Mediumship: review of quantitatives studies published in the 21st century

Marco Aurélio Vinhosa Bastos Jr.[1], Paulo Roberto Haidamus de Oliveira Bastos[1], Lídia Maria Gonçalves[2], Igraíne Helena Scholz Osório[2], Giancarlo Lucchetti[3]

[1] *Universidade Federal de Mato Grosso do Sul (UFMS) – Programa de Pós-Graduação em Saúde e Desenvolvimento na Região Centro-Oeste, Campo Grande, MS, Brazil.*
[2] *UFMS – Faculdade de Medicina, Campo Grande, MS, Brazil.*
[3] *Universidade Federal de Juiz de Fora (UFJF) – Núcleo de Pesquisa em Espiritualidade e Saúde, Juiz de Fora, MG, Brazil.*

Received: 6/30/2015 – **Accepted:** 10/8/2015
DOI: 10.1590/0101-60830000000063

Abstract

Background: Mediumship can be defined as the alleged ability to communicate with deceased persons. The last decade has been particularly productive for this field of research and the study of mediumship can help the understanding of the human mind-brain relationship and provide objective data to the scientific community and to the general population. **Objective:** The aim of this review is to summarize and discuss the results found on recent studies investigating mediumship. Furthermore, we aim to discuss the psychophysiology underlying mediumship and future perspectives for this study topic. **Methods:** A literature search for articles in English, Portuguese and Spanish published from January 2000 up to June 2015 was conducted using three electronic databases (PubMed, Lilacs and Web of Science). Review articles, qualitative studies and studies investigating altered states of consciousness caused by psychoactive substances were excluded. The original search returned 150 articles, but the application of exclusion criteria resulted in the inclusion of 19 articles for final analysis. **Results:** The general findings were: (1) an association of mediumship with good mental health, predominantly in experienced mediums, (2) heterogeneous findings regarding the ability of mediums to provide accurate information what may be due to different study methodologies and (3) incipient studies assessing physiological correlations during mediumistic communications (i.e. hypoactivation of brain regions responsible for cognitive processing and writing planning during psychography compared to a control task; electroencephalographic (EEG) changes and a slight predominance of the sympathetic nervous system). **Discussion:** There is a paucity of empirical data available in this controversial research field. New studies employing rigorous design (*e.g.* triple-blind protocols to test accuracy of mediumistic communications), and sensitive methods are required.

Bastos Jr. MAV et al. / Arch Clin Psychiatry. 2015;42(5):129-38

Keywords: Mediumship, after-death communication, spiritual experiences, mental health, psychophysiology.

Introduction

Although there is no formal consensus on the definition of mediumship, it could be roughly defined as the alleged ability to communicate with deceased personalities on a regular basis[1], or as a set of experiences in which an individual, alleged "medium", maintains regular contact or stays under the control of someone else who has already died or of another immaterial being[2].

At different times and among different cultures in human History there were reports of experiences that could be interpreted as mediumistic phenomena, for example the reception of the Ten Commandments by Moses at the Mount Sinai (Christianity and Judaism) and the reception of information and advice from superior and protector beings (*dharmapalas*) by Tibetan Buddhist monks[3].

During the 19th century and in the early 20th century, many pioneers of modern Psychology and Psychiatry have studied cases of alleged mediums. This was the case of William James, who for many years studied the medium Leonora Piper[4]; Pierre Janet, who wrote a book about the "psychological automatism"[5]; Carl G. Jung, who received his doctorate degree after studying his cousin (S.W.), an alleged medium[6], among others. At that time, other renowned scientists also dedicated their time and effort to study mediumistic phenomena, such as William Crookes[7] and Charles Richet[8].

Talking to "spirits" or being possessed by "spirits" are cultural phenomena found in almost every society worldwide and their relationship with mental illness has been the topic of extensive investigations in the fields of cross-cultural psychiatry and anthropology[9,10]. Observational studies demonstrate a high prevalence (around 80 percent) of individuals who believe in the survival of the soul after death in general population[11,12], and this finding is congruent with the significant popularity that many cultural products covering this topic have (*e.g.:* books, films, novels, TV series)[13].

At present, mediumship is considered to be a form of dissociation[14,15]. Dissociation can be defined as "the occurrence of experiences and behaviors that are thought to exist apart from, or to have been disconnected from, the mainstream of one's conscious awareness, behavioral *repertoire*, and/or self-concept"[16]. The majority of culture-bound dissociation is considered normal, does not lead to distress or impairment, it often arises in willing individuals in appropriate (frequently religious) contexts, and is usually experienced as beneficial. In subjects with pathologic dissociation, the experiences occur in an unsolicited, unruly and socially nontolerated manner, causing considerable distress, with adverse effects on occupational activities and other impairments[17].

Many societies where culture-bound dissociation is observed are characterized by an authoritarian male hierarchy, being oppressive for women and children. Some scholars affirm that in many of these societies, the dissociative experiences are more common in women and they propose that dissociation would be a psychological mechanism with an emotion-regulatory role. This is seen as a socially sanctioned (and even valued) behavior that would allow cathartic expression of forbidden and disowned feelings by individuals living under characteristically oppressive conditions[14,17].

Self-hypnosis is one of the proposed psychophysiological mechanisms involved in dissociation. After carefully analyzing mediumship in the context of *Candomblé*, an Afro-Brazilian religion, Seligman (2005)[14] concluded that mediums would be individuals with a psychophysiological tendency to somatization and to dissociation that, submitted to emotional distress, find in the religion system (and in the assumption of a new social role as mediums) a way for a positive transformation of their identities, leading to a moderation of their somatic and emotional afflictions and to a global therapeutic effect[14,17].

Much of the controversy surrounding mediumship research derives from de fact that it stresses the "mind-brain problem"[18]. The explanation for how the human brain generates mind is one of the

Address for correspondence: Marco Aurélio Vinhosa Bastos Jr. Rua Dom Aquino, 2401/603, Centro – 79002-183 – Campo Grande, MS, Brazil. Phone: (67) 3304-9963/(67) 9962-3181. E-mail: mabastosjr@terra.com.br

greatest philosophical and scientific challenges of the past, the present, and probably of the future[19]. The French seventeenth century philosopher René Descartes put forth the theory of Substance Dualism, supporting the idea that mind (subjective) and body (objective) are different natural substances and that it is the bond of mind to the brain that allows it to think. Mind and brain being independent entities, consciousness could continue to exist (and perhaps communicate) despite the death of the physical body. On the other hand, the dominant materialist perspective argues that consciousness is a byproduct of brain activity, being extinguished with the death of the physical body. A better understanding of mind could only be possible through an increase on the knowledge about brain functioning[20-22].

Contemporary dualist philosophers and scientists sustain that materialism has left a range of questions unanswered, as, for example, how human subjective and affective experiences exert such a decisive influence over body functions. For many dualist and post-materialist scientists the evidences stemming from high quality studies about near-death experiences and about mediumistic communication are strong indicators that consciousness has a non-local character and could survive the death of the physical body[19].

Currently, the three most common explanations for mediumship are: (1) fraud (conscious or unconscious), (2) after-death communication, and (3) telepathy. The first, the materialist model, excludes the possibility that any aspect of the personality can survive physical death and rejects extra-sensorial perceptions (ESP) in general. Thus, if a mediumistic information seems accurate this can only result of deliberate fraud, coincidence or "cold reading" (fishing of information) by the medium. The second explanation, the spiritualist model, argues that the mind (or soul) of the medium communicates with the mind (or soul) of the deceased person through some form of telepathy, obtaining information. From the third perspective, generally defended by investigators of ESP, when an alleged medium is asked to communicate with a deceased person, the medium's answers are given based on clairvoyant access to physical traits of the deceased personality and on telepathic access to the knowledge of the consultant (super-psi hypothesis). The supporters of this explanation, in general, also consider the survival as a plausible hypothesis requiring evidence-based proof[23]. This variety of possible explanations, hard to differentiate one from another, poses significant challenges and complexity for the studies aiming to prove the reality of mediumistic phenomena.

In fact, the last decade has been particularly productive for this field of research and the study of mediumship can help the understanding of the human mind-brain relationship and provide objective data to the scientific community and to the general population. Within this context, the aim of this review is to summarize and discuss the recent results found on studies investigating mediumship. Furthermore, we aim to discuss the psychophysiology underlying mediumship and future perspectives for this study topic.

Methods

Literature review and selection of studies

The Literature search strategy was carried out in three phases, as described below.

Phase 1 (primary Literature search): two researchers (MAVBJ and IHSO) independently screened the list of citations (full text were retrieved for further analysis whenever necessary) to exclude studies that did not address the issue at hand. Any disagreement between the researchers were discussed with a third reviewer (GL), and resolved by reaching a consensus.

Articles in English, Portuguese and Spanish dealing with quantitative investigation of mediumship, published within the time range from January 1st, 2000 up to June 10th, 2015, were selected – hence focusing only on the contemporary scientific aspects of the topic.

Review articles, qualitative studies (either anthropological, theological or ethnographic), studies investigating altered states of consciousness caused by psychoactive substances and letters to the editor were excluded. Regarding the studies testing accuracy of mediumistic information, works that have not applied rigorous designs aiming to eliminate information leakage (i.e. those not strictly adhering to protocols that minimize as much as possible the probability of the alleged medium having access to information about the deceased personality via other common means or via fishing of information) were also excluded. Regarding psychophysiologic correlates of alleged mediumship, due to extreme paucity of available data, case reports were not excluded. All articles not fulfilling the inclusion criteria and which met the exclusion criteria were omitted from the final analysis.

The following databases were evaluated: Web of Science, PubMed and Lilacs. For the Web of Science database, filters were used to limit the search to fields of Psychiatry, Psychology, Neurosciences/Neurology, Religion and General Internal Medicine, as this database also indexes citations in arts and humanities, which are beyond the scope of this review.

The keywords used were: "mediumship", "mediumistic" and "after-death communication". Although a few important concepts and theories accrued from anthropological and ethnographic studies about Possession Trance are cited, this is not the focus of this review.

Phase 2 (secondary Literature search): with the aim of identifying studies that could have been missed in the primary search, references lists of initially included articles were screened and the same three keywords were evaluated in Google Scholar. Only the first 100 references from Google Scholar were evaluated. The same inclusion and exclusion criteria were applied in both phase 1 and phase 2.

Phase 3 (critical review of studies): the included articles were evaluated regarding number of participants, methods applied, comparisons and main findings. The studies were grouped in the following three categories based on their methodology and type of outcomes evaluated: (1) mediumship and psychopathology, (2) testing the accuracy of information provided by mediums and (3) psychophysiological correlates of mediumship. These categories were adopted based on the classification proposed by Jinks (2013)[24] for quantitative research on mediumship.

Table 1 and figure 1 summarize the search and selection strategy.

The last section of this review consist of future perspectives for the study of alleged mediumship, especially in its psychophysiological aspects, and due to paucity of available empirical data on this field, it was based on authors' opinions and on recent reviews dealing with other dissociative and spiritual experiences.

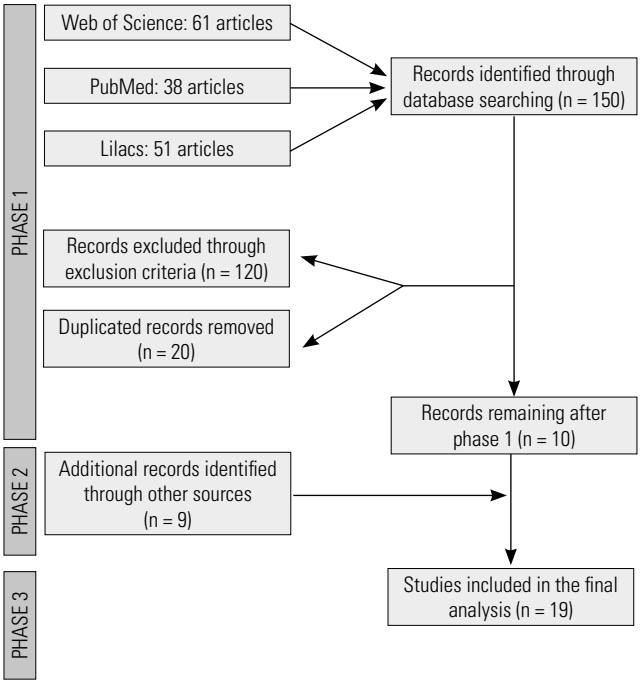


Figure 1. PRISMA (The Preferred Reporting Items for Systematic Reviews and Meta-Analysis) flow diagram.

Table 1. Selection of studies – phase 1

Term	N° of articles found	N° of articles excluded	Reasons for exclusion	N° of articles included in final analysis
	Electronic database: Web of Science			
"Mediumship"	40	32	9 ethnographic studies 8 literature reviews 8 historical perspective articles 7 other reasons	8
"Mediumistic"	17	16	5 historical perspective articles 4 literature reviews 4 ethnographic studies 3 other reasons	1
"After-death communication"	4	4	2 qualitative studies 1 literature review 1 ethnographic study	0
	Electronic database: PubMed			
"Mediumship"	21	13	6 historical perspective articles 2 ethnographic studies 2 literature reviews 3 other reasons	8
"Mediumistic"	12	10	2 ethnographic studies 2 historical perspective articles 6 other reasons	2
"After-death communication"	5	5	3 qualitative studies 1 literature review 1 letter to editor	0
	Electronic database: Lilacs			
"Mediumship"	30	21	8 historical perspective articles 6 literature reviews 4 ethnographic studies 3 other reasons	9
"Mediumistic"	17	15	5 historical perspective articles 3 literature reviews 2 ethnographic studies 5 other reasons	2
"After-death communication"	4	4	2 qualitative studies 1 literature review 1 letter to editor	0
	All Databases			
		20	Duplicated articles among those included	
Total	150	140		10*

* The phase 2 of the search led to the inclusion of 9 additional articles totaling 19 articles for the final analysis.

Results and discussion

The phase 1 (primary Literature search) of the search led to the retrieval of a total of 150 articles. The application of the exclusion criteria resulted in the exclusion of 140 articles and the inclusion of 10 articles in this phase. As shown in table 1, the most frequent reasons for excluding articles, in descending order, were: historical perspective studies (34 articles), literature reviews (25 articles) and ethnographic studies (24 articles).

In phase 2 (secondary Literature search) of the search, screening of references lists and evaluating the keywords in Google Scholar led to the inclusion of 9 additional articles.

In phase 3 (critical review of studies), all 19 studies found were evaluated in terms of number of participants, methods applied, comparisons and main findings.

Tables 2, 3 and 4 briefly describe the 19 included studies. The main results are as follows:

(1) Mediumship and psychopathology (Table 2)

Most studies suggest that mediums have good mental health, are socially well adapted and occupationally active. However, one must notice that all but one study[25] took place in Brazil, so caution is necessary when trying to extrapolate these conclusions to other countries, since mediums have an established social role in Brazil[26], which may not be the case in other societies. It is known that a society's dominant ideas about questions like the dualism, the soul and paranormality influences the way dissociative experiences are viewed and whether they are tolerated or not[17].

