following the bloodbath of the English Civil War, the death of Cromwell, and the Restoration of the Monarchy in 1660, Shaxpere's authorship was already accepted as part of the past, and the way forward to join with the Restoration Comedies that welcomed in the more liberal society of Charles II. It was not until the early part of the Eighteenth Century that Nicholas Rowe provided some account of William Shakespeare's life from the hearsay of a past age (Rowe 1709). Since then, nothing whatsoever has been discovered to prove that William of Stratford-upon-Avon ever put pen to paper, unless one includes the 6 blotted failures to complete the letters of his signature. Yet, even with these, except for the two on his will, it is impossible to prove they were written by the same hand, since nearly all the letters are formed differently; so said Jane Cox of the Public Records Office in London (1964).

History's account of the Shaxpere family, "Willelmum Shaxpere"—marriage license in 1582—husband of "Anne Shaxpere"—debt of £2 in 1601—and parents of "Susanna Shaxpere"—marriage register in 1607) and Judeth (who signed with a cross)—is entirely without witness to William's education. The name is exempt from any reference to literature or to a single writer in the city where he worked; and it records not one word of recognition to identify Shaxpere as William Shakespeare: especially at the time of his death. Legal documents identify him for tax evasion, for restraint against violence, for recovery of debts, as a witness in court, and for the rights and purchase of real estate. In short, his life was unexceptional: just mundane. The tradition that he was Shakespeare is as empty of factual evidence as the grave in which he was laid to rest is depleted of human remains.

This is important, because arguments for Shaxpere having been

Shakespeare are always made in one direction; from the works of Shakespeare to an author known by that name who is identified as Shaxpere. His empty life therefore becomes an easy receptacle for allowing anyone to construct ideas of their own, unfettered by the inconvenience of recorded fact. However, these arguments do not work in reverse. One cannot commence with Shaxpere's life, devoid of a single connexion to literature, scholarship, or education, and then use this as a foundation stone for writing the works of Shakespeare, because the same could be said of almost anyone with his background. But with Edward de Vere having now been named seven times acrostically, especially in an age when acrostics were in fashion, it is with the consistent use of these acrostics appearing in well-published dedications to Shakespeare that arguments for his authorship, and the reason for secrecy, can at the very least be shown to work in both directions.

## Notes

Dr. John Rollett's discovery of the 6-2-4 word skip, together with his discovery of Henry Wriothesley's name enciphered into Thomas Thorpe's letter of Dedication to Shakespeare was examined by three cryptologists from the U.S. National Security Agency, who subsequently recommended it for publication. William Friedman and Elizebeth Friedman's book The *Shakespearean Ciphers Examined* was limited to codes thought to confirm Francis Bacon as Shakespeare. Cardano Grilles were never considered; neither was the Stratford monument, nor Thomas Thorpe's Dedication to the Sonnets, despite the eye-catching challenges they present to cryptanalysts.

## Acknowledgments

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*ESSAY*

# Shakespeare: The Authorship Question, A Bayesian Approach

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**Abstract**—Bayesian probability theory can be helpful in organizing the multiple evaluations required in analyzing complex problems that involve the comparison of several hypotheses on the basis of several datasets. The problem of deciding the authorship of the Shakespeare literary material falls under this heading. We here discuss just one aspect of this major problem: whether or not the available evidence indicates that "William Shakspere," of Stratford-upon-Avon, was a writer. We consider 24 known writers who lived in England at the same time as Shakspere. For each of these writers, and for Shakspere, we follow Price in considering whether or not there exists evidence in each of 10 categories relevant to the literary profession. We find that there is evidence conforming to at least 3 categories for each comparison author, but none for Shakspere. We evaluate the probability, based on this information, that Shakspere was a writer similar to the 24 comparison writers. According to this analysis of Price's data, we find that there is only one chance in 100,000 that Shakspere was a writer. These considerations support the heretical view that Shakspere was not the author of the Shakespeare material.

*Keywords*: Shakespeare—statistics—probability

## Introduction

It is generally—but not universally—assumed that the plays and poems associated with the name "Shakespeare" were written by a man who was born and raised, and died and was buried, in Stratford-upon-Avon in the county of Warwickshire in the West Country of England, ninety miles northwest of London. For recent accounts of the orthodox "Stratfordian" position, and for references to supporting material, one may refer for instance to Bryson (2007) and Honan (1998). The available records refer to the "Stratford" person variously as "Shackespere," "Shackspeare," "Shaxper," "Shaxpere," and "Shexpere," as well as "Shakespeare." It is convenient to follow Price (2001) in referring to the man from Stratford as "Shakspere," reserving the

**TABLE 1**
**24 Comparison Authors and Shakspere**

| Author | DOB | DOD | I-1 | I-2 | I-3 | I-4 | I-5 | I-6 | I-7 | I-8 | I-9 | I-10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Francis Beaumont | 1584 | 1616 | y | | | | | | y | y | | y |
| George Chapman | 1559 | 1634 | | | y | y | | y | y | y | y | |
| Samuel Daniel | 1562 | 1619 | y | y | | y | y | y | y | y | | |
| Thomas Dekker | 1572 | 1632 | | y | y | | | y | y | y | | |
| Michael Drayton | 1563 | 1631 | | y | y | y | | y | y | y | | y |
| William Drummond | 1585 | 1649 | y | y | | | y | y | y | y | y | |
| John Fletcher | 1579 | 1625 | | | y | | | | y | y | y | |
| Robert Greene | 1558 | 1592 | y | | y | y | | | y | y | | y |
| Gabriel Harvey | 1550 | 1630 | y | y | | y | y | y | y | y | y | |
| Thomas Heywood | 1573 | 1641 | | | y | | y | y | y | y | | y |
| Ben Jonson | 1572 | 1637 | y | y | y | y | y | y | y | y | y | y |
| Thomas Kyd | 1558 | 1594 | y | y | | y | | | | y | | |
| Thomas Lodge | 1558 | 1625 | y | y | | y | | | y | y | y | |
| John Lyly | 1554 | 1606 | y | y | | y | | y | y | y | | |
| Christopher Marlowe | 1564 | 1593 | y | | | y | | | | y | | y |
| John Marston | 1576 | 1634 | y | | y | y | y | y | y | y | y | |
| Philip Massinger | 1583 | 1640 | y | y | y | y | y | y | y | y | | |
| Thomas Middleton | 1580 | 1627 | y | | y | | y | y | y | y | | |
| Anthony Mundy | 1560 | 1633 | | | y | y | y | y | y | y | | y |
| Thomas Nashe | 1567 | 1601 | y | y | y | y | y | y | y | y | y | |
| George Peele | 1556 | 1596 | y | y | y | y | y | y | | y | | |
| Edmund Spenser | 1552 | 1599 | y | y | | y | | | y | y | y | y |
| Thomas Watson | 1557 | 1592 | y | | | y | | | y | y | | y |
| John Webster | 1578 | 1632 | | | y | | | | y | y | | |
| **William Shakspere** | **1564** | **1616** | | | | | | | | | | |

DOB = date of birth; DOD = date of death; y = yes for confirmation of evidence for I-1 through I-10, the 10 items related to the profession of a writer.

name "Shakespeare" for the person or persons who individually or collectively produced the "Shakespeare" literary corpus.

Price's (2001) "Chart of Literary Paper Trails" lends itself to statistical analysis. This chart compares personal and literary records left by 24 known

**TABLE 2**
**10 Items of Evidence Related to the Profession of Writer**

| Item | | Yes | No |
|---|---|---|---|
| **1** | Evidence of education | 17 | 7 |
| **2** | Record of correspondence, especially concerning literary matters | 14 | 10 |
| **3** | Evidence of having been paid to write | 14 | 10 |
| **4** | Evidence of a direct relationship with a patron | 16 | 8 |
| **5** | Extant original manuscript | 10 | 14 |
| **6** | Handwritten inscriptions, receipts, letters, etc., touching on literary matters | 15 | 9 |
| **7** | Commendatory verses, epistles, or epigrams contributed or received | 21 | 3 |
| **8** | Miscellaneous records (e.g., referred to personally as a writer) | 24 | 0 |
| **9** | Evidence of books owned, written in, or given | 9 | 15 |
| **10** | Notice at death as a writer | 9 | 15 |

Columms 3 and 4 list the number of comparison authors for which there is ("yes") or there is not ("no") such evidence. A "yes" represents one or more qualifying pieces of evidence.

Elizabethan and Jacobean writers during their lifetimes, together with notice at death as a writer within 12 months of the writer's demise. This chart comprises 10 "categories of evidence."[1] For each category, Price follows historical and biographical practice (see, for instance, Altick & Fenstermaker 1993: especially p. 49, George 1909:48–49, Kendall 1985:xiii, Williams 2003: especially p. 58) in requiring that the evidence be (a) contemporaneous, (b) personal, and (c) related to the relevant profession—in this case, a literary life. Each category is reviewed for each of the 24 known authors and for Shakspere.