Our findings corroborate with the theory proposed by Seligman[14] that affirms that mediumship has a therapeutic role to certain individuals under psychological distress, who find in the religious system a way for a positive transformation of their identities. The scores of mental health and control of the dissociative experiences are clearly different if the individuals are beginning to participate in the religion, as in the studies of Menezes Jr. *et al.*[2] and Alminhana *et al.*[27], or if they have many years of practice as socially sanctioned mediums, as it was the case in all the other studies, being significantly worse in the former case.

However, the psychosocial stressors theory may not fully explain the Brazilian Spiritist participants, since this group has one of the country's best socioeconomic status and best education level among all the other religious groups[28]. For instance, in the study of Moreira-Almeida (2004)[29], the financial situation of Spiritist mediums was not different from mentally healthy control participants, highlighting that other possible explanation for this phenomenon may be considered[14].

Table 2. Studies on mediumship and psychopathology

Study	Participants	Method	Comparisons	Findings
Negro *et al.* (2002)[73]	110 experienced Kardecists mediums (for 21 years on average)	Self-report questionnaires (SRQs) evaluating personality traits (happiness, sociability, religiosity, temper, mediumship) and dissociative experiences (Dissociative Experiences Scale – DES)	Correlation analysis between dissociation scores and sociability and adaptation scores. Correlation analysis between training in mediumship and control of dissociative experiences	Sociability and adaptation scores compatible with normality despite high dissociation scores. Majority (94%) considered to have control over the mediumistic experience. Positive correlation between formal training in mediumship and control of dissociative experiences
Moreira-Almeida (2004)[29]	115 Kardecist active mediums (for 16 years on average) and 34 subjects without previous or current mental disorder	Semi-structured interviews and self-report questionnaires assessing: socio-demographic data, mental health and phenomenology of dissociative experiences	Comparison of prevalence of hallucinatory experiences between groups. Correlation analysis between dissociative symptoms scores and intensity of mediumistic activity with mental health scores and social adequacy	Higher prevalence of hallucinatory experiences in mediums, with normal levels of social adequacy. There was no correlation between the intensity of mediumistic activity and mental health scores and social adequacy
Seligman (2005)[14]	Five groups: – 11 female *Candomblé* mediums – 10 non-medium initiates, – 20 uninitiated religious frequenters, – 20 control participants from outside the religion, matched for socio-economic status, – 10 control participants from outside the religion and from a higher socioeconomic status	– Instrument to screen for anxiety and depression (QMPA) – State Trait Anxiety Inventory (STAI) – Dissociative Experiences Scale (DES) – Semi-structured interviews	Comparison between mediums and nonmediums with varying degrees of proximity to *Candomblé* and the mediumship role	Group from higher socioeconomic status with significantly lower levels of anxiety and depression (QMPA). Significantly higher number of somatic symptoms reported by mediums. No difference between groups for STAI scores. DES scores higher in the 3 religious groups (none above clinical cut-off). No correlation between mediumship and DES score
Moreira-Almeida *et al.* (2008)[26]	24 Kardecist active mediums, being 12 mediums with (+) scores in the screening for mental disorders in primary care [SRQ +] and 12 mediums with (-) scores [SRQ -] 166 patients with Dissociative Identity Disorder – DID (data from this group was extracted from literature)	Self-report *questionnaire* assessing social adequacy, psychotic symptoms and structured interviews with mediums to evaluate diagnostic criteria for DID	Comparison between subgroups of mediums. Comparison between mediums and patients with DID	From the mediums, no one met criteria for DID. The only difference observed among the subgroups of mediums was social adaptation [slightly worse in SRQ (+)]. No difference between the group of mediums and DID group for psychotic symptoms, but better mental health and social adjustment in mediums
Roxburgh & Roe (2011)[25]	80 British spiritualist mediums and 79 control subjects (non-mediums, attended the same religion, without any diagnosed mental disorder)	Self-report *questionnaires* assessing personality traits and mental health indicators	Comparison between mediums and control group (healthy individuals from the same socio-cultural context)	Mediums scored significantly higher in well-being and lower in psychological stress. There were no significant differences among groups regarding dissociation or personality traits that could indicate psychopathology or proneness to fantazise
Menezes Jr. *et al.* (2012)[2]	115 individuals seeking help in spiritual centers due to their so-called mediumistic experiences	Semi-structured interview with a psychologist to evaluate socio-demographic data, mental health history and dissociative experiences	Qualitative exploration to assess the presence or not of nine criteria considered suggestive of non-pathological anomalous experiences (AEs)	The most frequent AEs were visual (63%) and hearing (54%) hallucinations and "perception of spirit" (53%) For most of mediums, AE did not bring socio-occupational losses, were brief, episodic and benefic; but 59.2% related them with emotional distress and 54.8% did not present control over experiences
Alminhana *et al.* (2013)[27]	115 individuals seeking help in spiritual centers due to their so-called mediumistic experiences	Self-report questionnaires to assess personality traits, quality of life and religiosity	Comparison between experimental group, general population and individuals with mental disorders (data of control groups extracted from literature)	Individuals with AE presented intermediate scores on personality traits, religiosity and quality of life when compared with general population and individuals with mental disorders. Authors hypothesized that mediums may be a population at higher risk for mental disorders

(2) Accuracy of information provided by mediums (Table 3)

Quantitative research on alleged mediums has been done for more than a hundred years, and meanwhile the designs of studies have been progressively improved as to eliminate information leakage and telepathy as explanations for the reception of accurate information by mediums[23]. Research protocols reproduce the habitual situation of a friend or relative (the named "sitters") of a deceased person consulting a claimed medium looking for postmortem information about this person, but they apply a "triple blind" design[30]. That is, mediums are blind to the identities of the consultant ("sitter") and of his/her related-deceased person; the researcher interacting with the mediums (acting as a proxy for the consultant) also remains blind to the identities of the consultants and his/her related-deceased person; and consultants who score the accuracy of the "readings" remain blind about the information source (reading really intended for him/her *vs* decoy reading)[18].

In the present review, only studies considered to have sufficient control against information leakage (i.e. which strictly adhered to triple-blind protocols) were included. Hence the works of Roy & Robertson[31] and Schwartz *et al.*[32], although consist of important contributions as exploratory methods, were excluded (they applied methods where mediums had direct contact and talked to the consultants, among other shortcomings). Data from experiment 2 of the study of Kelly & Arcangel[33] was also excluded from this review because of lack of strict adherence to triple-blind protocol (mediums received pictures from the deceased individuals, many of the sitters were colleagues or friends of one of the investigators, and this investigator knew some of the deceased individuals). Altogether the results of the well-controlled studies included in this review show: (a) in two studies[30,34] (totaling 28 mediums and 102 readings) the sitters' accuracy ratings of specific information from target readings were statistically higher than for decoy readings; and (b) in three[33,35,36] studies (totaling 10 mediums and 44 readings) there was no statistical difference in the fit scores assigned by sitters for the target or decoy readings.

Interestingly, the "triple-blind" design was used in all these studies, but there were slight methodological differences between them that can have influenced the outcomes. For example, in the studies with positive results, the sitters were asked to decide which was the fittest between only two readings, while in "negative studies" the sitters needed to decide among three to seven readings. Moreover, "positive" but not "negative" studies have used a pairing procedure of the deceased persons to optimize differences (in categories like age at passing, hobbies, physical description, cause of death). Hence, it seems that, for methodological reasons, choosing the target reading was less difficult for sitters of the "positive" than for "negative" studies.

Different from the others, the study of Rocha *et al.*[37] did not use a controlled design, choosing a retrospective approach. Authors screened published and unpublished letters that were psychographed (allegedly written under the influence of a spirit) by a Brazilian medium, Chico Xavier, who died in 2002. Then, a set of 13 letters was selected because these letters contained much specific and objective information about a deceased person, and living relatives and friends of this person agreed to participate in interviews with the investigators to verify the fit and accuracy of the mediumistic information conveyed. Among 71 items of specific information extracted from the letters, a high percentage (97,2%) was scored as having a "clear and precise fit". As authors acknowledge, one significant limitation of this type of study is that the scoring may have been subject to memory bias, as letters were written more than forty years before. However, three "drop-in" communications ("situations where allegedly a deceased personality communicates via the medium without the request of relatives or friends"[37]) were identified in the letters. Pieces of specific information from these communications were objectively verified, and they proved to be true.

(3) Psychophysiological correlates of mediumship (Table 4)

The most common findings concerning psychophysiological correlates of mediumship were: increased noradrenalin levels during possession trance in a controlled study[38], increased muscle tone in a case report[39], increased heart rate[38,39] and increased spectral power in various EEG frequency bands during mediumistic communication and possession trance[40,41]. None of the studies included in this review has demonstrated an ictal pattern on EEG during the experience. These results could point to a state of mental and physical arousal during the phenomena[42,43].

On the other hand, the only study using functional neuroimaging, in this case a Single Positron Emission Tomography (SPECT), showed a reduction of cerebral blood flow (CBF) in left culmen, left hippocampus, left inferior occipital gyrus, left anterior cingulated cortex, right superior temporal gyrus and right pre-central gyrus (brain areas associated with memory, language and writing planning) during mediumistic communication (psychography) as compared to a control task. There was also a surprising negative correlation between the CBF in these areas and the linguistic complexity of the written text produced during psychography[15]. Taken together with the case series report of a slowing of background EEG activity in some mediums during psychophony (allegedly speaking under the influence of a spirit) and psychography[44] these data could suggest the activation of fewer neuronal populations during the dissociative experience.

Considering the dominant current psychobiological explanation for the possession trance and mediumship, there is a number of authors, which propose the role of self-hypnosis[14,17]. Hypnosis is seen as a state of focused attention and concentration, inner absorption and a relative suspension of external awareness. There is evidence for a correlation between hypnotizability and number of dissociative symptoms and that patients with dissociative disorders have higher rate of hypnotizability. Although differences occur according to the phase of hypnotic procedure (relaxation – induction – suggestion – waking up) and to which actions are suggested to the individual, many studies show increased theta power during hypnosis, indicating an intensification of attention processes. Regarding functional neuroimaging, the most characteristic finding of the hypnotic state is the hypoactivity of the "extrinsic brain network", which encompasses lateral fronto-parietal regions and which has been linked to cognitive processes of external sensory input. The reduced activity of this network can reflect a blocking of the sensorial systems to receive stimulus. A structural Magnetic Ressonance study has shown neuro-anatomical differences between high and low hypnotizable individuals: larger (32%) rostrum of the corpus callosum in highs than in lows. This area is involved in the information transfer between pre-frontal cortices and in attention allocation. The authors suggest that high hypnotizable subjects would have more efficient frontal attentional systems, with greater ability to monitor performance and to inhibit undesirable stimulus for conscious awareness[45].

Although it is not possible to say that spontaneous dissociative symptoms, like mediumship, share strictly the same neurophysiological processes of hypnosis, evidence suggest that many parallels can be drawn between them[45]. There are already some reports of research groups using hypnosis on healthy individuals to "model" dissociative symptoms (*e.g.* "automatic writing") and more easily study them in the neurophysiology and neuroimaging lab[46,47]. This strategy might bring valuable complementary data for the understanding of the neurobiology of alleged mediumship.

Future perspectives

Mediumship is a controversial research topic with ongoing experiments. Regarding its relation to psychopathology, in practical terms, it is important to avoid the risk of a "category fallacy". In other words, here both risks exist and should be avoided: pathologizing normal religious experiences and considering potentially dangerous clinical conditions as a common religious/spiritual experience. Thus, if such cases of mediumship and possession come to medical attention, besides a comprehensive assessment of the sociocultural implications and of the possible secondary gains for the individual, a standard psychiatric evaluation should not be neglected. In this evaluation, not only the patient but also family and community

members should be interviewed, so that the extent of impairment of daily life by the dissociative experiences can be inferred. Possible psychiatric comorbidities should also be sought. The most commonly used type of therapy for possession disorders is psychotherapy, and some scholars advise it should focus on the stressing factors that can initiate the dissociative phenomena[48,49].

Concerning studies on the accuracy of information provided by mediums, their design must reach a balance between control against information leakage and the provision of a research environment that optimizes the phenomenon for both the medium and for the alleged communicating deceased person[36,50-52]. Apparently, among the reviewed studies, the protocol proposed by Beischel is the most successful in meeting these conditions, and it requires replication by other research groups to broaden the database and to eventually demonstrate or not the scientific evidence of mediumship. Notwithstanding, some investigators affirm that even accurate results of mediumship studies do not prove the postmortem survival hypothesis and that the best explanation would still be some form of telepathy between the medium and other "living agent psi"[53].

Studies evaluating physiological correlations during mediumistic communications are still very incipient. Here, as for other types of psychophysiologic studies, the employment of a process-based approach is recommended[54]. Before initiating any data collection, a detailed definition of the phenomenon, based on systematic observation, is necessary. This should include a definition, as precise as possible, of when the mediumistic communication begins and when it ends. Proper initial definitions about the process under investigation are necessary if one aims to obtain valid physiological research data about it[55].

Table 3. Studies on the accuracy of mediumistic information

Study	Participants	Method	Comparison	Findings
O'Keefe & Wiseman (2005)[35]	5 professional mediums and 5 consultants ("sitters")	Triple-blind study, properly executed. Five "readings" were itemized, grouped and sent to consultants for "blind" scoring of items for accuracy and applicability	Comparison between scores of "readings" really intended for the consulent with the scores of readings made for other consultants	There was no significant difference between scores. In only one occasion the consultant assigned higher scores to the "reading" that was directed to him.
Beischel & Schwartz (2007)[30]	8 mediums (who had previously demonstrated ability to provide mediumistic information with accuracy, according to the authors) and 8 consultants (highly motivated to receive information from deceased relatives)	Triple-blind study, properly executed. Each "blind" consultant received two "readings" to score accuracy and choose which of them better applied to his/her deceased family member	Comparison between "reading" scores that supposedly came from the deceased family member and "reading" scores that were directed to other consultants	The consultants chose the correct "reading" (directed to them) in 81% of cases (13/16). The "reading" scores from messages directed to them were significantly higher than control "reading" scores
Jensen & Cardeña (2009)[36]	1 professional experienced medium and 7 consultants ("sitters")	Triple-blind study, properly executed. Seven "readings" were itemized, grouped and sent to consultants for "blind" scoring of items for accuracy and applicability	Comparison between scores of 7 "readings" (one reading really intended for the consultant and 6 other decoy readings")	Scores assigned by the consultants for neither global nor specific information from "target readings" were significantly better than expected by chance. No sitter chose his target reading as the most applicable. Measures of paranormal belief of sitters positively correlated with rating of reading
Kelly & Arcangel (2011)[33]	Experiment 1: 4 mediums and 12 consultants Experiment 2: 9 mediums and 40 consultants	Triple-blind study adequately performed only in experiment 1 In experiment 2: methodological weaknesses substantially increased the likelihood of "fishing" or information leakage	Comparison between "reading" scores that supposedly came from the deceased family member and "reading" scores that were directed to other consultants Note: consultants chose one reading among three in experiment 1 and chose one reading among 6 in experiment 2	Experiment 1: only 2 of 12 consultants were able to identify the "reading" directed to them (3 hits would be expected to occur by chance) Experiment 2: 14 of 38 consultants chose the correct "reading" and 30 consultants positioned the "reading" directed to them among the three first places s in the accuracy rank
Rocha *et al.* (2014)[37]	5 relatives and friends of a deceased personality (JP), who is the alleged spiritual author of 13 *psychographed* letters (by the spiritist medium Chico Xavier)	Verifiable items were extracted from the letters. Interviews with participants to assess items' fit and accuracy and probability of information leakage. Based on the interviews, three researchers scored each item	Comparison of types of verifiable information. Comparison of scores of fit and of information leakage probability between the items from the first letter and the subsequent letters	The percentage of "clear and precise fit" among the 71 verified items was 97.2%. Considering the first letter (written 40 days after JP´s death), 100% of the items were scored as "very unlikely leakage". For subsequent letters, 63% of the items were scored as "unlikely leakage"
Beischel *et al.* (2015)[34]	Experiment 1: 14 mediums and 28 consultants Experiment 2: 20 mediums and 40 consultants (total of 20 mediums, 18 of them female, with same characteristics as from study of Beischel & Schwartz, 2007) (total of 86 readings)	Experiment 1 & 2: Triple-blind study, properly executed. Each "blind" consultant received two "readings" to score accuracy and choose which of them better applied to his/her deceased family member Experiment 2: 12 of the readings took place during an examination of EEG of 6 mediums	Comparison between "reading" scores that supposedly came from the deceased family member and "reading" scores that were directed to other consultants	The scores assigned by the consultants for both global and specific information from "target readings" were significantly higher than for "decoy readings". Significantly higher percentage accuracy of "target reading" items

Table 4. Studies involving psychophysiological correlates of mediumship

Study	Participants	Method	Comparison	Findings
Kawai *et al.* (2001)[38]	15 subjects presenting an alleged possession trance while participating in a religious ritual and 9 subjects participating in the same religious ritual but not presenting a possession trance	Analysis of norepinephrine, dopamine and beta-endorphin levels in blood samples. Assessment of heart rate and blood pressure	Comparison of plasma levels of the analytes and of its variation (Δ) at baseline and immediately after the possession trance. Comparison of the trance and control groups	The increase in plasma levels of norepinephrine, dopamine and beta-endorphin was significantly higher in the group presenting a possession trance. There was no significant difference among the groups regarding blood pressure and heart rate
Oohashi *et al.* (2002)[40]	One subject during an alleged possession trance while participating in a religious ritual and two subjects participating in the same religious ritual but not presenting a possession trance	Electroencephalography (EEG)	Spectral power analysis for each EEG frequency band comparing baseline *vs* trance *vs* recovery in the subject who went into a trance compared with the other two	An ictal EEG pattern was not observed. In the individual who went into a trance, it was observed an intense and significant increase of theta and alpha power during the trance state, when compared with the pre-trance. These changes persisted in the post-trance period. In the 2 control subjects, no significant changes in spectral power were observed among the periods
Krippner *et al.* (2008)[39] Data colleted in 1999	2 mediums (1 spiritist presenting psychography and 1 from *Camdomblé* presenting psychophony) and 1 control (no mediumship, same socio-cultural environment)	Electroencephalography (EEG) Assessment of heart rate, muscle tone and skin conductance	Comparison of the percent time in which each EEG frequency band was observed during: baseline *vs* mediumistic communication (MC) *vs* recovery Comparison of measurements obtained during: baseline *vs* mediumistic communication (MC) *vs* recovery	Spiritist medium: increase in the percentage of alpha and beta waves during MC when compared with baseline. This pattern persisted during recovery *Camdomblé* medium: increase in the percentage of theta waves during MC when compared with baseline Control subject: increase in the percentage of alpha waves during control task In mediums, there was an increase in muscle tone and slight increase in heart rate during MC when compared with baseline. In recovery phase, there was a decrease in muscle tone and heart rate. There was a reduction of the mean skin conductance during the MC in one medium and an increase in the other medium. In the control subject there was no significant change in any of these parameters at the different periods
Hageman *et al.* (2010)[44]	9 mediums (6 presenting psychophony and 3 presenting psychography)	Electroencephalography (EEG) Note: insufficient description of methodology	Analysis of EEG record looking for the presence of epileptic discharge during baseline *vs* mediumistic communication (MC) *vs* recovery	Ictal EEG pattern was not observed. A slowing of background activity on the EEG during MC was observed in 6 participants
Peres *et al.* (2012)[15]	10 spiritist mediums (allocated in 2 groups: 5more experienced and 5 less experienced)	Functional neuroimaging (SPECT). Evaluation of linguistic complexity of texts written under controlled conditions	Comparison of regional cerebral blood flow (CBF) during automatic writing (psychography) and during control task (writing a text in the usual state of consciousness). Correlation analysis between neuroimaging findings and linguistic complexity of the texts	Hypoactivation of brain regions responsible for cognitive processing and writing planning during psychography Inverse correlation trend: increasing levels of linguistic complexity of the texts produced during psychography associated with gradual reduction in CBF in brain regions responsible for cognitive processing and writing planning
Delorme *et al.* (2013)[41]	6 professional mental mediums	Experiment 1: triple-blind design to investigate accuracy of the information provided by mediums + Electroencephalography (EEG) Experiment 2: analysis of EEG records of mediums while performing 4 different mental tasks: perception, memory, imagination and mediumistic communication (MC)	Experiment 1: correlational analysis between the accuracy of mediumistic information provided and the EEG spectral power on each frequency band during MC Experiment 2: Comparison of EEG spectral power on each frequency band during the 4 different mental tasks	Experiment 1: significant correlation was observed in 2 mediums (in one medium theta power was negatively correlated with accuracy and in the other alpha power was positively correlated with accuracy) Experiment 2: The most significant difference occurred between mediumistic communication and the mental task of perception Gamma and beta were the frequency bands in which there were more electrodes revealing significant differences during the diverse mental tasks

Moreover, because spiritual and religious experiences are complex and multidimensional, and because mediums usually describe them in terms of changes in perception, cognition and affect[52], the measurement of the subjective elements of the phenomena is highly advisable. Posteriorly, a possible correlation among these psychological, affective and cognitive elements with specific brain regions and brain functions can be explored[56,57]. Some examples of instruments that can be used for this purpose are: the Phenomenology of Consciousness Inventory (PCI)[58], the Assessment Schedule for Altered States of Consciousness (ASASC)[59] and Hartmann's Boundary Questionnaire[60], among many others. These *questionnaires* quantify different phenomenological elements of consciousness and can be useful for helping to distinguish qualitatively different ASC[57]. Likewise, considering that mediumistic phenomena usually involve dissociative experiences, it is also advisable to conduct a baseline assessment of the personality trait absorption. For this purpose, questionnaires such as the Tellegen Absorption Scale[61] or the Harvard Group Scale of Hypnotic Susceptibility[62] could be used. Evidence suggests that individual differences in these characteristics are associated with significant differences in neurological findings[63,64].

Concerning the possibility of studying mediumship through functional neuroimaging technique, one important aspect is the selection of the control task. Usually the participant acts as his/her own control, being asked to perform two similar tasks, one with and another without spiritual (mediumistic in this case) connotation. This allows the control task to be comparable to mediumistic practice with respect to a range of elements (open or closed eyes, talking or not talking, listening or not listening) and potentially optimizes de identification of characteristic neurophysiological correlates of the mediumistic experience[56]. The decision of which specific method to use depends on availability and financial possibilities[52] but SPECT (Single-Photon Emission Computed Tomography) and PET (Positron Emission Tomography) techniques are usually preferred because images can be captured after the completion of the event under investigation (not simultaneously as it is necessary for functional Magnetic Resonance Imaging [MRI]). In addition, the noise during MRI may disturb mediums, interfering with the phenomenon[56].

The electroencephalography (EEG) can also offer important information about the degree of brain activation during the mediumistic practice, particularly of cortical regions. Unlike neuroimaging techniques, which provide excellent spatial location of cerebral functioning but less precise timing information, the EEG provides greater time precision (accuracy of milliseconds, in real time) with much lesser spatial accuracy[65]. However, because EEG recording requires stillness to avoid muscle artifacts, and as mediumship usually involves talking and moving, there might be some technical difficulties.

The objective measurement of physiological parameters that may vary according to the emotions experienced (*e.g.* heart rate variability – HRV)[66,67] could also bring relevant contributions to this research field. These parameters can be correlated with subjective self-reports and with neuroimaging findings, bringing to sight a more global physiological picture of the mediumistic phenomenon[56]. Measurements related to the immune and endocrine systems may also contribute to broaden this understanding[68,69].

Finally, it should be taken into account that different mediumistic modalities may require different study designs. Psychography and psychopictography (allegedly painting under the influence of a spirit) may adapt more easily to an experimental protocol employing functional neuroimaging. In regard of psychophony, although it may represent a larger universe of potential research participants (great prevalence of "spirit release therapy" sessions employing psychophonic mediums in countries such as Brazil[70,71] and Puerto Rico[72]), it offers obstacles to neuroimaging studies as it usually requires team work. In these cases, protocols involving EEG and ECG may be preferred as they allow researchers to record the event "in loco" using portable equipment.

Limitations

The present study has some limitations, which should be highlighted. First, the searches were limited to English, Spanish and Portuguese; therefore potentially relevant articles published in other languages were not included. Second, although the terms searched are the most frequently used ones, and although three databases were used, potentially relevant articles not indexed in these databases or described with other terms may have been missed.

Conclusions

The evidence analyzed in this review suggests: (1) mediumship seems to be associated with good mental health, mainly when individuals have many years of work as socially sanctioned mediums (2) there was heterogeneous evidence regarding the accuracy of information provided by alleged mediums, what may be due to different study methodologies, and (3) there is a paucity of studies investigating the physiologic correlates of mediumship. These results emphasize the need for more studies in this field to further elucidate mediumistic experiences, what could broaden the understanding of the mind-brain relationship.

Conflicts of interest

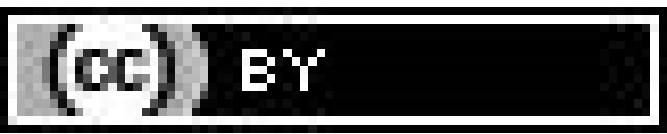
None of the authors have any conflicts of interest related to writing this review.

References

1. Rock AJ. Introduction: the medium and the message. In: Rock AJ. The survival hypothesis: essays on mediumship. 1st ed. Jefferson, North Carolina: McFarland & Company Inc.; 2013. p. 19.
2. Menezes Jr. A, Alminhana L, Moreira-Almeida A. Perfil sociodemográfico e de experiências anômalas em indivíduos com vivências psicóticas e dissociativas em grupos religiosos. Rev Psiquiatr Clin. 2012;39(6):203-7.
3. Plakun EM. Psychiatry in Tibetan Buddhism: madness and its cure seen through the lens of religious and national history. J Am Acad Psychoanal Dyn Psychiatry. 2008;36(3):415-30.
4. Sech Junior A, de Freitas Araujo S, Moreira-Almeida A. William James and psychical research: towards a radical science of mind. Hist Psychiatry. 2013;24(1):62-78.
5. Crabtree A. "Automatism" and the emergence of dynamic psychiatry. J Hist Behav Sci. 2003;39(1):51-70.
6. Stein M. Introdução. In: Stein M. Jung: o mapa da alma – uma introdução. 9ª ed. São Paulo: Cultrix; 2012. p. 13.
7. Kidd IJ. Was Sir William Crookes epistemically virtuous? Stud Hist Philos Biol Biomed Sci. 2014;48 Pt A:67-74.
8. Alvarado CS, Machado FM, Zangari W, Zingrone NL. Perspectivas históricas da influência da mediunidade na construção de ideias psicológicas e psiquiátricas. Rev Psiquitr Clin. 2007;34(1):42-53.
9. Hunter J, Luke D, editors. Talking with the spirits: ethnographies from between the worlds. Brisbane, Australia: Daily Grail Publishing; 2014.
10. Bourguignon E, editor. Religion, altered states of consciousness, and social change. Columbus (OH): Ohio State University Press; 1973.
11. Greeley AM, Hout M. Americans' increasing belief in life after death: religious competition and acculturation. American Sociological Review. 1999;64(6):813-35.
12. Flannelly KJ, Ellison CG, Galek K, Koenig HG. Beliefs about life-after-death, psychiatric symptomology and cognitive theories of psychopathology. J Psychology and Theology. 2008;36(2):94-103.
13. Wilson K. A skeptic's view of mediumship. In: Rock AJ. The survival hypothesis: essays on mediumship. 1st ed. Jefferson, North Carolina: McFarland & Company Inc.; 2013. p. 189.
14. Seligman R. Embodied experience : reconsidering the pathways to mediumship and mental health. Ethos. 2005;33(1):71-99.
15. Peres JF, Moreira-Almeida A, Caixeta L, Leao F & Newberg A. Neuroimaging during trance state: a contribution to the study of dissociation. PLoS One. 2012;7(11).
16. Krippner S. Cross-cultural treatment perspectives on dissociative disorders. In: Lynn SJ, Rhue JW, editors. Dissociation: Clinical and theoretical perspectives. New York: Guilford; 1994. p. 338-61.