The comparison authors are listed in Table 1. The earliest (Gabriel Harvey) lived from 1550 to 1630, and the last (William Drummond) lived from 1585 to 1649. William Shakspere lived from 1564 to 1616. The average years of birth and death of these comparison authors were 1567 (standard deviation 10 years) and 1620 (standard deviation 18 years). As far as chronology is concerned, this seems a reasonable comparison set.

For each of these authors, and also for Shakespere, we note in Table 1 whether or not there is "paper-trail" evidence for each of the 10 categories. These categories are specified in Table 2, where we note the number of comparison authors for which such evidence has been found. We note from Table 1 that, for every comparison author, we have at least 3 items of rel-

**TABLE 3**
**Probability of Evidence**

| Item | Yes | No | *P* | 1 – *P* |
|---|---|---|---|---|
| 1 | 17 | 7 | 0.69 | 0.31 |
| 2 | 14 | 10 | 0.58 | 0.42 |
| 3 | 14 | 10 | 0.58 | 0.42 |
| 4 | 16 | 8 | 0.65 | 0.35 |
| 5 | 10 | 14 | 0.42 | 0.58 |
| 6 | 15 | 9 | 0.62 | 0.38 |
| 7 | 21 | 3 | 0.85 | 0.15 |
| 8 | 24 | 0 | 0.96 | 0.04 |
| 9 | 9 | 15 | 0.38 | 0.62 |
| 10 | 9 | 15 | 0.38 | 0.62 |

For each of the 10 items, columns 2 and 3 list the number of comparison authors for which there is, ("yes"), or there is not, ("no"), such evidence. Columns 4 and 5 list the probability that there would or would not be such evidence for a 25th author, on the assumption that the authors all have similar habits, which result in the creation of literary paper trails with common characteristics including probability of survival. It may be noted that published evidence, such as a personal commendatory verse, has inherently greater probability of survival than does, for instance, a handwritten letter or manuscript.

evant literary evidence. For Shakspere, by comparison, we have none. We now examine this discrepancy statistically.

## Analysis

For each category, we proceed as follows: We determine whether or not there is evidence relevant to that category for each of the $N$ ($N = 24$) comparison authors. Suppose we find such evidence for $K$ of those authors. The problem then is to determine the probability of finding comparable evidence for the "test" author, Shakspere, on the assumption that he belongs to the same group as the comparison authors. We may regard this as a sequence of $N + 1$ trails. We are given the result for the first $N$ in this sequence (the comparison authors), and we wish to estimate the probability $P$ of getting a positive result for the $(N + 1)$th trial (i.e. for Shakspere). We find (see Appendix) that this is given by

$$P = \frac{K+1}{N+2} \quad , \tag{1}$$

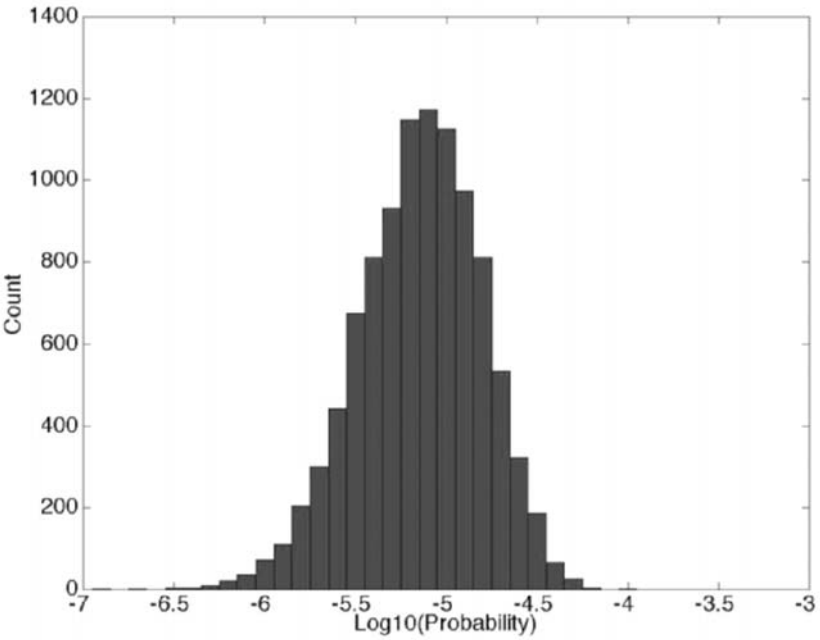


**Figure 1. Histogram of $\log_{10}$(Probability) found from Rule of Succession estimates derived from 10,000 Monte Carlo simulations of the dataset shown in Table 3.**

which is known as the Laplace "rule of succession" (Howson & Urbach 1989, Jaynes 2003). These estimates are listed in Table 3.

As we see from Table 1, the Shakspere entries are remarkable in that they show no evidence for any of the 10 categories that we have found to be characteristic of most of the comparison authors. The question is whether or not this discrepancy is significant. The usual procedure, in statistical analyses, is to compute the probability that a certain result may have occurred by chance. We see from Table 1 that the probability that there might by chance be no evidence for item 1 is 0.31; for category 2 it is 0.42, etc. The probability that all 10 estimates are unrepresented purely by chance is the product of these 10 estimates, which is found to be $10^{-3}$. If we expect evidence relevant to Shakspere to conform to the evidence we find for the 24 comparison authors, there is only one chance in 100,000 that the results concerning Shakspere would have occurred by chance.

One may be justifiably concerned that the above estimate may depend critically on the precise selection of comparison authors. The best response for this concern would be for other Shakespeare scholars to develop independent "charts of literary paper trails." However, one can to some extent judge the dependence of the result on the selection process by using the

bootstrap procedure (Efron & Tibshirani 1993). For each bootstrap simulation, and for each cell in Table 1, we enter a value selected randomly (with replacement) from the column to which the cell belongs. We have carried out 10,000 such bootstrap simulations, and we show in Figure 1 a histogram of the resulting estimates of the logarithm (base 10) of *P*. We see that our estimated value $10^{-5}$ is very close to the peak of the histogram, indicating that our probability estimate is not sensitive to the precise selection of comparison authors.

The probability of obtaining the results of an experiment or test on the basis of an assumed "null hypothesis" (in this case, the hypothesis that Shakspere was in most respects similar to the comparison authors) is known as a "*P*-Value." It is generally recognized that this quantity should not be interpreted as the probability that the null hypothesis is false. (See, for instance, Sturrock 1997, Utts 1996). However, the latter quantity may be estimated by means of Bayesian procedures (Sturrock 1973, 1994). To use the Bayesian approach, one must consider a complete set of hypotheses, such that one and only one of the hypotheses must be true. For the present problem, clearly one hypothesis could be

*H1*. Shakspere wrote the Shakespeare material (plays and poems),

and one may complete the set by adopting

*H2*. Shakspere did not write the Shakespeare material.

We consider the two statements:

*S.1* Shakspere was a writer, and

*S.2* Shakspere was not a writer.

We need to evaluate the probability of each of these statements on the basis of the evidence and on the basis of each hypothesis.

We have found that $P(S1|E) = 0.00001$.

Since one of *S1.S2* must be true, $P(SE|E) = 0.99999$.

If *H1* is correct, he must have been a writer, and one might therefore expect that he would have the same "paper trail" as the comparison authors. This proves to be a key decision. If we make this assumption, then $P(S1|H1) = 1$.

If Shakspere is assumed not to be the author of the Shakespeare material, we can be noncommital and assume that it is even odds whether or not he was a writer, i.e. $P(S1|H2) = 0.5$. Then, since *S1* and *S2* are mutually exclusive, $P(S2|H1) = 0$ and $P(S2|H2) = 0.05$.

We can now calculate the post-probabilities of *H1* and *H2* from

$$P(H_i|E) = \left[ \sum_k \frac{P(S_k|H_i)P(S_k|E)}{\sum_j P(S_k|H_j)P(H_j|-)} \right] P(H_i|-), \quad (2)$$

where $P(H_i|-)$, $i = 1,2$, are the prior probabilities.

If we adopt the noncommittal values $P(H_i|-) = 0.5$, we find that the post-probabilities are $P(H1|E) = 7 \times 10^{-6}$ and $P(H2|E) = 1 - (7 \times 10^{-6})$.

Note that, in the present context, the evidence $E$ comprises Price's (2001) "Chart of Literary Paper Trails," nothing more and nothing less. To get an "absolute" post-probability, one would need to convolve the probability of the hypotheses on Price's evidence with the probability of Price's evidence on some (nonexistent) "absolute" database.

## Further Hypotheses and Discussion

This very strong result hinges on the key assumption that $P(S1|H1) = 1$, which rests implicitly on the assumption that if Shakspere was a writer, he would have footprints similar to those of the comparison authors. The assumption needs careful consideration. If one can plausibly argue that, for instance, Shakspere had some strong incentive to hide the fact that he was a writer, we can no longer conclude from our statistical analysis that he was not a writer.[2] This then leaves open the possibility that he might have been the author of the Shakespeare works. One way to cope with this possibility is to divide *H1* into two sub-hypotheses:

*H1,1*. Shakspere was a writer and did not hide the fact.

and

*H1,2*. Shakspere was a writer but hid the fact (as best he could).

Shakspere would not have been able to suppress all the items of evidence listed in Table 2, but he might (for unknown reasons) have taken steps to suppress those that he could. This seems an unlikely prospect for Shakspere, which could be reflected in a low prior probability for *H1.2*.

If we conclude that Shakspere was not the author of the Shakespeare material, we are left wondering who was. We could then proceed to allow for more options, such as:

*H1*. Shakspere was the sole author of the Shakespeare material.

*H2*. Shakspere produced the Shakespeare material in collaboration with another commoner, or with more than one commoner.

*H3*. Shakspere produced the Shakespeare material in collaboration with at least one member of the upper class,[3] and possibly one or more other commoners.

One must also consider the possibility that Shakspere had no part in the writing of the Shakespeare material. This may be broken down into the following possibilities:

*H4*. The Shakespeare material was written by one or more commoners, excluding Shakspere.

*H5*. The authorship of the Shakespeare material involved at least one member of the upper classes, possibly in collaboration with others, but excluding Shakspere.

Various specific proposals have been made which are special cases of the above hypotheses. The basic Stratfordian position corresponds to *H1*. The proposals for Ben Jonson and Christopher Marlowe are special cases of *H4*. The proposals for Francis Bacon, Edward de Vere Earl of Oxford, and Mary Sidney, Countess of Pembroke, are special cases of *H5*. Hypotheses *H2, H3, H4,* and *H5* allow for possible collaborations.[4]

In pursuing this topic, the first requirement would be to assess or supplement Price's (2001) "Chart of Literary Paper Trails," on which our estimates have been based. An ideal procedure would be for several scholars to agree on a list of comparison authors, and a list of categories of evidence, and then for each scholar to make his or her own assessment of whether or not the evidence for each category exists for each comparison author and for Shakspere. One would then obtain a list of *P*-Values, one for each scholar, which could be converted into post-probabilities for the proposed hypotheses. These post-probabilities could if necessary be combined using Bayesian procedures.

It would be most desirable to evaluate other relevant evidence, which we refer to as "items," such as (a) chronological analysis, comparing the known history of Shakspere and the dates of first mention of the plays and poems; (b) content analysis (as indicative of knowledge of other languages and other countries, and of the interests and pastimes of commoners and of the nobility, etc.); and (c) textual analysis, comparing samples of the Shakespeare material and the writing of specified candidates. We could evaluate each hypothesis on the basis of each "item," and then combine the judgments using procedures described elsewhere (Sturrock 1973, 1994).

## Notes

[1] Price (2008) explains that her list of just 10 categories represents a convenient packaging of diverse pieces of evidence. For instance, Price can list over 30 pieces of evidence for Drayton and more than 20 for Chapman, down to 5 each for Fletcher and Kyd. Hence a checkmark for evidence in a particular category for a particular author may represent a number of

separate pieces of evidence. For instance, Price collapses more than 20 records concerning Marlowe's presence and education at Cambridge into a checkmark for one category of evidence (Evidence of education). For recent updates, see http://www.shakespeare-authorship.com/resources/errata.asp.

[2] If Christopher Marlowe's murder was merely a staged event to save him from the not-so-tender mercies of the Court of Star Chamber, he would have had the best reason in the world to keep a very low profile.

[3] The term "upper class" is used to connote a member of a noble family, or any person with a title (such as Bacon, who was knighted in 1603).

[4] Ms. Price advises me that Shakespeare editors and scholars have long known that other hands were responsible for parts of *Pericles*, *Henry VII*, and parts of the *Henry VI* trilogy, to name the best-known Shakespeare "collaborations" (in quotes, since the nature of such collaborations remains elusive). More recent scholarship has succeeded in identifying or confirming specific collaborators in those and other plays in the canon, as well as finding Shakespeare's hand in plays attributed to others or published anonymously. The process of analyzing texts has been facilitated by the Chadwick-Healy database Literature Online, which provides scholars with tools to compare and quantify vocabulary, function words, syntax, prosody, stylometry, parallel passages, and other linguistic features. These techniques have been discussed in book form by Vickers (2002) and by Jackson (2003). Both books provide the interested student with helpful bibliographies. Recent journal articles include "Shakespeare and the Quarrel Scene in Arden of Feversham" by Jackson (2006) and Vickers (2007) in which Vickers makes the case for the presence of the hand of Thomas Nashe.

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## APPENDIX

Suppose that we begin with a competely open mind, and assume initially that *P* can have any value between zero and unity, with a uniform distribution in that range. We denote the probability that *P* is in the range *p* to *p* + *dp* by *Q*(*p Z*)*dp*, where the symbol "*Z*" indicates that we have zero relevant information. The likelihood of getting a positive result (a "*Y*") for any trial is *p*, and the likelihood of getting a negative result (an "*N*") is *1 – p*. Hence the likelihood of getting *K* positive results and (*N – K*) negative results is

$$L(K|N,p) = p^K(1-p)^{N-K} \quad . \tag{A.1}$$

By Bayes Theorem, we may obtain the "post-probabiity distribution function" for *p,* given *N* and *K*, as follows:

$$Q(p|N,K) = \frac{L(K|N,p)}{\int_0^1 dp' L(K|N,p')} \tag{A.2}$$

Based on this information, the probability of getting a positive result for the (*N* + 1)*th* trial is

$$P = \frac{\int_0^1 dp Q(p|N,K)\,p}{\int_0^1 dp Q(p|N,K)} \tag{A.3}$$

This is found to have the value

$$P = \frac{K+1}{N+2} \quad . \tag{A.4}$$

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*OBITUARY*

## Yvonne Duplessis, 1912–2017

Born in Jauchand in 1912, Yvonne Tuchmann-Duplessis died the 21st of September, 2017, in Paris, at the incredible age of 105. She was a prominent figure in French metapsychics during the second half of the Twentieth Century. Her work was at the crossroads of surrealism, perception, and extra-perception.

She began with a Licence of Letters at the Sorbonne, and then received a philosophy diploma on "The coloration of non visual sensations" (1938) that anticipated her future research. Then, at the University of Montpellier, she prepared a Ph.D. on the "surrealist literary movement" (1945) and published it, after which it became the standard popular book on this topic since 1950 (Duplessis 2003). With its 18 reprints and its translations into 10 different languages, this work led her to become a respected scholar on surrealism.

By chance, following a suggestion at one of her home literary meetings, she went to the experimental meetings conducted by the chemist René Warcollier, every Saturday at the Institut Métapsychique International (IMI). In the mid-1950s, he was one of the most famous researchers on telepathy. At his side, Duplessis became both a participant and a qualified researcher in all areas of metapsychics. She tested PK through famous subjects like Uri Geller (Duplessis & Bardot 1973) and his French avatar, Jean-Pierre Girard, but also teenage "mini-Gellers" (Duplessis & Bailly 1978, 1979–1980), and foreign subjects (e.g., Duplessis & Larcher 1973). She also tested ESP in various conditions: with blind people (Duplessis 1966a, 1968, 1972), and with synesthetes (Duplessis 1966b, 1968), and with new sets of symbolic colored cards (Duplessis & Olivyer 1971–1972).

She also took on institutional responsibilities inside the IMI, both as a Vice-President (1987–1995) and as the president of the Society of Friends of IMI (a sister association). She was dismissed in 1995 when a new board of directors tried to break with the historical orientation of this foundation (Evrard 2016:Chapter 11). But, actually, she retained an indefatigable interest in parapsychological activities, and I remember her active presence in December 2012 during a roundtable that I animated at the IMI around the exhibition "Mediums' entrance: Spiritism and Art from Hugo to Breton" (Audinet et al. 2012). She continued to read and comment on the issues of the *Bulletin Métapsychique* even after a century of her life.