17. Somer E. Culture-bound dissociation: a comparative analysis. Psychiatr Clin North Am. 2006;29(1):213-26.
18. Moreira-Almeida, A. Research on mediumship and the mind-brain relationship In: Moreira-Almeida A, Santos FS. Exploring frontiers of the mind-brain relationship. 1st ed. New York: Springer; 2012. p. 199.
19. Beauregard M, Schwartz GE, Miller L, Dossey L, Moreira-Almeida A, Schlitz M, et al. Manifesto for a post-materialist science. Explore (NY). 2014;10(5):272-4.
20. Chalmers D. The conscious mind: in search of a fundamental theory. New York: Oxford University Press Inc.; 1996.
21. Searle JR. Why I am not a property dualist. Journal of Consciousness Studies. 2002;9(12):57-64.
22. Brandão ML. Consciência. In: Brandão ML. Psicofisiologia. 3ª ed. São Paulo: Atheneu; 2012. p. 189.
23. Tart CT. Mediumship: experimental approach to postmortem survival. In: Tart CT. The end of materialism: how evidence of the paranormal is bringing science and spirit together. 1st ed. Oakland, California: New Harbinger Publications Inc.; 2009. p. 257-76.
24. Jinks T. The future of the field of mediumship. In: Rock AJ. The survival hypothesis: essays on mediumship. 1st ed. Jefferson, North Carolina: McFarland & Company Inc.; 2013.
25. Roxburgh EC, Roe CA. A survey of dissociation, boundary-thinness and psychological wellbeing in spiritualist mental mediumship. J Parapsychol. 2011;75(2):279-99.
26. Moreira-Almeida A, Neto FL, Cardeña E. Comparison of Brazilian spiritist mediumship and dissociative identity disorder. J Nerv Ment Dis. 2008;196(5):420-4.
27. Alminhana LO, Menezes Jr. A, Moreira-Almeida A. Personalidade, religiosidade e qualidade de vida em indivíduos que apresentam experiências anômalas em grupos religiosos. J Bras Psiquiatr. 2013;62(4):268-74.
28. Neri MC. Novo mapa das religiões. 1st ed. Rio de Janeiro: Fundação Getúlio Vargas/CPS; 2011.
29. Moreira-Almeida A. Fenomenologia das experiências mediúnicas, perfil e psicopatologia de médiuns espíritas [tese]. São Paulo: Universidade de São Paulo, Faculdade de Medicina, Departamento de Psiquiatria; 2004.
30. Beischel J, Schwartz GE. Anomalous information reception by research mediums demonstrated using a novel triple-blind protocol. Explore (NY). 2007;3(1):23-7.
31. Roy AE, Robertson TJ. Results of the application of the Robertson-Roy protocol to a series of experiments with mediums and participants. J Soc Psychical Res. 2004;68(1):161-74.
32. Schwartz GE, Geoffrion S, Jain S, Lewis S, Russek LG. Evidence of anomalous information retrieval between two mediums: replication in a double-blind design. J Soc Psych Res. 2003;67:115-30.
33. Kelly EW, Arcangel D. An investigation of mediums who claim to give information about deceased persons. J Nerv Ment Dis. 2011;199(1):11-7.
34. Beischel J, Boccuzzi M, Biuso M, Rock AJ. Anomalous information reception by research mediums under blinded conditions II: replication and extension. Explore (NY). 2015;11(2):136-42.
35. O'Keeffe C, Wiseman R. Testing alleged mediumship: methods and results. Br J Psychol. 2005;96(Pt 2):165-79.
36. Jensen CG, Cardeña E. A controlled long-distance test of a professional medium. Eur J Parapsychol. 2009;24(1):53-67.
37. Rocha AC, Paraná D, Freire ES, Lotufo Neto F, Moreira-Almeida A. Investigating the fit and accuracy of alleged mediumistic writing: a case study of Chico Xavier's letters. Explore (NY). 2014;10(5):300-8.
38. Kawai N, Honda M, Nakamura S, Samatra P, Sukardika K, Nakatani Y, et al. Catecholamines and opioid peptides increase in plasma in humans during possession trances. Neuroreport. 2001;12(16):3419-23.
39. Krippner S. Learning from the spirits: Candomblé, Umbanda, and Kardecismo in Recife, Brazil. Anthropology of Consciousness. 2008;19(1):1-32.
40. Oohashi T, Kawai N, Honda M, Nakamura S, Morimoto M, Nishina E, et al. Electroencephalographic measurement of possession trance in the field. Clin Neurophysiol. 2002;113(3):435-45.
41. Delorme A, Beischel J, Michel L, Boccuzzi M, Radin D, Mills PJ. Electrocortical activity associated with subjective communication with the deceased. Front Psychol. 2013;4:834.
42. Heller W, Nitschke JB, Etienne MA, Miller GA. Patterns of regional brain activity differentiate types of anxiety. J Abnorm Psychol. 1997;106(3):376-85.
43. Wallin BG, Esler M, Dorward P, Eisenhofer G, Ferrier C, Westerman R, et al. Simultaneous measurements of cardiac noradrenaline spillover and sympathetic outflow to skeletal muscle in humans. J Physiol. 1992;453:45-58.
44. Hageman JJ, Peres JFP, Moreira-Almeida A, Caixeta L, Wickramasekera II I, Krippner S. The neurobiology of trance and mediumship in Brazil. In: Kripnner S, Friedman H. Mysterious minds: the neurobiology of psychics, mediums and other extraordinary people. Santa Barbara, CA: Praeger; 2010. p. 85-111.
45. Vanhaudenhuyse A, Laureys S, Faymonville ME. Neurophysiology of hypnosis. Neurophysiol Clin. 2014;44(4):343-53.
46. Deeley Q, Walsh E, Oakley DA, Bell V, Koppel C, Mehta MA, et al. Using hypnotic suggestion to model loss of control and awareness of movements: an exploratory FMRI study. PLoS One. 2013;8(10):e78324.
47. Deeley Q, Oakley DA, Walsh E, Bell V, Mehta MA, Halligan PW. Modelling psychiatric and cultural possession phenomena with suggestion and fMRI. Cortex. 2014;53:107-19.
48. During EH, Elahi FM, Taieb O, Moro MR, Baubet T. A critical review of dissociative trance and possession disorders: etiological, diagnostic, therapeutic, and nosological issues. Can J Psychiatry. 2011;56(4):235-42.
49. Littlewood R. Possession states. Psychiatry. 2004;3(8):8-10.
50. Beischel J. Contemporary methods used in laboratory-based mediumship research. J Parapsychol, 2007;71:37-68.
51. Beischel J. Advances in quantitative mediumship research. In: Rock AJ. The survival hypothesis: essays on mediumship. 1st ed. Jefferson, North Carolina: McFarland & Company Inc.; 2013.
52. Peres JFP, Newberg A. Neuroimagem e mediunidade: uma promissora linha de pesquisa. Rev Psiquiatr Clin. 2013;40(6):225-32.
53. Sudduth M. Is postmortem survival the best explanation of the data of mediumship? In: Rock AJ. The survival hypothesis: essays on mediumship. 1st ed. Jefferson, North Carolina: McFarland & Company Inc.; 2013.
54. Beischel J, Rock AJ. Adressing the survival versus psi debate through process-focused mediumship research. J Parapsychol. 2009;73:71-90.
55. O'Connor K. Towards a process paradigm in psychophysiology. Int J Psychophysiol. 1990;9:209-23.
56. Newberg AB. The neuroscientific study of spiritual practices. Front Psychol. 2014;5:215.
57. Rock AJ, Krippner S. States of consciousness redefined as patterns of phenomenal properties: an experimental application. In: Cvetkovic D, Cosic I. States of consciousness: experimental insights into meditation, waking, sleep and dreams. 1st ed. Berlin Heidelberg: Springer-Verlag; 2011. p. 264-5.
58. Pekala RJ. Quantifying consciousness: an empirical approach. 1st ed. New York: Plenum Press; 1991.
59. van Quekelberghe R, Altstotter-Gleich C, Hertweck E. Assessment schedule for altered states of consciousness: a brief report. J Parapsychol. 1991;55:37790.
60. Hartmann E, Ebldo R, Gargl M. Personality and dreaming : the dreams of people with very thick or very thin boundaries. Dreaming. 1991;1(4):311-24.
61. Tellegen A, Atkinson G. Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. J Abnorm Psychol. 1974;83(3):268-77.
62. Shor RE, Orne EC. Norms on the Harvard group scale of hypnotic susceptibility, form A. Int J Clin Exp Hypn. 1963;11:39-47.
63. Reiser EM, Schulter G, Weiss EM, Fink A, Rominger C, Papousek I. Decrease of prefrontal-posterior EEG coherence: loose control during social-emotional stimulation. Brain Cogn. 2012;80(1):144-54.
64. Passamonti L, Terracciano A, Riccelli R, Donzuso G, Cerasa A, Vaccaro M, et al. A. Increased functional connectivity within mesocortical networks in open people. Neuroimage. 2015;104:301-9.
65. Lane RD, Waldstein SR, Chesney MA, Jennings JR, Lovallo WR, Kozel PJ, et al. The rebirth of neuroscience in psychosomatic medicine, Part I: historical context, methods, and relevant basic science. Psychosom Med. 2009;71(2):117-34.
66. Lane RD, McRae K, Reiman EM, Chen K, Ahern GL, Thayer JF. Neural correlates of heart rate variability during emotion. Neuroimage. 2009;44(1):213-22.
67. van der Kruijs SJ, Bodde NM, Carrette E, Lazeron RH, Vonck KE, Boon PA, et al. Neurophysiological correlates of dissociative symptoms. J Neurol Neurosurg Psychiatry. 2014;85(2):174-9.
68. Matsunaga M, Isowa T, Kimura K, Miyakoshi M, Kanayama N, Murakami H, et al. Associations among central nervous, endocrine, and immune activities when positive emotions are elicited by looking at a favorite person. Brain Behav Immun. 2008;22(3):408-17.

69. Liou CH, Hsieh CW, Hsieh CH, Chen DY, Wang CH, Chen JH, et al. Detection of nighttime melatonin level in Chinese Original Quiet Sitting. J Formos Med Assoc. 2010;109(10):694-701.
70. Lucchetti G, Aguiar PR, Braghetta CC, Vallada CP, Moreira-Almeida A, Vallada H. Spiritist psychiatric hospitals in Brazil: integration of conventional psychiatric treatment and spiritual complementary therapy. Cult Med Psychiatry. 2012;36(1):124-35.
71. Lucchetti ALG. Descrição da terapia complementar religiosa em centros espíritas da cidade de São Paulo com ênfase na abordagem sobre problemas de saúde mental [dissertação]. São Paulo: Universidade de São Paulo, Faculdade de Medicina, Programa de Psiquiatria; 2013.
72. Hohmann AA, Richeport M, Marriott BM, Canino GJ, Rubio-Stipec M, Bird H. Spiritism in Puerto Rico. Results of an island-wide community study. Br J Psychiatry. 1990;156:328-35.


BY

Accepted: 30 July 2017

DOI: 10.1111/tran.12207

REGULAR PAPER

WILEY IBG Royal Geographical Society with IBG

Talking with the dead: Spirit mediumship, affect and embodiment in Stoke-on-Trent

Nadia Bartolini | **Sara MacKian** | **Steve Pile**

Department of Geography, Open University, Milton Keynes, UK

Correspondence
Steve Pile
Email: S.J.Pile@open.ac.uk

Funding information
AHRC, Grant/Award Number: AH/L015447/1

While Spiritualism has attracted much attention in other disciplines, geographers have largely ignored it. However, we agree with Holloway (2006 Enchanted spaces: the séance, affect, and geographies of religion *Annals of the Association of American Geographers*, *96*, pp. 182–187) that Spiritualism presents conceptual challenges that make it worthy of more attention. As Holloway suggests, the themes of affect, embodiment and materiality are particularly helpful in exploring religious experiences. The focus of this paper is on the practice and experience of spirit mediumship in a Spiritualist setting. In mediumship, a specific challenge is to materialise and embody spirit such that spirit communication feels personal and rings true. For us, this suggests that mediumship is routinely successful both because it can produce accurate messages, which are judged empirically, and also because it produces what we call affectual truths, which are judged tacitly on whether they feel right or not. To account for this, we introduce the idea of inter-mediumship to describe interactions in the space in-between the medium and the congregation. It is through this space in-between that the affects associated with mediumship emerge, are experienced and are verified. Rather than seeing spirit communication as somehow enchanted or extraordinary, we assert that talking with the dead is predicated on the ordinariness of the experience: that is, that talking with the dead is emblematic of affect and embodiment in everyday life.

KEYWORDS
affect, embodiment, intermediumship, materiality, mediumship, spiritualism

1 | INTRODUCTION: ON SÉANCES, AFFECT AND THE ORDINARINESS OF THE EXTRAORDINARY

Just over a decade ago, Julian Holloway (2006) provided the first and – for all practical purposes – only discussion of the Spiritualist movement by a geographer. The silence of geographers on the Spiritualist movement is in direct contrast to the growing clamour of work in other disciplines, represented by recent sizeable works such as *The Ashgate research companion to nineteenth-century Spiritualism and the Occult* (edited by Kontou & Willburn, 2012), the five-volume compilation of primary sources *Spiritualism, mesmerism and the occult, 1800–1920* (edited by McCorristone, 2012) and the three-volume collection on *The Spiritualist movement* (edited by Moreman, 2013). There has been long-standing work in cultural history on the relationship between Victorian occult thinking and modernity, epitomised by authors such as Janet Oppenheim

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.
The information, practices and views in this article are those of the author(s) and do not necessarily reflect the opinion of the Royal Geographical Society (with IBG).
© 2017 The Authors. *Transactions of the Institute of British Geographers* published by John Wiley & Sons Ltd on behalf of Royal Geographical Society (with the Institute of British Geographers).

(1985), Alison Winter (1998), Simon During (2002), Alex Owen (2004) Owen (2011) and Marina Warner (2006), as well as related research into contemporary paranormal cultures, such as by Chris Partridge (2005) and Jenzen and Munt (2013). Combined, this body of evidence demonstrates that it is very hard to overestimate the significance of Victorian and contemporary occulture in the production of what we think of as secular modernity (see Geoghegan, 2016; Styers, 2004; Wilson, 2013c).

Even so, the abiding impression is that Spiritualism – as a religion and as a focus for scientific enquiry – did not outlast the Second World War. In the last decade, however, there has been a growing realisation that Spiritualism continues to be a vibrant and inventive religion, highly tuned to wider changes in religion and spirituality (Heelas et al., 2005) and the development of post-secular society (Cloke & Beaumont, 2013; for a review, see Bartolini et al., 2017a; Bartolini et al., 2017b). Regardless, it may be that the Spiritualist movement offers nothing of interest to geographers. Yet, Holloway's paper establishes very good reasons why geographers should be interested in Spiritualism – and its archetypal practice, the séance.

For Holloway (2006), Spiritualism raises significant questions about how we understand affect, embodiment and spirituality in general. Consequently, he introduces (what he calls) a vitalised understanding of space into the study of religion and beliefs. This vitalised understanding of space has three key themes: affect, embodiment and the performance of spiritual or sacred spaces. Holloway argues that

> to ignore, for the most part, the role of affect, emotion, and corporeal practice in the realization of [religious-spiritual] spaces is to sideline both a key aspect of these spaces themselves, and a key element in the circulation of religious-spiritual discourses and the identities that produce and are produced by them. (2006, p. 182)

Drawing on Jane Bennett (2001), Holloway argues that séances enabled Victorians to see the extraordinary in the everyday and the mundane – and thus to be *enchanted*. For Holloway (and Bennett), this enchantment paradoxically both transfixes and transports: transfixing Spiritualists in the moment of the séance, but also transporting them to other worlds. Thus, the séance produces enchanted spaces, where the extraordinary is now visible in the ordinary. Enchantment is located both in the idea of a transcendent world beyond the visible and in the existence of a translucent veil between the visible and invisible. In Victorian Spiritualism, seeing through the veil required an extraordinary practice: the séance – which was often performed in darkened rooms, sometimes with specialised spirit cabinets, but usually involving direct contact between the medium and the sitters via a circle of hands. Holloway leaves us with the impression that the séance remains the central practice through which Spiritualists talk with the dead. This is not our experience of contemporary Spiritualism in Stoke-on-Trent (or elsewhere). Nevertheless, we wish to develop Holloway's insight into the significance of embodiment and affect in the production of spiritual experiences and spiritual spaces. Therefore, we focus on the Spiritualist practice of mediumship, which, through its forms of embodiment, creates a space through which specific affects emerge in relation to spirit.