## Dermo-Optics

Duplessis' name is also associated with the history of dermo-optical perception (Brugger & Weiss 2008). In 1956, she began experiments on the interactions between the organism (mainly the skin on the hands) and visible and non-visible colors. This controversial topic was previously introduced in France by Jules Romains (pen name: Louis Farigoule, 1885–1972) under the name "paroptic vision" but was rejected by the same scientific circles that rejected ectoplasmy (Lapicque 1923, Piéron 1923). Duplessis was in contact with both Romains and foreign researchers in the USA and the USSR, as was Professor Novomeysky with whom she corresponded between 1975 and 1990. This phenomena of "vision without eyes," also known as "extra-retinian vision," also attracted strong interest in surrealist circles (e.g., René Daumal's 'Great game').

She received a grant from the Parapsychology Foundation which helped her to publish her works in English (Duplessis 1975, 1985) and allowed her to set up a laboratory in her basement, a now mythical place (MacWilliam 2009). I still remember how, on my first visit in March 2008, after I was immediately conducted into this underground laboratory, to my eternal astonishment I was able to distinguish colored goblets without the help of the eyes. As she explained in some of her publications (Duplessis 1974, 1996), this phenomenon is not to be confused with ESP because some of its properties seem to favor a non-paranormal physical explanation.

Later in her life, she was still exploring this life interest in visible and non-visible colors and their conscious and unconscious impact on behaviors (Duplessis 1984). In 1997, she became the president of the *Center of Information on Color* ("Centre d'information sur la couleur") and contributed to the journal *Couleur*.

## Surrealism and the Paranormal

Because of her double expertise, Duplessis is a pioneer in the exploration of the "paranormal" side of surrealism (Bauduin 2014). It's well-known that the Surrealists made numerous references to the imagination and practice of spiritism (Clair 2003), but the influence of French metapsychics was always quite confused with it (Méheust 2004). André Breton found the psychological approach of spiritism quite "sterile" and tried to break down the barriers between the psychological automatism of Pierre Janet and the marvelous (Bacopoulos-Viau 2012). But this goal was very close to the one of metapsychics—the scientific study of ostensibly paranormal phenomena, now called "parapsychology"—which may be understood as a "surrealist science" (Evrard & Méheust 2012). They both searched

to develop a new kind of "lucid" trance different from the one of spiritist mediums (Méheust 1999). Breton recognized his having been inspired by Myers, Flournoy, Richet, and Sudre (Breton 1934). He had several direct interactions with Duplessis and other members of the IMI. One example is the experiment of 7 January 1927, when Breton was the target of the clairvoyant Pascal Forthuny during a public séance. He chose randomly to sit on a chair, which had previously been the target of a blind precognitive divination attempt, through a sophisticated protocol called "experiment of the void chair" developed by the IMI's director, the physician Eugène Osty. What Forthuny revealed to Breton put him in a crazy state—Osty even had to call the police to remove him and his friends from the IMI—and can be directly linked with his difficult relationship with "Nadja" during that same period (unknown to quite everyone, but which can be retraced now through their published correspondence) (Evrard 2016:Chapter 8). Duplessis had no role in this experiment, but as a IMI member in the next generation, she had many contacts with Breton and shared this legacy of difficult relationships between surrealists and metapsychists.

Outside this anecdotal event, the relationship between Surrealists and metapsychics is marked by what Vivianne Barry (2000) has called "an unsustainable possibility to believe." It was very difficult for them to handle similar scientific efforts to really promote a new view of human nature. Daumal's experiments in dermo-optics and telepathy is a good example of this hesitation about collaboration among spirituality, literature, and science (Besterman 1929), which could also characterize, to a lesser extent, Duplessis' works.

After WWII, Breton was close with the IMI and developed several collaborations with its members. He even used the expression "daily magic" from an article in the journal published by the IMI (Bruno 1954, Breton 1955). Duplessis is the author of a classic book on "the experimental part of surrealism" and its links to metapsychics (Duplessis 1998, 2002). Thanks to this work, some of the interactions between surrealism and metapsychics have now been analyzed and can be put together to give another original look at these experiments conducted during the Roaring Twenties.

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*ESSAY REVIEW*

# Evading the Challenge of Psychical Research

**William James: Psychical Research and the Challenge of Modernity** by Krister Dylan Knapp. Chapel, NC: The University of North Carolina Press, 2017. 400 pp. $32.26 (hardcover). ISBN 978-1469631240.

This book is about William James and psychical research. The author effectively makes two major points. James's interest in psychical research was lifelong and profound. Right through the last years of his life as he was writing his great philosophical works, he kept on heroically with psychical research. Knapp points out that even after all his co-explorers in England (Frederic Myers, Henry Sidgwick, Edmund Gurney, Richard Hodgson) passed away, James doubled-down rather than lost interest, wearing himself weary from hours of working with mediums, often with meager results.

After a lengthy Introduction on the main idea of the book, which is Knapp's methodology, it begins with a nicely textured narrative of James's early life and influences: the combative relationship with his father, life in a carnivalesque New York City, encounters with the redoubtable Sidgwicks and the more emotionally alive Myers and his wife, all very interesting and informative—the contextual grounding of James's evolution as a thinker.

James was a serious, indeed impassioned, lifelong psychical researcher, an important fact about one of America's greatest philosophers and psychologists. This leads to the second point that Knapp takes great pains to discuss: James's method of approach to psychical research. According to Knapp, he was not only passionate and persistent about exploring psychical research but did so in a manner that Knapp calls a tertium quid, or third way.

The third way mediates between fanatical overbelief and fanatical disbelief. The third way cleaves to the value of fact and is guided by a relentless quest for the truth wherever it leads. A true picture of James. Knapp tries to put the new quest called psychical research in the historical context of 19$^{th}$-century Europe, a unique period of cultural ferment and technological transition. Darwinism and mechanistic science and technology had triumphantly arrived on the scene. A new awareness of mortal wounds to Biblical cosmology began to dawn, and people of the West found themselves looking for new ways to reconfigure their shattered worldviews.

With biting concern by many, there were issues about basic human identity. To get simple about it: Am I an immortal soul or a swirl of atoms in the void? The new philosophy sent shivers of angst through the more conscious and reactive part of the populace; and people began to respond in curious ways to their traditional beliefs being undermined by science.

One response was a new movement called Spirtualism, started by the Fox sisters in 1848 in upstate New York. In other places, revolutions were afoot, and empires threw out their tentacles and cannon fodder as the scientific age began to feel its oats.

James, thanks to his capacious sensibility, was attuned to all the tensions, hopes, and uncertainties arising from this vast, unfolding, psychic dislocation. He engaged and had to face spiritualists who had strange experiences causing them sometimes to over-believe and over-emote—not of course the cool way of the philosopher or the scientist. But James also had to deal with professional colleagues, know-it-all, hard-headed materialists.

James avoided the excesses of both sides of the quarrel. This is Knapp's tertium quid. The author throughout the book comes back to his thesis, and James becomes the posterboy of the third way as Knapp elaborates on it in great detail. Knapp continually likes to show how James enthusiastically began on a topic related to psychical research and always had second thoughts but never gave up trying to capture the elusive truth. The persistent effect as the pages turn is to suggest that James was always doubting and qualifying his views on the subject at hand, especially regarding any serious claims about supernormality.

But James did come to definite conclusions; early on, for example, his "white crow," Mrs. Piper, convinced him of the reality of telepathy—a fact whose importance Knapp seems to minimize—after all, here is a challenge *to* "modernity," that is, to the rise of scientific materialism. James comes out decisively on the side of soul and despises the facile reductionism that would reduce St. Teresa to some idiosyncrasy of her brain, a point he makes in *The Varieties of Religious Experience.*

In "The Final Impressions of a Psychical Researcher," he refers to the phenomena called "psychic" as "phenomena of which the supply seems inexhaustible but which scientifically trained minds mostly refuse to look at" (Murphy & Ballou 1960:309). This is an important and distressing finding. The phenomena, he discovers, are abundant, but most scientists refuse to look at the evidence. And the really depressing fact is: It hasn't changed. It's the same scene today. Phenomena still abound, and we still have a minority of serious students of the subject and a majority of ill-informed people who reject it out of hand. This is definitely *not* what Knapp calls our attention to.

On page 2 of the book, we find an explanation of the author's reluctance to appear sympathetic to psychical research. Considering James's interest in "exceptional mental states," Knapp suddenly announces:

> An organized pseudoscientific movement known as 'psychical research' organically emerged in the Western world, reaching its apogee in fin de siecle England, France, Germany, Italy and the United States. . . .

If you believe that psychical research is a pseudoscientific practice, you will tend to ignore or downplay evidence clashing with your belief. This explains why the author constructs his narrative around James toward negative conclusions on the reality of survival and of the paranormal.

The author is intent on proving his peculiarly conceived thesis, but seems less curious about psychical research, and is even less fair to the other founders of psychical research. Myers, whom he castigates for "gushing" and "gullibility" several times, is too "theologically" oriented to qualify as being objective enough to rank as a practitionor of the third way. (There are, however, moments when Myers is treated fairly but grudgingly.) Knapp, in fact, declares that none of the founders of psychical research such as Sidgwick, Gurney, and Hodgson qualify as tertium quid devotees because they all came out of a religious, "theological" tradition. To say this about Henry Sidgwick, who was famous for his critical intellect, is particularly incredible. What is credible is that the author has committed the fallacy of arguing ad hominem.

Despite noting the author's useful and interesting background historical discussions, the reader is not getting an accurate account of psychical research. The third way is to be relentless about facts, but I don't see that scrupulous attention to facts here, and if anything William James is used in this book as a foil to diminish psychical research.

Take the treatment of one of the most famous physical mediums, Eusapia Palladino. The author cherry-picks what is needed to dismiss Palladino as "a cheater." Period. Without acknowledging that most researchers knew all about her often clumsy efforts at deception, and knew how to control for them. In part, this "know-how" consisted of treating her like a human being, and recognizing that her rare talents were not unlike the rare talents of any performing artist. I find no reference here to Eric Dingwall (a practitioner of the "third way") on Palladino. The essay he wrote on her is indispensable, a detailed analysis of the extraordinary phenomena of this physical medium, the variety of investigators including Henri Bergson and Madam Curie, and examines *in detail* the issue of fraud, showing that it cannot be used to explain away the mass of her positive phenomena (Dingwall 1962).

Dr. Joseph Maxwell argues that the Sidgwick group virtually encouraged her trickery by their insensitive treatment of the medium (see *Metapsychical Phenomena* (1905), Appendix A). With the exception of Myers and his wife, the English researchers showed no interest in the subtle psychology of mediumship. Apparently, Eusapia was not invited to join the Sidgwicks at the dinner table; this would not have put her at ease nor been conducive to the expression of her powers. Among the many controlled studies of Palladino demonstrating her physical phenomena that Knapp doesn't mention is perhaps the most compelling, conducted by Feilding, Baggally, and Carrington, seasoned researchers and knowledgeable in matters of legerdemain. All three concluded without even minimal hedging on the reality of her phenomena (Feilding 1963). It cannot be part of the vaunted third way to blithely omit the most powerful evidence in favor of an empirical claim. Eusapia Palladino was a major part of psychical research, and among the most studied by multiple investigators. Any historical treatment of the period needs to get her story straight.

Knapp quotes James, "once a cheat, always a cheat," which was the working principle of the English Society for Psychical Research. James at first thought this a good idea, a way to expedite research. But Knapp uses the maxim to dismiss without discussion the mediumship of Eusapia Palladino. James immediately goes on to say that the maxim is "irrelevant" because simplistic, and launches into the psychological subtleties of lying and cheating. He notes that scientific men sometimes cheat, especially in public lectures, and then gives an example of himself once having cheated in the course of a public lecture, introducing a fiction to support a point he was trying to make. The issue here is that Knapp leaves all this out of his discussion, abridging James as a thinker in order to carry out his predilection for diminishing psychical research.

Knapp uses his thesis of tertium quid as an excuse never to make it seem that he is guilty of holding any positive conclusions about the findings of psychical research. The tertium quid idea is used to distance himself from all the challenging aspects of the material at hand. I understand it might seem dangerous for a serious scholar to appear sympathetic to the controversial material of psychical research. But James did not invest himself so powerfully in psychical research as an exercise in avoiding the extremes of rigid disbelief and blind credulity. He was himself a passionate extremist in the study of psychical research and made positive claims that were totally at odds with the authoritative disbelievers around him whom he didn't hesitate to oppose. James had the kind of courage that the majority of middling scholars then as today tend for pragmatic reasons to lack.

Knapp suggests that James was free from religious need or interest

in survival and was therefore the more honest and reliable investigator. I question this view and think all scientific inquiry of any worth is bound to be driven by all sorts of passion, pre-conception, and intense bias—all with varying degrees of self-awareness. Creative science is a much messier affair than we might suppose, a theme discussed to great effect in the books of Paul Feyerabend.

Myers was romantically passionate about survival, but that didn't prevent him from being an extraordinary researcher, psychologist, and critical thinker. The passion may have skewed some of his judgments, but it may have also helped him to see things that more cold-blooded types fail to see. James's passion to explore psychical research was as strong as Myers', evinced by his work and writings, but it was tempered and more discreet.

On page 259, Knapp remarks that James, "baffled" by the alleged evidence of Hodgson's spirit return, lists "telepathy" as one of the possible counterexplanations. It is of course true that telepathy from the living may be invoked to explain some piece of apparent survival evidence. For that to work you have to accept that telepathy is real. Explaining apparent survival evidence by the psychic ability of living agents is still used to argue against survival. In many striking cases suggestive of survival, the alternative is to assume that some mediums have near-godlike powers that create the illusion of a communicating spirit.

Either way we go here—toward survival or living-agent potentials—things are at odds with the mainstream picture. This is a dilemma for reductionstic "modernity" and deserves to be noted in a book about James and psychical research. The only way out of this dilemma is to deny there are any facts to begin with.

James resisted the encroaching materialism that was beginning to dominate the academy as he resisted the encroaching imperialism that was beginning to overtake the United States.

At about the time he was writing the Ingersoll Lecture on "Human Immortality: Two Supposed Objections to the Doctrine," he was publishing letters and pamphlets lamenting the annexation of The Philippines. This is how James saw this fatal turn toward American empire-building: "We are cold-bloodedly, wantonly and abominably destroying the soul of a people who never did us an atom of harm in their lives" (Kinzer 2017).

The "soul" is not only the psyche of psychical research but an element in the dangerous games of world politics. The annexation was about America's "commercial supremacy," the brutal acting out of the country's deep propensity toward amassing material wealth and power. Annexing The Philippines was about economic expansion at the expense of the soul life of a culture. James saw the connection between intellectual imperialism and

economic imperialism. As the American empire grew to its present status, the words quoted above continue to apply.

I think it a mistake to downplay the challenge of psychical research. For example, Knapp focuses with great energy on James's skeptical (in the classic sense) treatment of the Hodgson-persona survival case. But he is silent about another Hodgson case, this time one that Hodgson worked on when he was alive. This case involved Mrs. Piper and the *soi disant* excarnate George Pellew. This is a particularly challenging case to afterlife dismissers.

In the words of Hodgson:

> I may say generally that out of a large number of sitters who went as strangers to Mrs. Piper, the communicating G. P. has picked out the friends of G. P. living precisely as the G. P. living might have been expected to do. Thirty cases of recognition out of at least 150 who had sittings with Mrs. Piper . . . and no case of false recognition. (Hodgson 1897–1898)

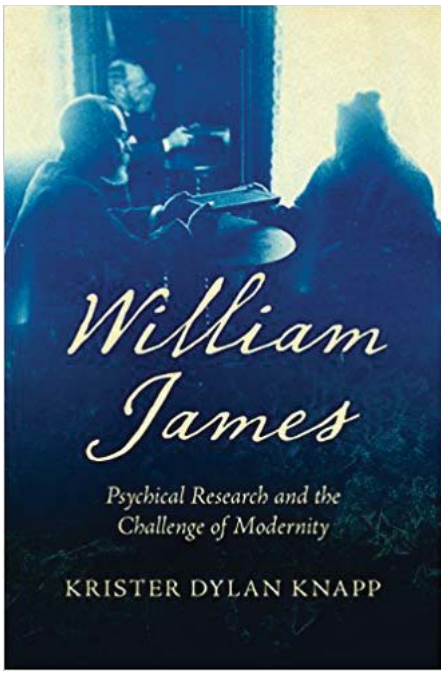
The George Pellew persona recognized and interacted with all thirty people that the living GP knew, leaving them convinced they were intereacting with a deceased man they knew in life. This is a very difficult case to explain away. So it is not surprising that Knapp does not confront the challenge.

Strangely, the author has written a book about psychical research but shows limited interest in the subject, except as a way to discuss his version of an abstraction about evenhandedness that dominates his narrative. Meanwhile we get a skewed picture of James, forever dawdling indecisively on the edge of conviction. What I see is the nimble and multifaceted way that James thought, maintaining a truly skeptical suspense, neither in the end dismissing nor fully accepting Hodgson's survival. This position starkly differs from uninformed dismissal, the standpoint of the "educated" classes today.