Since Holloway's intervention, a number of geographers have explored the themes of affect and embodiment in the exploration of religious sites and practices. Thus, for example, Finlayson (2009; see also Finlayson & Mesev, 2014) has investigated the ways that religious and spiritual spaces are designed to inspire a range of emotional responses, such as peace and contemplation, joy and awe, serenity and transcendence, homeliness and a sense of the divine. For Finlayson, such emotional responses are directly and intimately connected to the creation of places of worship and the poetics of sacred space (see also Saunders, 2012). Similarly, Holloway (2012) has found that religious rituals use affective techniques to enable the emergence of specific registers of affect and emotion, such as contemplation and ecstatic expression, or joy and peace, but also (righteous) anger. We can observe that Finlayson and Holloway identify a select range of affects and emotions. These affectual and emotional registers of religious experience are directly connected to numinous material practices, whether in the form of architecture, landscape design or rituals such as prayer or divine services.

Along these lines, Dwyer et al. (2013) have shown that faith-based material practices and cultures weave religion into the fabric of suburban life (see also Naylor & Ryan, 2002). For Kong (2001), religious practices themselves solicit emotional responses. These practices are not confined to the "official" spaces of religion, but can also be woven through everyday life by the creation of "unofficial" sites (also Kong, 2010). Indeed, Heng (2016) has shown how spirit mediumship in Singapore can challenge "official" spaces of both religion and the state. Meanwhile, geographers have been quick to recognise that spiritual experiences are to be found in a variety of spatial practices that are both affectual and embodied: exemplary are Rose's (2010) analysis of the pilgrimage and Lea's (2008, 2009) investigation of yoga retreats (also, on spaces of retreats and new spiritualities, see Conradson, 2012).

Through religious spaces and places, then, it is understood that numinous embodied performances, emotional responses and affectual registers emerge: that is (though it is rarely framed exactly this way) that a sense of the divine or of the

spiritual distinguishes lived religious experience from ordinary, modern life. For Holloway, this is captured by the idea of "faithful dispositions" (2012, p. 205), while for others it resides in a sense of "piety" (Gökariksel, 2009, p. 661) or the "affective capacity [of] sacred materialities" (Finlayson, 2009, p. 1770). This indicates that, somehow, religious experience sets a challenge for understanding embodied, lived experience as well as the emergence of affect – as it appears to suggest that religious experience is a special case; or, at least, that religious rituals, practices, performances, places and spaces, etc., work hard to solicit a specific range of emotions and affects, which then become the hallmark of religious or spiritual experience.

For us, however, Spiritualism challenges the distinction between sacred or extraordinary experience and profane or ordinary experience (see Gergan, 2015; Holloway, 2006); a view that chimes with Jean-Luc Nancy's (2013) observation that the ordinary supplies an access point to the sacred because the sacred is already enfolded into the ordinary. We wish to emphasise the ordinariness of Spiritualist religious practices and sites. Thus, we do not see Spiritualist practices and sites as supporting a culture of enchantment (contra Bennett). Quite the reverse, in fact: the miraculous is rendered mundane. Thus, the challenge of Spiritualist religious experience is that it cannot simply be distinguished from secular experiences (say, in the way that della Dora, 2016 does). Instead, we show that talking with the dead, as practised in Spiritualism, is predicated on ordinary communication (see Wooffitt, 2006). Even so, as Davidson and Milligan (2004) have argued, affect and emotion are only understandable in the context of their production and circulation – and, for us, this context is necessarily spatial.

So, we introduce the idea of *intermediumship* to describe the specific form of mediation of affects and bodies in spirit communication. This new term is necessary for two reasons. First, we wish to emphasise that affects emerge *between* bodies, even while this does not mean that those bodies are equally or reciprocally involved in the production of affects. Thus, we wish to focus on the space between bodies that enables religious affects to emerge during spirit communication. For us, the production of this space in-between is essential for understanding how talking with the dead routinely works. In our analysis of this space in-between, we emphasise how the emergence of affects interferes with the dichotomies between materiality and immateriality, between the thing and its representation, between body and spirit. Second, we wish to emphasise the *indeterminacy* of emergent affects – which is partly enabled by attempts to avoid deliberately managing affects, in both their production and circulation.

Indeterminacy parallels Nancy's (2013) argument that the sacred is undecidable. However, for us, it is also the ordinary that is undecidable. In mediumship, this double-sided indeterminacy is managed by verifying messages from the dead in two ways, both of which are entangled one with the other. On the one hand, messages are evaluated for their accuracy against reality. On the other hand, communication is also understood tacitly as being true to the spirit of the dead person, or not. A message, then, is assessed as being either factually or affectually correct, or both, or neither. We argue that, because both the sacred and the ordinary are experienced ultimately as indeterminate, it is *affectual truth* that comes to play a more significant role in the success, or otherwise, of mediumship demonstrations. This observation parallels Holloway's (2003) argument that New Age spiritualities are assessed as "correct" or "true" through their embodied practices and the ways that they enact the sacred in everyday life.

As we have said, little is known about contemporary Spiritualism – and almost nothing about Spiritualism in the UK (with the notable exception of David Wilson, 2013a). So, we begin with a description of Spiritualism based on fieldwork conducted over an 18-month period between spring 2014 and winter 2015 at all three Spiritualist churches in Stoke-on-Trent (see also Bartolini et al., 2017b). Although the fieldwork was designed to explore the place of spirit in the everyday life of Spiritualists, we found that spirit mediumship plays a significant role in providing evidence for the persistence of spirit after death. So, the main part of the paper will focus on spirit mediumship, drawing out the themes of embodiment, materiality and affect (following Holloway). We use the idea of intermediumship to account for the ordinary manifestation of the seemingly extraordinary experience of talking with the dead. As we will discover, key to intermediumship is the materialisation of the immaterial through the body and the production of meaningful affectual experiences – by the medium, by the congregation and by spirit. By focusing on intermediumship, we are better able to see the spatial processes that underlie the success (or otherwise) of spirit communication.

2 | SPIRITUALISM IN STOKE-ON-TRENT

Stoke-on-Trent has three active Spiritualist churches, in Burslem, Longton and Fenton. Of these, the Longton Church is perhaps the most well-known nationally, as it was home to long-time President of the Spiritualist National Union, Gordon Higginson (1918–1993). All three of Stoke-on-Trent's Spiritualist churches have their own premises, two of which are modern and purpose-built. They draw in a mainly working-class congregation of people who have lived in Stoke-on-Trent

all their lives. Their congregations are mostly aged between 30 and late 60s, with more women than men attending. Attendances vary from about 30 to more than 100 people. People are often in friendship or family groups, sometimes with younger teenagers. This is broadly consistent with the detailed picture of Spiritualism in Montreal provided by Deirdre Meintel (see, for example, Meintel, 2003, 2007, 2011, 2014). Significantly, all three of Stoke-on-Trent's churches currently have female Presidents.

Inside Stoke-on-Trent's churches, layouts resemble that of modern churches in the Protestant tradition. The decor is simple, yet spiritual. While spiritual imagery often draws on familiar Christian elements (such as angels, shrines with tall thin candles and flower arrangements), they also include non-Christian elements, notable among these are images of Native Americans and Native American artefacts such as dream catchers. Once through the reception area, the churches have rows of chairs (rather than pews). These face a raised platform. On the platform are a couple of easy chairs and a lectern (either to the side or in the middle). At the back, and on the side walls, there are a few pictures, often of leading church figures. The over-riding impression is that it is all very "matter of fact" and "home made".

Spiritualist services strongly resemble Christian religious services. This includes both the physical arrangement of the religious space, with the key figures at the front and the congregation sat in rows, and the order of the service, which includes hymns, prayers and a lesson. There are up to two services a week. On Sundays, there is a divine service, which is more formal, so involves hymns and prayers drawn from the New Spiritualist hymn book. During the week, the service is less formal, with songs and prayers being drawn from ordinary life. Unlike Christian services, however, an hour of the service is devoted to "platform mediumship" (which we will describe in the next section): that is, to talking with the dead. The churches also offer healing and range of other activities, such as development circles (Wilson, 2013b). These findings could be transplanted to Montreal, Vancouver or San Diego with little modification (see Biscop, 2013; Meintel, 2005; Moore, 2013).

Spiritualism in Stoke-on-Trent is characteristically anti-dogmatic. All the churches subscribe to the seven principles (as described on the Spiritualist National Union website, snu.org.uk):

1. The Fatherhood of God
2. The Brotherhood of Man
3. The Communion of Spirits and the Ministry of Angels
4. The Continuous Existence of the Human Soul
5. Personal Responsibility
6. Compensation and Retribution Hereafter for all the Good and Evil Deeds done on Earth
7. Eternal Progress Open to Every Human Soul

Yet, there is great variability between – and within – the churches as to what these might mean. So, for example, God can be viewed as a universal intelligence, but also as an abstract principle (without gender), as a woman, as one among many Gods, or even as an alien intelligence, and so on. Similarly, Spiritualism is syncretic, drawing on non-Christian traditions. For example, the English tradition of Spiritualism has made use of Native American spirit guides since at least the 1920s (Nelson, 1969). In services, spirit guides are often mentioned and "Native Spirituality" often drawn on for inspiration, as well as practices such as shamanism and meditation. Here, angels (as mentioned in the seven principles) perform double duty, as they function both within and outside of Christian beliefs. Many spiritualists have seen angels or had messages from them. Indeed, Rebecca Moore (2013, p. 162) reports that angels are of central importance for Spiritualists in San Diego. Despite differences, what unites Spiritualist churches is the practice of talking with the dead.

At the heart of Spiritualist services is the demonstration of spirit communication. It is called a demonstration because its purpose is to provide evidence of the persistence of spirit after death. Arguably, this makes spirit communication more akin to science than to the doctrinal or dogmatic religions that rely on faith (i.e., belief without question). Thus, while the demonstration's purpose is to produce evidence, what people make of that evidence is left for them to decide. The explicit intent is that this evidence is to be judged, by the receiver of the message, on its factual content – even if these facts need to be verified later. So, is it accurate? Is it right? Nevertheless, as we will see, this evidence is also tacitly tested affectually. So, does it ring true? Does it feel right? Spirit communication, thus, is judged to be successful not only when the messages contain information that could only be known by spirit but also when the receiver of the message feels that the messages are personal and true to the spirit of the dead person. We argue that this verification relies on the production of a space in-between, which we call intermediumship.

So, in the next section, we provide a "composite" account of a Spiritualist mediumship demonstration, based on our experience of more than 20 services along with interviews with Spiritualists, mediums and healers as well as conversations

with members of the congregation. To protect people's identities (as far as possible), names and details have been altered. However, we believe that the stories below will be recognisable as accurate by anyone who has attended a Spiritualist service. We will give many examples of messages that are taken to be accurate: significantly, this shows that factual and affectual judgements about accuracy are entangled and themselves indeterminate. As importantly, we will show how mundane the content of the messages tends to be.

3 | PLATFORM MEDIUMSHIP IN STOKE-ON-TRENT

We arrive half an hour before the Spiritualist service is due to begin. We are greeted warmly by the President. We chat for a bit, before taking seats towards the back of the church. The church is already a third full, as more people trickle in. One of our key informants comes over: "You are in for a good one tonight." "Oh?" "Yes, you'll see what I mean." "Right." We shuffle our belongings. "Can we take pictures during the demonstration?" The President leaves to check with the medium, who is in a back room preparing. "No", comes the reply, "but we're happy for you to take pictures before and afterwards – I'll set it up for you, if you like." "That'd be great." A couple of pictures are taken, but it feels intrusive to take more (Figure 1).

The medium appears at the back of the hall and is ushered respectfully to the front by the President. The congregation settles into place. Save for one or two chairs here and there, the church is now full. Some people sit quietly, while others are talking in slightly hushed tones. Most people have come with others, but a few are on their own. Afterwards, the President will tell us that the congregation is mainly made up of regulars, but there are a few she has never seen before. This is normal. The church – like all other Spiritualist churches in Stoke-on-Trent – has an active programme of visiting speakers. Mediums are in great demand, so have to be booked well in advance. Some mediums are very well known, locally, regionally and nationally, while others are just starting their mediumship careers. Mostly, mediums work alone, but sometimes they work in pairs. Not only is there a balance in terms of gender, some mediums are gay or lesbian. Mediums – and Spiritualist congregations – are dominated by the white working class.

The service begins in ways that will be familiar to Christians, especially on Sundays, with the singing of a hymn. During the week, pop songs with a spiritual theme replace some hymns. In Stoke, Robbie Williams' "Angels" is a particular favourite. Just before the mediumship demonstration, a short "thought for the day" is given. Usually, this is given by the medium, and is often a series of ideas sparked by something that has happened recently, either in the medium's personal life or in world news. This evening, very unusually, the President herself has decided to deliver a reading from a book about a Native American spirit guide, Silver Birch. She develops the theme of looking after nature, guided by the idea that the earth also looks after us. She concludes that spiritual wellbeing is impossible without taking care of both nature and the soul. Many in the congregation nod thoughtfully: nature is a common theme in Spiritualist discussions. The President smiles; it is now time for the demonstration.

All mediums begin with a rehearsed set of introductory remarks. These introductions have common features (see Gilbert, 2014; Hunter, 2011; Kavan, 2013). First, the medium will say a bit about themselves and how they receive spirit. They



FIGURE 1 The congregation gather for a Spiritualist service, 2015.
Source: Photo by author

assure the audience that nothing alarming or scary will happen. Second, each medium offers an explanation as to why particular spirits will communicate, while others might remain silent. Some mediums suggest that spirit is always with you, while others think of the demonstration as acting more like a beacon that attracts spirits who wish to communicate. Many mediums talk about the cacophony of voices, saying that it is hard to avoid listening to the loudest voices first. Sometimes messages come from spirit that has no, or no strong, connection to members of the audience. From the outset, it is explained that communication with the dead is fraught with possibilities for miscommunication and mistakes. Third, all mediums are explicit that they want the audience to give clear "yes" or "no" answers. They explain that as the purpose of the demonstration is to establish a link between the living and the dead, they need to know whether that link is the correct one or not.