In addition to the trance personality producing what seems like evidence for survival, it may also have other functions no less significant such as wisdom and therapeutic talent. "Rector," one of Mrs. Piper's controls, seems in wisdom and gravitas to surpass the normal Mrs. Piper. James wrote of Rector as the

> extraordinarily impressive personality which he unquestionably is. He has marvelous discernment of the inner states of the sitters whom he addresses, and speaks straight to their troubles as if he knew them all in advance. (Murphy & Ballou 1960:114)

Where did this high order performance originate? Was it a discarnate




agent or Mrs. Piper's subliminal genius-playwright? This forces a choice between two alternatives, neither of which is palatable to reductionist tastes. Either her performance provides evidence for survival or evidence for latent mental capacities that transcends anything hinted at by physicalist views of human personality. This is a point about James and psychical research that deserves to be underscored; it represents a huge challenge to a metaphysically reductive modernity.

Knapp touches on an important theoretical point, James's transmission theory of mind (also referred to as the "filter theory"). He recounts the modern history of this conception, citing F. S. Schiller and Kant as predecessors. However, after summarizing the idea used in James's lecture on immortality, Knapp states that it is "atrociously bad" and does away with it in a few sentences (p. 274). He has two objections. The argument "is circular because it assumes a non-corporeal mind exists." This completely misunderstands James's point. He was not trying to prove that a "non-corporeal mind exists." It was about the possible types of relationship between mind and brain, and assumes only that we have minds and brains.

There are two ways to explain the mind–brain connection. In one, we suppose the mind is somehow a physical byproduct of the brain; in the other, we suppose that the brain transmits, detects, or filters—but does not create—our mental experience. James suggests that the brain is an organ of transmission, not of production; this allows for, but does not prove, survival of individual consciousness. It is also consistent with paranormal, ecstatic, and mystical data, according to James. It saves the phenomena. If we embrace the "production" model, however, whole dimensions of human experience are logically invalidated, and ought not to exist. James's theory was both radically empirical in spirit and radically democratic in its openness to diversity.

As for the second point, according to Knapp, the transmission theory is

"essentialist because it assumes that noncorporeal mind enjoys a superior ontological status to that of the material brain"(p. 274). "Essentialist"—I have no idea what it means in this context. "Noncorporeal mind"? Is there such a thing as *corporeal* mind? "Enjoys superior ontological status?" Has causal powers? Knapp seems to object to the idea that minds actually make things happen. But we all know they do. For example, Knapp used his mind to formulate his critique of James's model and then write about it. How can we do philosophy (or history), without using and presupposing the existence of our minds?

James's transmission model of mind and brain has the virtue of being as logically plausible as the idea that matter can produce mind from utterly unmindlike physical stuff. James's purpose is modest but essential; it is meant to show how survival of consciousness may be possible. The "production" model pretty much makes it impossible.

Knapp is helpful in expounding some of James's contributions to the modern discovery and theorization of the marginal, extended, multiple, unconscious, subconscious, and subliminal mind. He is particularly good at unearthing the inchoate proliferation of terms and phrasings for the new ideas that James was struggling to articulate. However, regarding the transmission model, which begins to make sense of higher forms of consciousness, the paranormal, mystical, and ecstatic, so central to William James's deepest interests, Knapp's "critique" completely misses the mark. As to psychical research, the treatment is not just spotty and incomplete, it distorts by *focusing exclusively* on the winding dialectic of James's hesitations and demands for more evidence, and by actively excluding any discussion of the strongest evidence.

I was uneasy with Knapp inserting talk of *fideism* into his description of James's epistemic stand. Fideism is in the main a religious doctrine claiming that something called "faith" is needed to apprehend transcendent truths, *not* science, fact, or experimentation. James was a pragmatist and a voluntarist, and interested in all sorts of transcendence; but he was adamant about the need for facts; and as a radical empiricist, the whole range of human experience was for him fair game. James was a pioneer in the phenomenology of religious experience and was interested in the psychology of belief, but he never relied on faith to draw conclusions. Fideism is the wrong term here, with its implied unscientific religiosity.

On the afterlife question, my picture of James's views does not coincide with the author's. In his last report, James runs through various subtle but opposing arguments about survival, and then says that the point of his exercise was

> . . . simply to show what complicated hypotheses one is inevitably led to consider, the moment one looks at the facts in their complexity and turns one's back on the naïve alternative of 'revelation or imposture,' which is as far as either spiritist thought or ordinary scientist thought goes. (Murphy & Ballou 1960:317)

This is an extraordinary and challenging statement. It brings us back to the unwillingness to properly confront the evidence and to examine it with an open mind. Well over a hundred years and the same incuriosity over these humanly momentous questions remains intact.

Finally, a comment on the author's intriguing subtitle: *Psychical Research and the Challenge of Modernity*. Modernity and its mania for materialism undoubtedly challenge traditional mythologies of transcendence. But psychical research has responded to that challenge and produced its own data that challenge the reductive assumptions of modernity. Knapp's subtitle could be remedied by changing one word: *Psychical Research and the Challenge TO Modernity*. But that would be the title for a different book.

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## *BOOK REVIEW*

**Ancient Ocean Crossings** by Stephen C. Jett. Tuscaloosa, AL: University of Alabama Press, 2017. 508 pp. $49.94 (hardcover). ISBN 978-0-8173-1939-7.

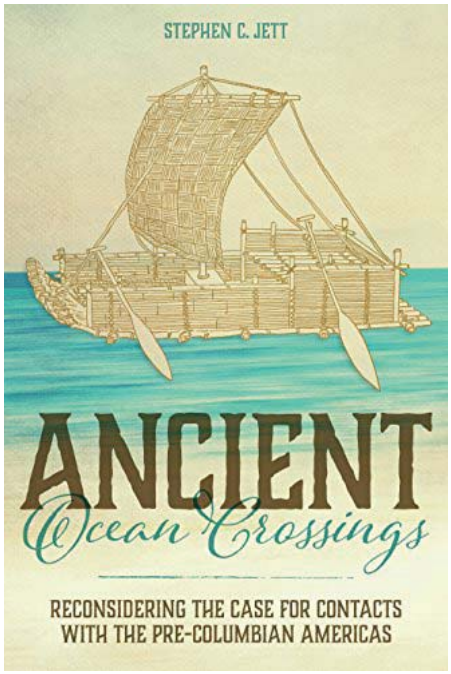
This review should properly be prefaced with two caveats. First, I am not a specialist in the field of human origins. I am not an archaeologist or anthropologist, but a geologist who is generally unfamiliar with the literature covered and reviewed in this book as well as the issues and controversies. Second, I did not read the entire book. This review is based on a reading of the introduction and conclusion while skimming the rest of the text. For those who find it unsettling that a reviewer has not read a book in its entirety, I can only tell you that it is very difficult to find people who are willing to donate the time necessary to read and review long technical books. (I'm still waiting on *JSE* to find reviewers for books I published in 2010). Anyone who is offended by my failure to peruse this volume from front to back covers may satisfy themselves with one-hundred percent of nothing by stopping their reading at this point.

*Ancient Ocean Crossings* examines the evidence and arguments that human cultures in the Western Hemisphere were influenced by occasional contacts with ocean voyagers before Christopher Columbus arrived in the Americas in 1492. As the author notes, it's now conceded that Vikings established a few settlements in North America hundreds of years before Columbus, yet these colonies were short-lived and apparently had little to no influence on American Indians. The ocean crossings referred to in the text are hypothetical voyages that may have occurred in the ten thousand years before Europeans first set foot in the Americas.

There are some striking and unexplained cultural similarities between native peoples of the Old World and the Americas. These include "technical complexities of weaving and dyeing that are shared between southern Asia and the Central Andean region of South America," "stepped temple pyramids that are oriented to the cardinal directions in both Mesoamerica and Cambodia," and the belief "in both China and Mesoamerica, that raw jade can be discovered in nature owing to 'exhalations' coming from the stone" (p. 5).

The two schools of thought regarding the origin of these similarities

are diffusionism and independent inventionism. *Ancient Ocean Crossings* is largely devoted to making the argument for the minority viewpoint of diffusionism. Diffusionists argue that it was possible for ideas and technology to diffuse between the hemi-spheres by pre-Columbian con-tact through ocean crossings. The text is divided into five parts. The first reviews "intellectual obstacles to the notion of early transoceanic contacts" (pp. 13–142). The second, third, and fourth sections treat means, motives, and opportunities for ocean crossings (pp. 143–356). The fifth section is a brief conclusion (pp. 357–361).




Having presented the arguments and evidence, both pro and con, the author is entitled to draw a conclusion. He concludes that "crossings occurred," and that "the sum of the evidence" is definitive (p. 359). The idea that the pre-Columbian peoples of the Eastern and Western Hemispheres "were hermetically sealed off" from each other rests "upon overly simple, insufficiently tested suppositions and incompletely thought-through conclusions concerning both physical geography and human capabilities" (p. 357).