This restriction to "yes" or "no" is also an explicit attempt to avoid unwanted communication of information, intentionally or unconsciously. Restricting communication from the receiver of the message in this way overtly focuses judgements about the accuracy of a message on its factual content. Significantly, the demonstration is imperilled by the possibility that facts being communicated by the medium derive from the congregation, whether through conscious, unconscious and/or (as mediums put it) psychical means. As Wilson says, the medium must give "descriptions of dead people (or of other information about them) known to the recipient of the message but that are *accepted by the recipient and congregation as unknown to the medium*" (Wilson, 2013b, p. 27, emphasis added). Many mediums add that if a spirit has chosen to communicate, it's only polite to talk back ... there is no place for shyness. The receiver of the message is only permitted two responses, but respond they must.

Often mediums explain how their personal lives attune them to particular aspects of spirit life: a medium who works in the medical profession explains that she is especially tuned to the specifics of illness, while another (uniquely) will pick up the favourite flowers or foods of spirit. The medium's introduction can be a few or several minutes long; its length is determined by whether the medium feels that the congregation is familiar (if they've been to the church before) or experienced (with few new members in it). Even so, the introductory remarks presume the congregation has never experienced spirit mediumship before. Often enough, the presence of spirit forces mediums to speed up or curtail what they were going to say. Perhaps paradoxically, this heightens everyone's attention and anticipation.

"I have someone coming through now." The medium focuses on spirit. The congregation is silent, still, expectant.

Mediums use a range of techniques for opening up lines of communication between spirit and the living. In any one demonstration, the medium commonly uses more than one technique to establish a link with spirit.

Occasionally, the medium will address the audience, "I have someone here who suffered a trauma ... associated with the heart ... it was unexpected ... can anyone take this?" Communication that begins this way tends to be very difficult. There is too little specific detail for the audience or the medium to grasp who wants to talk with whom.

More often, mediums start by looking towards a specific area of the church, as directed by spirit. The medium will say, "I have someone with me who wants to send a message; I feel guided to someone sitting in this area over here; does the name Arthur mean anything to anyone?" Now, not all mediums will refer to spirit by name. However, in establishing the right connection, details – especially names and locations – create confidence in both the medium and the congregation that spirit is communicating with them specifically.

Perhaps surprisingly, it is common for mediums to identify the person that spirit wants to talk to – and will talk directly to them. On one remarkable occasion, the medium points to two women, one sat behind the other. They glance at one another, not sure who he means. "Yes, you two, both of you", the medium says. He asks the women whether they know Grace. The woman at the front nods, "Yes". The medium responds: "I am confused – the woman sat behind you, does Grace mean anything to you". The second woman replies: "Yes, Grace was my mother". "Ok," the medium says, "let's try to figure out who we're dealing with ... Do either of you know Paul?" The woman at the front nods, "Yes". The medium pauses. Again, he says: "I am confused – the woman behind, does Paul mean anything to you?" The woman replies, "Yes – that's my father". The woman in front spins around abruptly to face the woman sat behind her. "My God", she exclaims, "Grace and Paul were my parents too". The congregation audibly gasps and excited whispered conversations break out around the church. Instead of looking triumphant at naming both women's parents (what are the chances?), the medium looks downcast and perplexed. Now, he does not know which woman spirit wishes to communicate with. (It transpired that it was the parents of the woman in front.)

Once a connection is established, the communication will often involve further details such as names, places and special dates as well as descriptions of the person in spirit, their physique and personality. Spirit often communicates using objects and images, showing the medium something of significance. One time, spirit makes the medium aware of a watch. The medium seeks confirmation through a series of questions. "Is it a Hamilton watch?" "Do you keep it in an upstairs room?" "Is it in a chest of drawers you rarely use?" "In the top right hand drawer?" "You cherish this watch, don't you?" A series

of "yesses" confirm the connection between spirit and the receiver of the message. Spirit explains how much the watch meant to her and how much she wanted her daughter to have it. Spirit adds: "I know you never take it out". Tears roll down the woman's face, yet she calmly replies "Yes". Observations such as this sometimes produce tears, yet it would be wrong to think that messages produce only sadness. More often, the tone is comforting and satisfying – and often spirit communication is punctuated by the pleasure and laughter of recognition.

Suddenly the medium turns his head, as if he's seen something in the corner of his eye. "What?!", he says, to what appears to be thin air. There's a long pause. His face wrinkles into a puzzled expression. "Okay, okay ... got it". He looks directly at a woman sat two rows back. "This message is for you, my dear: do long black boots mean anything to you?" The woman is taken aback, shocked not just that she has been picked out without warning, but also that the message is somewhat cryptic. Unphased, the medium continues: "I have this image of trying on long boots". He mimes pulling on long boots. "Do you recognise this? You seem to be having a good time." The woman bursts out laughing. She looks at her friend: then they both crack up laughing. Excitedly, the women talk to each other. "Okay," the medium says, "what's going on?" "It's my friend", the woman replies. Between spirit, the medium and the woman, a story emerges: she and her friend had gone out shopping and ended up trying all kinds of shoes for fun, that was just before her friend died of a long-term illness. In particular, a pair of kinky black boots had caused them to fall about laughing. As the woman describes the scene, the congregation joins in the fun – everyone is giggling and joking.

Very often, within an hour, there will be time for about five to eight connections to be established. The communications depend on what spirit has to say and the clarity of the message. Sometimes, mediums appear to break off the communication early, often when it seems that another spirit is demanding their turn. Before turning to the next communication, mediums will usually end the communication by saying something along the lines of "Spirit would like you to know that they are with you" and that "They want to leave you with a message of love", ending with, "Can I leave that with you?" The receiver of the message almost always says "Thank you".

Towards the end of the hour, all the mediums look exhausted, yet energised, by the experience of talking with the dead. The mediums often end by thanking the congregation, and also apologising to people who did not receive messages. The service is wrapped up by a member of the church, usually telling the congregation about the next services.

We wait at the back of the church as people leave. Several people are waiting patiently to talk to the medium. We take the opportunity to chat to members of the congregation, especially those who had received messages. Regular members of the congregation have seen many mediums and will often have seen the more experienced mediums many times before. Such familiarity gives them a more critical stance on the performance, routinely assessing the "hits" and "misses". Even so, everyone knows that spirit communication is fraught with difficulties. While Spiritualists all wish the demonstration to succeed, they will not collude with the medium over misunderstandings or miscommunications.

The medium softly intones, "I feel someone who wishes to communicate with someone sitting in this area over here". She waves her hand in the general direction. The people sitting there sit up, waiting. "It's a woman." "Music is important to her." No-one puts their hand up. The medium persists. "I see her performing." A woman in the congregation who has been quietly knitting stops. In a clear voice, she says "Yes". The medium focuses on her. "I see her singing." "No." "She's on stage." "No." "She used to travel around for music." "No." The medium is perplexed. The woman explains: "My mum played in an orchestra, but she was never on stage or went anywhere, it was a bit of fun – I don't know who it is, but that's not my mum." The medium is resigned to failure, and moves on to the next message. Such moments of failure are expected and, significantly, do not undermine the overall experience of the demonstration.

At the heart of the demonstration is the question, is it real or fake? This question has dominated research (such as that by the Society for Psychical Research, founded 1882 and still going strong). Spiritualists expect to evaluate all evidence and do not simply take it at face value. Thus, many Spiritualists remain sceptical about a particular message until they have had the same message from two different mediums. So, a hit on the night would not necessarily be convincing evidence. Indeed,

> many Spiritualists maintain that the most valuable (because convincing) communications they have received have comprised information they have initially been unable to accept but have subsequently been able to verify. (Wilson, 2013b, p. 29)

The mediumship demonstration thus resembles a scientific meeting, where evidence is presented and then subsequently analysed. Often, the results of this will remain unknown to everyone except the receiver of the message.

For our purposes, however, the "fake or real?" question masks the significance of embodiment and affect in the production of (routinely) successful spirit communication. It also over-privileges the role of the medium, thereby missing the

significance of spatiality in the production of the experience of spirit communication. To grasp this, we will talk about intermediumship. This term is deployed as an attempt to recognise that successful communication relies as much on spirit and the congregation as the medium. Importantly, this term is also an attempt to acknowledge the difficulty of knowing *where* messages come from. Significantly, successful communication relies on the contradictory role of the medium – who must know the message, but cannot know its origins or meaning. For us, therefore, indeterminacy – both of the message and of its origins – is integral to intermediumship. Put another way, spirit communication relies on a tacit understanding that all communication is indeterminate, precarious and prone to confusion and failure. What emerges between spirit, the medium, the message receiver and the congregation is convincing because of this, not despite it.

Next, we will discuss embodiment. This raises questions of the presentation of material – by spirit, mediums and their audiences – that is not actually present.

4 | WHAT MATTERS? RE-PRESENTING THE DISEMBODIED

The medium cocks her head slightly. She bends her knees so she is about six inches shorter. She moves her hands up in front of her shoulders. With her hands, she is searching for a movement, a gesture. She pushes her thumbs out and moves her hands back and forth. Her body slumps, slightly, and she begins to look fatter. Her face hardens noticeably and adopts a grin, as if she'd just told a crude joke. Her eyes narrow. She looks at a woman in the congregation. "The man with me", she says, "is wearing red braces – and he loves to push them out. He seems to be fond of a joke, this man. Rude jokes. Does anyone recognise him?" Someone does. "That's my father."

At another demonstration, the medium suddenly exclaims, mid-conversation: "Oh, those are my favourites! Ginger creams. The lady here loves ginger creams". The receiver of the message stifles a burst of laughter. "Yes, yes, she loved ginger creams!"

"I feel a pain in my heart, but I think this isn't what killed this man … he's breathing heavily, choking … his heart attacks didn't kill him, it was his breathing difficulties", the medium explains as she holds her hand to her heart, while her voice audibly changes to a croak. "Yes", a woman replies.

"Could you please slow down! I cannot hear what you're saying. You're going too fast! Please, it's too loud. What are you trying to say?", the medium complains. Spirit is so loud and so quick, it's hard to understand the message. A man in the congregation turns to his friend. "That's her alright", he says with a grin. Others around him respond with knowing smiles. They already know who it is.

Materialising spirits often relies on mundane observations. In one communication, the medium is talking with a woman about her mother. Then, suddenly, the pace of images quickens. "I see you in your kitchen, watching the washing machine. Your mother is by the sink, looking out of the window. That's on my right. On my left is a fridge." The medium takes a step forward. "I am out of the kitchen, there's a cupboard under the stairs on my right". The medium half bends down. "In the cupboard, there's a bread bin on the floor". The medium makes a gesture to reach towards the bin. "Oh, that's funny!", she says, "In the bread bin is a tot of gin. No bread. Your mother says, "You never know when you need a tot of gin!"". The woman in the congregation barely has time to say anything as this scene is played out … but on these words excitedly exclaims "Yes, yes, that's exactly right!", followed quickly by laughter and then some tears. For the congregation, as it is for us, it is very easy to conjure up images of a kitchen, with a large window over the sink that looks over a backyard, a fridge, a hypnotic washing machine on spin cycle … as this is the stuff of many kitchens. As much as familiarity, the medium's physical performance of movement as if in the kitchen and the surprising detail, all work to support the materialisation of the images in the message: giving spirit a physical presence, in a real place.

In physical mediumship, the problem of making spirit real is solved through the production of matter, especially – most notoriously – ectoplasm. Other mediums use art to produce physical representations of dead people, where the likeness of the portrait to the dead person (often in comparison to photographs) becomes tangible evidence of spirit. In platform mediumship, the physicality and materiality of spirit is produced in a wide variety of ways. None of these actually materialise spirit, but they do produce a set of images that help materialise spirit in the minds of the congregation. As we have shown, the production of physical correspondences includes acting like the dead person. By talking about objects, clothes, illnesses, foods, places and the like, messages are given a material form through which people can grasp the messages' meanings. These material forms – produced by often fragmentary descriptions – really matter. Message receivers recognise the material forms as real as mediums materialise them through their use of the body, of words and of images.

Spirit, then, is embodied using the materiality both of the medium's body and of images themselves. Spirit mediumship, then, is not simply about conveying messages, but about embodying those messages – that is, about making the messages

matter. If the test of communication is about the message receiver knowing more than the medium, accurately establishing the physical form of spirit messages is a clear way to provide such evidence. Thus, the test of successful communication is more than simply "how could the medium have known about the red braces?" Rather, the test is this: "how could the medium have known what my father did with his red braces?"

The paradox, of course, is that enactments, words, images do not materialise spirit, but only appear to. Spirit communication, then, interferes with any strict separation of the material and the immaterial, the thing and its representation, and between the word and the image. More than this, in seeing the significance of embodiment for establishing evidence, we can also see that messages matter not just because they are given a form, but also because they enable the production and circulation of affect.

5 | CAN YOU TAKE THIS? AFFECT AND INTERMEDIUMSHIP

There are three aspects of affect that we wish to highlight: first, affects need a form; second, affects emerge and circulate in a variety of ways; third, affects are indeterminate. Key to understanding affects in talking with the dead is an appreciation that they are unconsciously communicated: affect emerges between spirit, the medium and receiver of the message and the congregation – but it does not do so only as the result of consciously produced and shared emotions, nor does affect emerge in ways that might be deemed determinate, consistent or coherent. As importantly, the medium is not entirely responsible for the message and therefore is not the origin for the affects that emerge. In some ways, arguably, the medium is the last person to know the meaning of a message – and consequently the medium is always playing "catch up" when appreciating and managing emergent affects. Indeed, the message receiver is also struggling to figure out the meaning of the message, through the clues provided by the medium.

To think through this problem of not knowing where messages and affects emerge from, nor how they will be received and circulated, we will use the idea of intermediumship. Key to this idea is appreciating that spirit communication (routinely) works because it produces a form for affects that is recognised as real, accurate and true by the receiver of the message, the congregation, the medium *and* spirit. As importantly, it is only possible for these affectual forms to emerge because spirit communication also creates *a space between* spirit, the medium, the receiver of the message and the congregation – through the work of intermediumship. This work starts by framing the demonstration as providing evidence of the persistence of spirit after death.

Setting the demonstration in an evidence-based and analytical context tacitly frames the emotional responses that are available both to the medium and the congregation. This frame extends to the emotional registers that spirit can work in, too. This makes sense: the congregation is about to communicate with the dead, but no-one can be certain who has come to communicate, nor what content the messages from spirit might be, nor what the intentions behind a message are. To say the least, the medium is about to walk into an emotional minefield involving, on the surface, an inevitably difficult mix of love, loss, bereavement and grief (see Walliss, 2001). Indeed, the relationship between the dead and the living cannot be presumed to be ideal: dealing with the dead can as easily evoke feelings of guilt and shame or indeed anger and hatred. Mediums are clear that people who were difficult in life tend to be no better in death. Instead of the kind of faithful, religious and spiritual affective dispositions that Finlayson and Holloway speak of, we can see that the emotional terrain set out, and traversed, by mediums is relentlessly familiar.

Perhaps surprisingly, the mediums' introductory talks tend not to discuss the emotions that may be raised in the demonstration, nor how these emotions will be dealt with when they well up. Rather, we believe, there is an implicit understanding that the release of even difficult feelings such as grief and loss, or anger and shame, whether controlled or uncontrolled, is okay. Tacitly, the church becomes a safe space for expressing feelings about spirit. On the surface, the scientific framing of the demonstration might tend to suggest emotional detachment and the suppression of affect. Yet, the introductory remarks have the opposite effect, enabling the congregation to feel what they feel – without having to use words to express those feelings.

The introductions create a space for affects, through which affects can be produced and circulated. In this space, the medium's role is paradoxical. On the one hand, the medium is between spirit and the message receiver, actively establishing and mediating the communication between them, so inevitably complicit in the production and circulation of affects. Yet, on the other hand, the medium is at their most convincing when they do not know what is being communicated – that is, when the receiver of the message and the congregation are themselves producing and managing affects. Then there is spirit too: spirit must be involved because whatever affects are generated, they must "feel true" to spirit. This paradox is at the heart of intermediumship.

Even before a medium frames the demonstration with their introductory comments, the congregation is already doing affectual work prior to first contact with the dead. The congregation arrives with experiences and expectations (including those who have never attended a Spiritualist service before). While most are hoping that departed loved ones will come to communicate, many will confess that they do not want others to show up. During the medium's introduction, the congregation is quiet and respectful. Yet there are nods of acceptance as the medium outlines their personal understanding of what is going to happen. This acceptance is key. The congregation is not simply consenting to work with the medium to create a successful demonstration, they are also agreeing to receive spirit in whatever form spirit chooses to communicate. The congregation, further, tacitly accepts not only the differences in personality and style of each medium, but also their different attitudes towards spirituality. Together, these unspoken agreements establish a space of tolerance and trust.

As we have seen, the meaning of the message can reside in its empirical accuracy, especially when this is surprising, as when the medium discovers the tot of gin in the bread bin. However, the tot of gin gains further significance – deeper, more personal – when the message is understood (by the receiver of the message, the medium and the congregation) as being meaningful to spirit: "You never know when you need a tot of gin". This indicates that the demonstration relies on establishing what we are calling affectual truths: the instinctive feeling that the message is true to the spirit of the dead person.

On the surface, the evidence of persistence of spirit appears to be established by the "yes" in response to a message, but this masks the grounding of the authenticity of a communication, both in the recognition of spirit by the message receiver ("that's her alright") and in the affirmation of the memories and feelings evoked by the communication ("long black boots"). Thus, the message is judged not just on its factual accuracy but also on its affectual truth. Assessing the evidence is vital, for it means that the congregation is responding to spirit more than to the medium. Further, it also means that the material presence of spirit relies as much on a feeling shared among the congregation as the factual information that the medium provides during the communication.

Establishing a shared feeling is the product of intermediumship, as both the congregation (as individuals and as a group) and the medium work together to generate a range of affects that "feel real". It is possible that the more ordinary these affects feel, the more they can be taken as real. As important, intermediumship produces, and works in, spaces in-between, such as: between the medium and the congregation; between spirit and the medium; between the medium and the receiver of the message; between spirit and the receiver of the message; between everyone and the wider context of Stoke-on-Trent. Indeed, affectual truths are intimately entwined with the sense that messages are connected to real places and to people's experiences of place. Thus, intermediumship, carefully and selectively, builds up a topography of interconnections through which affects can be transmitted and received, recognised and shared. In any communication, affectual truths can be difficult – and sometimes impossible – to establish. Rather than miscommunication and misunderstanding jeopardising the work of intermediumship, any failures to communicate are understood as being the consequence of the inherent difficulties of all communication.

The intensity of emergent affects often prompts people to respond physically. We have given several examples of crying and laughing. There are also gasps of amazement or surprise; nods of recognition and sympathetic looks. There is also hushed disappointment and whispered confusion when things go awry. These are common expressed emotions, yet their significance lies in how they permit or enable the wider congregation to share in the communication and recognise its affectual truths. More than this, these expressed emotions are rarely converted into speech. It is, then, significant that the emotional is simply left to be. There is no attempt to suture grief or stifle laughter. Intermediumship, then, requires a kind of affectual un-censoring, which is (paradoxically) enabled by a severe censoring of spoken communication (by limiting the congregation to the words yes or no). There is, moreover, another side to this censorship. Strangely, restricting what comes back from the message receiver verbally allows spirit more of a presence, because communication from spirit takes precedence over that of the living. In this way, spirit also participates in intermediumship.

The singular purpose of spirit communication, for spirit, is to convey something that is meaningful to them yet can also be shared with the person being communicated with. Yet, the messages often appear trivial on the surface: really, ginger creams? So, it is the affective truth of the message that carries its significance: it is the watch that meant so much to me; the pearl earrings I am so pleased you have; a desire for you to do well at work; a need for you to know that I am in a better place; that moment when we had so much fun together. Even so, affect does not simply *emerge* between these bodies (variously, spirit, the content of the message, the medium, the receiver of the message, the congregation): first, the message has to feel personal and ring true; then, it has to be explicitly recognised as such. This is the proper function of "yes" and "no". These are the building blocks of intermediumship, as constant checking and re-checking establishes the foundations on which affectual truths can be assembled. Importantly, affectual truth in this context is subjective *and* shared: that is, recognised as true by everyone, even if they have no personal connection to the message. Significantly, the medium must appear neutral in the production of affectual truths: so, while mediums are central to the transmission of the message, they must appear entirely detached from its content and meaning.

Messages contain all kinds of forms that affect can gather around. There is no affect without an appropriate form. These forms provide the ground on which affectual truths can be established: examples we have given include rude jokes and kinky boots, ginger creams and a tot of gin. To be clear, these forms work not only because the receiver of the message verifies their accuracy, but also because they are understood to be meaningful to spirit. These affectual forms provide a focus for personal feelings and memories, yet also allow affect to circulate among everyone in the congregation, because others can recognise their significance even if they do not know the people involved. The space in-between the medium, spirit, message receiver and congregation, then, is produced through forms that transfix and transport everyone, empirically and affectually. Yet, as we can see, these forms are mundane, familiar, ordinary; neither extraordinary nor enchanting.

Affect is vital not because it has a material basis, nor because the bodies through which affect takes shape have a specific material form, nor because anyone is manipulating or managing affect, but precisely because intermediumship produces a space *between* spirit, message, receiver of the message, medium and congregation. Even so, while intermediumship draws attention to processes that enable affect to emerge and take form between spirit, medium and congregation, each of these play different parts. Spirit and congregation work hard to transmit and receive images and ideas that have affectual truth running through them, while the medium seeks to convey images and ideas in a way that enables that affectual truth to flow between spirit and congregation.

As we have shown, when affect and its form take shape for spirit, medium and congregation, the results can be dazzling and inexplicably precise. Yet, the communication is never less than precarious: at any point, it is liable to collapse. Much spirit communication is vague, confusing, contradictory and opaque. Still, spirit communication routinely works. Partly, this is because everyone knows that ordinary communication is fraught with possibilities for misunderstanding and error – so why would talking with the dead be any better? In fact, it ought to be worse. So, the difficulties of spirit communication implicitly confirm that the message does not originate with the medium. Rather, affect appears to begin with a body that is not in the room: spirit – a body without a body.

Talking with the dead might appear extraordinary or enchanting, but it is because it is so relentlessly ordinary that it works. At the end of every communication, the medium will say something along the lines of "spirit wants to leave you with a message of love". This statement is usually received with a nod or a barely audible affirmation. The message of love might be expected to be a dramatic moment, but instead it is ritualistic, generic and emotionally muted: its obvious function is to end the communication on a positive note and, paradoxically, conveys little, if anything, of the love that might be felt. So, it is the ordinariness of these declarations that is revealing. Spirit communication might seem like a miracle – an opportunity to say one last time something of huge emotional significance. Yet, communication is not extraordinary. It is ordinary. And spirit mediumship works in, and with, a world that is simply ordinary.

6 | CONCLUSION: INTERMEDIUMSHIP, AFFECTUAL TRUTH AND THE CHALLENGE OF SPIRIT

To stand in front of a congregation to deliver evidence of the persistence of spirit after death might seem an extraordinary thing to do. Yet, the miracle of talking with the dead is routinely delivered on a weekly basis, at Spiritualist churches across the UK, America, Canada, Australia and elsewhere, by the demonstration of spirit communication. We have suggested that spirit communication is modelled on science. This has consequences. By converting spirit communication into a set of evidential procedures, Spiritualism takes faith out of its religion. Rather than establishing the enchanted nature of spirit communication, the demonstration renders it ordinary and mundane.

Establishing a connection between the dead and the living is fraught with possibilities for misunderstanding, miscommunication and mistakes. What is remarkable, of course, is that *any* kind of meaningful communication is established at all. Whether it is through descriptions of the person, their physicality and personality, through namings of various kinds, through places and through situations, or through numbers and dates, a convincing communication is established more often than it is not. Some of these are remarkable not simply for their detail, but for a style of communication in which the medium will *insist* on the importance of the message and wait for the member of the congregation to figure out its meaning, either during the demonstration or afterwards. Indeed, messages that are confusing or puzzling that later turn out to be accurate are the most convincing. Although the success of spirit communication would appear to reside in its production of verified facts, we argue that it relies most heavily on its ability to "ring true", to "feel right".

We have argued that spirit communication works because it generates affectual truths. These truths are grounded in the embodiment and materiality of communication; they are established by materialising the immaterial, by making representations material, by producing and circulating affects, and by allowing expressed emotions to remain unexpressed. The puzzle

is that embodiment and materiality in spirit communication necessarily takes shape around a body that is not there: spirit. Thus, spirit communication interferes with assumptions about the distinction between the material and the immaterial, the representation and the thing, the body and the mind. Not only does spirit communication involve the presence of spirit which cannot be made present, so much of what goes on in spirit communication is unspoken and tacit. Not only is spirit communication intensely emotional and personal, it is shared and emotionally contained. Not only is spirit communication routinely, and sometimes jaw-droppingly, accurate, it can also be embarrassingly awkward – and fail completely.

The challenge, then, is to appreciate that spirit communication works because it is indeterminate: capable of containing opposite ideas without contradiction. Thus, spirit communication is successful, not because it offers a clear-as-a-bell line to the afterlife, but rather because its background model is that communication itself is ordinarily difficult, filled with possibilities for failure, and yet somehow works.

The significance of spirit communication also lies in the challenge it presents for understanding what happens *between* people: that is, for understanding the space that is produced between people that enables the ordinary miracle of talking with the dead. It would be easy to interpret spirit communication by placing the medium at the centre. In such an account, the medium both generates the message and manages the communication. Easy, too, to draw on ideas about stage magic (in which demonstrations of telepathy and flying tables are commonplace) to suggest that spirit communication is just theatre, an entertainment, a performance (see Brown, 2007). In the mediumship demonstration, however, the analogue is science, where the scientist publicly demonstrates a scientific principle by repeating an experiment. Except, in the case of Spiritualism, the scientist-medium does not, *must not*, know the meaning of the evidence that is being generated. This creates a challenge for understanding the space of spirit communication, because it cannot simply be understood through the experiences and performances of mediums. This is why we have introduced the idea of intermediumship.

For us, intermediumship is a way to recognise the different agencies that are producing spirit communication, including spirit itself. It is also an attempt, provisionally, to provide an account of the emergence and circulation of affects, not just in a religious space, but through the production of a space *between* – which is predicated on its ordinariness and familiarity, rather than its enchantments or sacredness. We have shown that this space is produced, in part, by evoking the physical presence of spirit, through the body, through materiality, through place. While we understand the efficiency of the standard formula for affect – "the capacity of bodies to affect and be affected" – this underplays several significant features of spirit communication. First, some bodies have no body. Second, affect can be many, indeterminate, contradictory, fleeting. Third, affects are sometimes shared, but there is no necessary reason why they should be. Fourth, where affects are shared, this needs to be accounted for, not presumed. Fifth, affects need forms (which do not have to be material). Finally, while affects might be mediated – that is, intervened in or arbitrated – this requires a notion of agency that is hard to square with one key agent in spirit communication: spirit. These points are blunt, but they all represent key challenges to how we describe and account for "the emergence of affect" in specific places at specific times.

All of which might make spirit communication seem extraordinary or special or simply too weird to pay much mind to. We have been clear: spirit communication works because it is embedded in ordinary life, not because it is detached from it. It works because it locates itself in people's real world experiences. The failures and difficulties that mediums and congregations experience in trying to figure out a message are not different from those experienced in everyday life. More than this, spirit is never confined to the church nor to the moment of spirit communication. Spirit is through daily life – and perhaps this is the most difficult challenge of all.

ACKNOWLEDGEMENTS

The research for this paper was funded by the AHRC Grant AH/L015447/1. We wish to thank all the participants in the research project, drawn from the three Spiritualist churches in Stoke-on-Trent. The project produced an exhibition, "Talking with the Dead", held at the Gladstone Pottery Museum, 1 September 2015 to 12 November 2015 (see www.talkingwithdead.co.uk). The project was assisted, administratively and financially, by The Open University's Faculty of Health and Wellbeing and the OpenSpace Research Centre. We would also like to thank the three anonymous referees, who all helped improve this paper.

REFERENCES

Bartolini, N., Chris, R., MacKian, S., & Pile, S. (2017a). The place of spirit: Modernity and the geographies of spirituality. *Progress in Human Geography*, *41*, 338–354.

Bartolini, N., MacKian, S., & Pile, S. (2017b). Spirit knows: Materiality, memory and the recovery of Spiritualist places and practices in Stoke-on-Trent. *Social and Cultural Geography*, 1–24.

Bennett, J. (2001). *The enchantment of modern life: Attachments, crossings and ethics*. Princeton, NJ: Princeton University Press.

Biscop, P. (2013). The anomalous anthropologist: Insider fieldwork in a Canadian spiritualist church. In C. M. Moreman (Ed.), *The Spiritualist movement* (Vol. *1*, pp. 181–193). American origins and global proliferation. Oxford, UK: Praeger.

Brown, D. (2007). *Tricks of the mind*. London, UK: Channel 4 Books.

Cloke, P., & Beaumont, J. (2013). Geographies of postsecular rapprochement in the city. *Progress in Human Geography*, *37*, 27–51.

Conradson, D. (2012). Somewhere between religion and spirituality? Places of retreat in contemporary Britain. In P. Hopkins, L. Kong, & E. Olson (Eds.), *Religion and place: Landscape, politics and piety* (pp. 185–202). Dordrecht, The Netherlands: Springer.

Davidson, J., & Milligan, C. (2004). Embodying emotion sensing space: Introducing emotional geographies. *Social and Cultural Geography*, *5*, 523–532.

della Dora, V. (2016). Infrasecular geographies: Making, unmaking and remaking sacred space. *Progress in Human Geography*, 1–28.

During, S. (2002). *Modern enchantments: The cultural power of secular magic*. Cambridge, MA: Harvard University Press.