The question of whether or not ancient ocean crossings occurred is a reminder that evidence regarding human origins is scant. Important questions remain poorly resolved. The author of *Ancient Ocean Crossings* appears to implicitly accept the old idea that the Americas were first settled only in late Pleistocene time by migration across the Bering Strait (pp. 2–3). Yet as I have pointed out, there is a plethora of evidence suggesting a human presence in the Western Hemisphere as early as 200,000 years before present (Deming 2013). This was corroborated a few months ago when human artifacts 130,000 years old were found at the Cerutti Mastodon site in California (Holen et al. 2017).

Another example is provided by recent finds from North Africa. Fossils from a single site in Morocco this year obliterated the idea that Homo

sapiens evolved in East Africa about 200,000 years ago. Excavations at the Jebel Irhoud site indicate that modern humans were in North Africa as early as 315,000 years before present (Stringer & Galway-Witham 2017). If fossils and artifacts from lone sites can completely rewrite our knowledge of human history and evolution, surely our theoretical framework rests upon shaky foundations.

The entire issue of ancient ocean crossings is also a case study in how science works. Rather than adopt Chamberlin's idealized model of multiple working hypotheses (1890), most scientists are narrowly focused specialists who operate within the realm of what Thomas Kuhn called "normal science" (Kuhn 1996:10). By the term "normal science," Kuhn meant research based upon an existing intellectual framework. Most researchers see their work as the "further articulation and specification" of the prevailing paradigm (Kuhn 1996:23). Thus an archaeologist wedded to the idea that cultural novelties arise from independent inventionism will tend to automatically filter out and reject all evidence of cultural diffusionism. This mindset quickly evolves into a self-fulfilling prophecy whereby the diffusionist theory is rejected for lack of evidence.

In summary, *Ancient Ocean Crossings* is a well-written and comprehensive review of an important issue in human origins. The author appears to have an in-depth and comprehensive knowledge of the pertinent scholarly literature. The text contains 35 pages of endnotes and the bibliography occupies 61 pages. This book is highly recommended to anyone interested in the history of the human race.

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## *BOOK REVIEW*

**The Dream Interpretation Dictionary: Symbols, Signs, and Meanings** by J. M. DeBord. Visible Ink Press, 2017. 464 pp. $21.95. ISBN 978-1-57859-637-9.

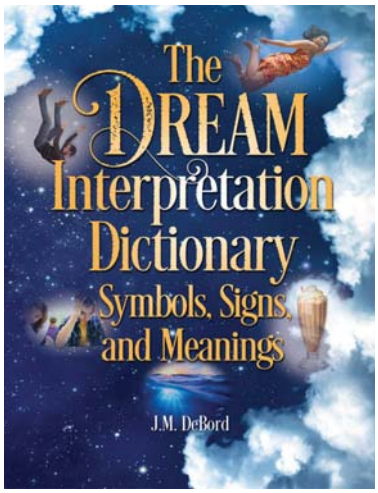
There are many popular books on dreams, and people are naturally curious about what their dreams mean. Dream images, often, leave us stymied as to why they appear and how they relate to our waking concerns and experiences. Dreams can be elusive and mysterious, and it is probably for this reason that people often turn to books on dreams to try to uncover something about themselves.

There are a number of books that guide the individual on how to work with dreams (for example, Delaney 1996, 1998, Faraday 1974, Garfield & Stewart-Garfield 1998, Krippner & Dillard 1988, Moss 1996, 2011, Taylor 1983, 1992, Ullman 2006). These books, and others, offer techniques for working with dreams, individually, one-on-one, or in groups.

Bosnak (1996) has advised that working with one's dreams individually, with no input from another individual, can have discouraging or deleterious effects. This is due to the fact that it is easy for the individual to have blindspots about dream symbolism or psychological resistances to realizing the dream's meaning. Participating in a dream group, such as an Ullman dream group, working one-on-one with a peer technique, such as Delaney's Interview Method, or with a counselor or psychotherapist, can help overcome this handicap.

Research confirms the benefits of working on dreams with others. One study showed that 88% of the participants preferred to work with another person, rather than on their own when working on dreams (Heaton, Hill, Petersen, Rochlen, & Zack 1998).

People who keep dream journals write down any feelings associated with the dream, paying special attention to both the feelings in the dream and feelings upon awakening. Dream journalers also try to relate their dreams to occurrences and concerns in waking life, including any feelings, thoughts, and experiences (e.g., reflecting back on what one was thinking about upon retiring the night before). Journalers try to make connections between the feeling tone in the dream and a waking experience that generated the same or a similar feeling. This can often lead the dreamer to the dream's meaning. By reflecting on related issues in waking life that are mirrored by




the emotions in the dream, individuals can gain insight about themselves.

Journalers also try to make associations to the symbols in the dream. Any images that appear in a dream are personalized for the particular dreamer (Delaney 1998, Faraday 1974, Garfield & Stewart-Garfield 1998, Krippner & Dillard 1988, Ullman 2006). For example, one person may associate France with being free and carefree, as in 1920s Paris. Another may associate France with a terrible vacation.

*The Dream Interpretation Dictionary: Symbols, Signs, and Meanings* can serve as an entertaining starting point to try to uncover a meaning of a dream symbol. However, the suggestions offered should be taken lightly and not be viewed as actual knowledge about an individual or her dream. For example, under the listing of "Animal," the author states, "Dreams . . . use animals to tell stories about you and your life. For example, a dream about a fish dying in a fishbowl symbolically warns of an oncoming urinary-tract infection" (p. 18). Shortly after this passage he states, "What an animal in your dream means to you matters more than pat definitions like the kind found in typical dream dictionaries"! Although I would wholeheartedly agree, one has to wonder whether individuals who read dream dictionaries are searching for what a particular dream symbol *means* and view these books as a source for understanding their dreams. This would be a mistake.

A similar example is included in the section on "Cat," where the author states that Cat is a symbol commonly associated with femininity. Delaney states,

> . . . We can never assume a common meaning for any group of images. . . . I have discovered that sometimes cats remind dreamers of their mothers or sisters or sleek, agile, confident aspects of themselves. I have also found that sometimes cats remind the dreamer of her image of men in general ("independent, don't need much affection, come and go when they please"), or of a particular "black cat" (boyfriend) in a woman's life and bedroom, and of a sneaky, sly, gray cat (man) trying to seduce the dreamer. (Delaney 1996:59).

Few of these personal, individual associations to "cat" would appear in a dream dictionary.

There is also a tendency for the author to protect himself from criticism. When he offers interpretations of a particular symbol, he first states several meanings and then states as in the case of "Cat":

> The common associations with cats can be used as symbolism, but your personal associations matter most. (p. 59).

Since this is indeed the case, it raises the question of how much value dream dictionaries offer.

This book begins with a short biography of the author who lists himself as a "dream interpreter." This term raises an issue of discomfort for most dreamworkers. A dreamworker will help the dreamer to uncover the dream's meaning for himself, through extensive exploration and using tried-and-true techniques, because it is recognized that only the dreamer can know the dream's meaning. Montague Ullman, a psychoanalyst who developed a group method for working with dreams, strongly discouraged the term *interpretation*, which, he believed, brings up associations of an outside authority on the dream's meaning. "Dream interpreter" can indicate to many people that the individual has a special gift of understanding about dreams that the average person does not have. According to The International Association for the Study of Dreams (IASD) in their Ethics and Confidentiality statement,

> Systems of dreamwork that assign authority or knowledge of the dream's meanings to someone other than the dreamer can be misleading, incorrect, and harmful. (Warner 1997)

As a general rule, dream dictionaries, this book included, can serve as light entertainment or as possible suggestions for dream symbol meaning, providing the individual does not take the definition at face value and continues to explore possible meanings of the image by making personal associations. However, the best way to work with and understand one's dreams is to work with another individual or in a group. In lieu of the ability to do this, making personal associations to dream feelings and images can often help to uncover dream meaning.

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*BOOK REVIEW*

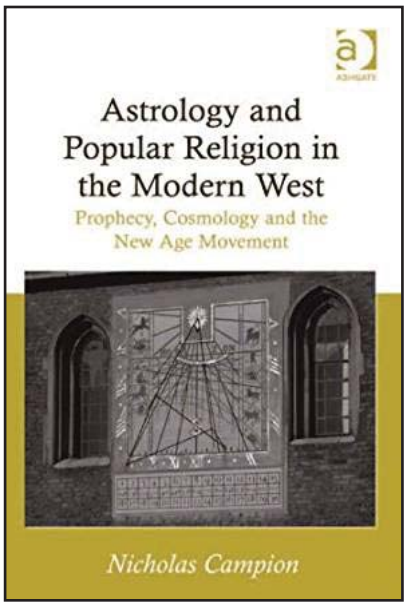
**Astrology and Popular Religion in the Modern West: Prophecy, Cosmology, and the New Age Movement** by Nicholas Campion. London/New York: Routledge, 2016. 254 pp. £34.99 (paperback). ISBN 978-1-138-26162-4.

The book under review is not a new publication. In its first edition, it was published as a hardcover book in 2012. However, it was subjected to the widespread pricing policy that firstly supplies libraries and scientific institutes with extremely high-priced editions, only to follow with a paperback edition at a significantly lower price a few years later; provided, of course, that the book received positive feedback, making such a new edition economically promising.

Thankfully, this seems to be the case with Nicholas Campion's *Astrology and Popular Religion in the Modern West*, because this book is now affordable for somewhat smaller budgets (even if it is not particularly cheap). This work is valuable for both scientists of religion and historians with an interest in the development of esoteric movements and 'New Age' as well as the recent history of astrology from the end of the 19th to the early 21st Century. It is also of interest to astrologers who want to look beyond the horizon of everyday practice, and would like to counter the partly ineffable polemics of ideological skeptics (pseudo skeptics) with substantiated arguments and facts.

Nicholas Campion is experienced in both astrological practice—he was president of the Astrological Lodge of London from 1985 to 1987 and of the Astrological Association of Great Britain from 1994 to 1999, and has written astrological texts for the *Daily Mail*—and science in the context of his role as senior lecturer at the School of Archaeology, History, and Anthropology of the University of Wales Trinity Saint David. Furthermore, he is director of the Sophia Centre for the Study of Cosmology in Culture, which offers an MA in astronomy and astrology. Campion is the author of several important monographs on astrology, including the *History of Western Astrology* in two volumes (Campion 2008, 2009).

With this book, he examines the connection among astrology, religion, esoteric doctrines, and New Age philosophy and spirituality. While reading this book, one very quickly learns that many of the opinions spread by the




public media, but also the familiar assessments made by scientists and skeptics, are badly informed, biased, or wrong because they are based on erroneous assumptions. This does not concern issues such as the notorious argument of equinoctial precession ("in reality, 'Aries' is not 'Aries' anymore") but dealing in a methodologically questionable manner with the concepts of religion, beliefs, superstition, etc., as well as with statistical surveys and data. The book is worth reading for this reason alone. In addition, the author provides interesting and enlightening reconstructions from the perspective of the history of ideas; for instance, how the use of sun sign astrology in magazines and tabloids began and became widespread, which is a thorn in the side of many astrologers today.

The volume is divided into 14 chapters, whereby the first (Introduction: A Million-Dollar Business?) and the last (Conclusion: Modernity and Normality) summarize the intention and results of the work; Chapters 2 through 7 deal with the issues of science of religion and history of ideas in a narrower sense; and Chapters 8 through 13 are primarily concerned with sociological, psychological, and sociology of science issues, and also present the results of surveys conducted by the author himself.

At the very beginning, Campion concisely states the purpose of the book:

> My intention is to place the discussion of astrology's modern status in a context which is wide enough to allow a better understanding of the recent history and present status of esoteric ideas, occult practices, and alternative spiritualities, that potent cultural matrix which alarms evangelical Christians, disturbs skeptical scientists, and perplexes many sociologists. (p. 2)

In short: as a general assessment, he achieves his intention very well.

Campion asks four fundamental questions (p. 3), namely (a) is astrology a New Age discipline? (b) if this is the case, should it then "be seen as a rival to mainstream Christianity"? (c) can a quantification of belief in astrology "indicate the extent of that rivalry"? and (d) "does astrology's continued

existence represent the anomalous survival of a pre-modern superstition in the modern world"? In Chapters 2 through 5, the author provides a historiographical outline of the millenarian concept of a New Age, of New Age thought, and the idea of the beginning of the Age of Aquarius. The two latter concepts are often used synonymously but are based on different principles. The beginning and duration of the Age of Aquarius is astronomically determined (more or less exactly) by the precession of the equinoxes through the zodiac, while the New Age "is always imminent, but never comes" (p. 21). Interestingly, the idea of historical periods being structured on the basis of astronomical criteria is a relatively recent idea, and can be traced back to a theory of history proposed by François-Henri-Stanislas Delaulnaye (1739–1830) that postulates "the foundation of religion in astral worship" (p. 22). It was included in 20th Century astrology and New Age philosophy via theosophy.

After a discussion of the New Age concept referring to Hanegraaff's (1998:96–103) differentiation of New Age *sensu stricto* and *sensu lato*, i.e. in a narrow or broad sense (Chapter 4), and its relation to the concept of the Age of Aquarius (Chapter 5), Campion asks whether astrology is New Age or whether a New Age astrology can be found. As expected, the answer is complex. Astrology can certainly not be assigned to New Age with all its different varieties. However, the theosophically influenced approaches of esoteric astrology of Alan Leo and Dane Rudhyar, which were very important for development during the 20th Century, display typical characteristics of New Age philosophy. But even therein, Campion can differentiate between two forms: one more psychological and the other more theosophical–spiritual.

Chapter 7 is dedicated to the above-mentioned phenomenon of the 'rising' of sun-sign astrology that has strongly shaped the present public image of astrology in general. The reason for this can be found in the efforts of Leo and Rudhyar to make the discipline accessible for a broad public through simplification. This desire to get as many people as possible interested in astrology can probably be reduced not so much to economic considerations but to a theosophically influenced vision of astrology as a philosophy, or a spiritual path, furthering the progress of individuals as well as humanity as a whole, and leading them into a better future. Campion writes, quoting Carl Weschke:[1] "(S)un-sign astrology's mass appeal 'was all part of the adventure of self-knowledge. That is what was really new in the 20th century'" (p. 80).

In Chapters 8 through 11, issues of belief in astrology and the relationship between astrology and religion are examined. Although the question about belief in astrology is always asked in interviews and surveys,

this is considered absurd by most practitioners because, in their view, they deal with practical and evidential experience, and questions of belief are not relevant. Campion reflects on this question and criticizes its thoughtless use by many scientists and critics of astrology, such as Adorno, and many skeptics, for whom the survival of astrology in modern times must represent a paradox. They often refer to extrapolations of findings that were gained on a methodologically questionable basis, as the author is able to plausibly demonstrate, because different forms of astrology were not distinguished. He summarizes:

> (T)he attempt to measure astrology's popularity, and assess whether it is increasing, stable, or declining, is afflicted by anachronistic historical models, simplistic models of nature of belief, and the naive use of data which is fluid, malleable, and unstable. (p. 142)

Campion himself has conducted interviews and surveys on this issue, at first among different demographic groups with relatively small samples, which, however, led to meaningful results following comparison of the groups. His two main conclusions are that the interest in astrology has been highly underestimated in previous surveys, and questions about belief in astrology can be strongly misleading, depending on wording.

He has also interviewed astrologers and has acquired a proper database from the responses to a total of 837 questionnaires. In Chapters 12 and 13, he presents the results of his quantitative studies as well as those of 39 extensive interviews. This enables him to develop a differentiated image of the attitudes of practitioners and—this is one of the most important aspects of the book for me—identify, at the same time, several methodological pitfalls and deficiencies of most of the previous surveys. With this, the book indeed reaches significantly beyond the topic of astrology, because similar problems exist with religious–sociological surveys on New Religion Movements as well as in the field of extraordinary experiences and anomalistics in general.

From my perspective, there is little to criticize about the volume. However, I have to add a 'disclaimer' because I am reviewing a work that is partly outside my academic field of expertise. Although I have looked into the history of astrology, I lack the sound knowledge of an historian of astrology or esoteric movements. Therefore, it is largely accidental finds that attract attention as minor inconsistencies. For instance, the statement: "UFOlogy, which is supposedly dominated by women and depends on personal revelation, is therefore, New Age'" (p. 34) is irritating because the field of UFOlogy is normally thought of as a male domain. A look at the

quoted source in *Skeptical Inquirer* clarifies: In his paper, Sheaffer (2009) distinguishes 'New Age' from 'Science Fiction' UFOlogy, whereby the former is female-dominated and the latter male-dominated. However, this small misunderstanding is not of any importance for Campion's argument because it is only used as an example to characterize New Age.

What is striking, but no surprise: Neither the historical representations nor the surveys consider the German situation. My regret does not reflect a nationalist-driven narcissistic wound at all. It is because there was a special development in Germany during the 20th Century that was important with regard to the relationship between astrology and science, and the ideological assessment of astrology in general (cf. Mayer 2018). It shows an alternative line of development to that dominating English-speaking areas, which led directly from the theosophical movement to psychological astrology in the sense of Carl Jung (via Leo and Rudhyar). The German astrological scene itself was also quite important, and might have enriched the image depicted by Campion if included. However, this criticism should not detract from the merit of this recommendable volume.

## Note

[1] Carl Weschke (1930–2015) was a publisher of astrology books, among others (Llewellyn Publications).

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