Dwyer, C., Gilbert, D., & Shah, B. (2013). Faith and suburbia: Secularisation, modernity and the changing geographies of religion in London's suburbs. *Transactions of the Institute of British Geographers*, *38*, 403–419. https://doi.org/10.1111/j.1475-5661.2012.00521.x

Finlayson, C. (2009). Spaces of faith: Incorporating emotion and spirituality in geographic studies. *Environment and Planning A*, *44*, 1763–1778.

Finlayson, C., & Mesev, V. (2014). Emotional encounters in sacred spaces: The case of the Church of Jesus Christ of Latter-day Saints. *The Professional Geographer*, *66*, 436–442.

Geoghegan, B. D. (2016). The spirit of media: An introduction. *Critical Inquiry*, *42*, 809–814.

Gergan, M. D. (2015). Animating the sacred, sentient and spiritual in post-humanist and material geographies. *Geography Compass*, *9*, 262–275.

Gilbert, H. (2014). An agnostic social scientific perspective on spirit medium experience in Great Britain. In J. Hunter & D. Luke (Eds.), *Talking with the spirits: Ethnographies from between the worlds* (pp. 57–71). Brisbane, Qld: Daily Grail Publishing.

Gökariksel, B. (2009). Beyond the officially sacred: Religion, secularism, and the body in the production of subjectivity. *Social and Cultural Geography*, *10*, 657–674.

Heelas, P., Woodhead, L., Seel, B., Szerszynski, B., & Tusting, K. (2005). *The spiritual revolution: Why religion is giving way to spirituality*. Oxford, UK: Basil Blackwell.

Heng, T. (2016). Making "unofficial" sacred space: Spirit mediums and house temples in Singapore. *Geographical Review*, *106*, 251–34.

Holloway, J. (2003). Make-believe: Spiritual practice, embodiment, and sacred space. *Environment and Planning A*, *35*, 1961–1974.

Holloway, J. (2006). Enchanted spaces: The séance, affect, and geographies of religion. *Annals of the Association of American Geographers*, *96*, 182–187.

Holloway, J. (2012). The space that faith makes: Towards a (hopeful) ethos of engagement. In P. Hopkins, L. Kong & E. Olson (Eds.), *Religion and place: Landscape, politics and piety* (pp. 203–218). Dordrecht, The Netherlands: Springer.

Hunter, J. (2011). Talking with the spirits: Anthropology and interpreting spirit communication. *Journal for the Society of Psychical Research*, *75*, 129–141.

Jenzen, O., & Munt, S. (Eds.) (2013). *The Ashgate research companion to paranormal cultures*. Farnham, UK: Ashgate.

Kavan, H. (2013). Spiritual channeling: An ethnographic account. In C. M. Moreman (Ed.), *The Spiritualist movement* (Vol. *2*, pp. 111–123). Belief, practice, and evidence for life after death. Oxford, UK: Praeger.

Kong, L. (2001). Mapping "new" geographies of religion: Politics and poetics in modernity. *Progress in Human Geography*, *25*, 211–233.

Kong, L. (2010). Global shifts, theoretical shifts: Changing geographies of religion. *Progress in Human Geography*, *34*, 755–776.

Kontou, T., & Willburn, S. (Eds.) (2012). *The Ashgate research companion to nineteenth-century Spiritualism and the Occult*. Farnham, UK: Ashgate.

Lea, J. (2008). Retreating to nature: Rethinking "therapeutic landscapes". *Area*, *40*, 90–98.

Lea, J. (2009). Becoming skilled: The cultural and corporeal geographies of teaching and learning Thai yoga massage. *Geoforum*, *40*, 465–474.

McCorristone, S. (Ed.) (2012). *Spiritualism, mesmerism and the occult, 1800–1920* (Vol. *5*). London, UK: Pickering & Chatto.

Meintel, D. (2003). La stabilité dans le flou: Parcours religieux et identités de spiritualistes. *Anthropologie et Sociétés*, *27*, 35–64.

Meintel, D. (2005). Les croyances et le croire chez des spiritualistes. *Théologiques*, *13*, 129–156.

Meintel, D. (2007). When the extraordinary hits home: Experiencing spiritualism. In J.-G. Goulet & B. G. Miller (Eds.), *Extraordinary anthropology: Transformations in the field* (pp. 124–157). Lincoln, NE: University of Nebraska.

Meintel, D. (2011). Catholicism as living memory in a Montreal spiritualist congregation. *Quebec Studies*, *52*, 69–86.

Meintel, D. (2014). Spirits in the city: Examples from Montreal. In J. Hunter & D. Luke (Eds.), *Talking with the spirits: Ethnographies from between the worlds* (pp. 73–98). Brisbane, Qld: Daily Grail Publishing.

Moore, R. (2013). Angels among us in four San Diego Spiritualist churches. In C. M. Moreman (Ed.), *The Spiritualist movement*, Vol. *1* (pp. 161–179). American origins and global proliferation. Oxford, UK: Praeger.

Moreman, C. M. (Ed.) (2013). *The Spiritualist movement: Speaking with the dead in America and around the world*, Vol. *3*. Oxford, UK: Praeger.

Nancy, J.-L. (2013). Notes on the sacred. *Theory Culture and Society*, *30*, 153–158.

Naylor, S., & Ryan, J. (2002). The mosque in the suburbs: Negotiating religion and ethnicity in South London. *Social and Cultural Geography*, *3*, 39–59.

Nelson, G. K. (1969). *Spiritualism and society*. London, UK: Routledge and Kegan Paul.
Oppenheim, J. (1985). *The other world: Spiritualism and psychical research in England, 1850–1914*. Cambridge, UK: Cambridge University Press.
Owen, A. (2004). *The place of enchantment: British Occultism and the culture of the modern*. Chicago, IL: University of Chicago Press.
Owen, A. (2011). *The darkened room: Women, power, and Spiritualism in late Victorian England*. Chicago, IL: University of Chicago Press.
Partridge, C. (2005). *The re-enchantment of the west, volume II: Alternative spiritualities, sacralization, popular culture, and occulture*. London, UK: T&T Clark.
Rose, M. (2010). Pilgrims: An ethnography of sacredness. *Cultural Geographies*, *17*, 507–524.
Saunders, R. A. (2012). Pagan places: Towards a religiogeography of neopaganism. *Progress in Human Geography*, *37*, 786–810.
Styers, R. (2004). *Making magic: Religion, magic and science in the modern world*. Oxford, UK: Oxford University Press.
Walliss, J. (2001). Continuing bonds: Relationships between the living and the dead within contemporary spiritualism. *Mortality*, *6*, 127–145.
Warner, M. (2006). *Phantasmagoria: Spirit visions, metaphors, and media into the twenty-first century*. Oxford, UK: Oxford University Press.
Wilson, L. (2013a). *Modernism and magic: Experiments with Spiritualism*. Edinburgh, UK: Theosophy and the Occult Edinburgh University Press.
Wilson, D. G. (2013b). *Redefining shamanisms: Spiritualist mediums and other traditional shamans as apprenticeship outcomes*. London, UK: Bloomsbury.
Wilson, D. G. (2013c). Accessing knowledge: Shamanic awareness, apprentice-participation, and the rituals of spiritualist mediumship. In C. M. Moreman (Ed.), *The Spiritualist movement* (Vol. *1* pp. 19–33). American origins and global proliferation. Oxford, UK: Praeger.
Winter, A. (1998). *Mesmerized: Powers of mind in Victorian Britain*. Chicago, IL: University of Chicago Press.
Wooffitt, R. (2006). *The language of mediums and psychics: The social organization of everyday miracles*. Aldershot, UK: Ashgate.

How to cite this article: Bartolini N, MacKian S, Pile S. Talking with the dead: Spirit mediumship, affect and embodiment in Stoke-on-Trent. *Trans Inst Br Geogr*. 2018;43:170–183. https://doi.org/10.1111/tran.12207

ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 09, Issue, 09, pp.29957-29962, September, 2019



RESEARCH ARTICLE OPEN ACCESS

MEDIUMSHIP AND MENTAL HEALTH: TENSIONS FROM ETHNOPSYCHIATRY/ ETHNOPSYCHOLOGY

***Fabio Scorsolini-Comin**

Department of Psychiatric Nursing and Human Sciences, University of São Paulo at Ribeirão Preto College of Nursing, University of São Paulo

ARTICLE INFO

Article History:
Received 14th June, 2019
Received in revised form
18th July, 2019
Accepted 20th August, 2019
Published online 30th September, 2019

Key Words:

Ethnopsychology; Spirituality;
Religion and Psychology.

****Corresponding author:***
Fabio Scorsolini-Comin

ABSTRACT

Objective: To discuss the phenomenon of mediumship in its interface with health, using ethnopsychiatry/ethnopsychology as a theoretical prism of analysis and reflection. **Method:** Theoretical study, supported by a narrative review of the scientific literature. **Results:** Studies in the area of religiosity/spirituality (R/S) indicate the importance of this dimension to promote health, but still with little space for the consideration of phenomena such as mediumship, especially with reference to religions of African matrix like umbanda and candomblé. The need for a non-medicalizing approach to cultural and spiritual phenomena such as the trance of possession, characteristic of mediumship, is emphasized, offering an insight into the ethnotheories present in religious communities about these events. Two main movements were observed, one associating mediumship with psychopathology and another with mediumship as mediator of mental health care. Although religious spaces also offer a kind of informal health care through psychic consultations with incorporated spirits, there have been few interventions in the literature regarding this perspective of care. **Conclusion:** The production gap in the area of mediumship in its interface with the promotion of mental health unequivocally demonstrates the innovative nature of the field of study that relates mediumship to a perspective of care and acceptance that must cross the incorporation of R/S in the most varied health practices.

Copyright © 2019, Fabio Scorsolini-Comin. *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Citation: ***Fabio Scorsolini-Comin*, 2019.** "Mediumship and mental health: tensions from ethnopsychiatry/ethnopsychology", *International Journal of Development Research*, 09, (09), 29957-29962.

INTRODUCTION

The way in which religion, religiosity, and spirituality are present in human life has represented a complex subject, constituting a field of knowledge and powers that dialogue with elements of health and education and which, therefore, constitute a legitimate phenomenon with which the classical and contemporary researchers, as well as from different areas, seek dialogue.[1] The connection of the human being with his transcendent has been presented as both a way of giving meaning to life experiences and also a way of developing repertoires for situations considered difficult, stressful, and delicate handling, as in processes of illness, death, mourning, and coping with adversity. In spite of the semantic and epistemological approximations and distances between the terms religion, religiosity, and spirituality, the combined terminology of religiosity/spirituality (R/S) has been adopted as a way to give the area greater unity and, possibly, expansion in the field of mental health. Understanding that we do not always approach a single religiosity or spirituality, we have also suggested the spelling of these terms in the plural, that is, religiosities and spiritualities. Studies on the way R/s crosses health and care practices in different communities and services is a recurring subject in the scientific literature of both Nursing and social sciences. The R/S denomination, therefore, is due to the difficulty of distinguishing these terms and is consonant with the health literature.[2] For the purpose of a better dialogue with the literature on mental health, the present study will use the combined term, abbreviated as R/S. A dense international literature has drawn attention to the need not only to incorporate R/S into the practice of health professionals, but also to the challenges that address nursing care and also to the Nursing training processes, highlighting ethical and administration in Nursing. Studies with nurses and students are frequent with the development of protocols and strategies aimed at promoting a professional practice consistent with the challenges proposed by the World Health Organization (WHO) in bringing R/S into a holistic and systemic conception of being human.[3,4] The definition of health in progress makes R/S stand out without, however, delimiting drivers not only to listen to this dimension in the health-teaching process but also

to its incorporation in professional practice.[2] Although these definitions are not only scientific but also carry political meanings in health work, R/S is considered a dimension that has been proposed as relevant, which has promoted both a movement to increase knowledge in area as to the position of questioning the need for this construct in health care. Based on these two distinct positions, R/S can be considered as having a prominent place in the discussions on contemporary health care, even though this reflection is not univocal. Also in the Brazilian scenario, several R/S studies have been conducted, much devoted to the experiences of nursing professionals and the way this dimension has crossed care, for example, in specific areas such as palliative care, psychiatric care or performance in hospitals.[5] Studies with students and/or focusing on the teaching of R/S in health courses are also frequent [6], considering that the training component has been one of the pillars of scientific production in Nursing. Therefore, it becomes plausible to know and question how this dimension has been encompassed in formal educational spaces. Issues associated with spiritual suffering also emerge in the recent literature, as well as the concept of spiritual *coping* related to coping with adverse situations arising from illness processes.[5,6] So, R/S is a dimension that has been shown to be important in the promotion of Nursing care, also representing a challenge in terms of training that accompanies the need to offer knowledge aimed at sustaining solid practices, supported by the scientific point of view, committed and critical socially, ethically, and politically.

Thinking Nursing as the science of care and that R/S often emerges as a dimension associated with both mental suffering and the promotion of mental health, we explored the possibility of a more focused reflection on the phenomenon of mediumship or the mediumistic trance, often questioned when discussing R/S expressions in different religiosities. Thus, the objective of this theoretical study is to discuss the phenomenon of mediumship in its interface with health, resorting to ethnopsychiatry/ethnopsychology as a theoretical prism of analysis and reflection. To do so, this study is based on an extensive review of the literature conducted in index databases/electronic libraries such as LILACS, SciELO, PePSIC, PsycINFO, CINAHL, MEDLINE/PubMed and Wiley Online Library, as well as from classic books of the area, notably translations of important works by foreign authors such as Roger Bastide, François Laplantine, George Devereux, Tobie Nathan and Ernesto De Martino, just to mention some of the exponents of the ethnopsychological background that stitches the object under consideration. We hope, in this way, to systematize and produce knowledge about the phenomenon of mediumship in its interface with health.

Mediumship and psychopathology: Mediumship as a phenomenon present in different religions and mystical practices has always been tied to a discussion in the field of psychopathology. Besides the recognition of a religious event, several scholars, at different times and attending to different epistemologies, sought to confirm, refute or even reflect on how mediumship may or may not be associated with psychic illness. Throughout the ages, mediumship also represented a synonym of illness, meaning a clear expression of a psychopathology, a "disturbance" or a "psychic disorder" that suspended the subject from his psychic faculties considered normal, conscious or that could be controlled. These investigations have always had as the purpose the attempt to explain the phenomenon in terms of its causalities as well as its psychosocial repercussions and for the life of the individual, the medium. Thus, the movements of approach and distance between psychic phenomena and the issues of psychic illness are suggested by several studies in the scientific literature, dealing with events such as the first psychotic outbreak and dissociation [7], for example, with investigations that sometimes elect target audience the adherents of spiritist religions and of African matrix [8], with great emphasis on studies conducted in the Brazilian scenario [9] as a privileged empirical field. Brazil, by its own ethnic matrix, despite being a predominantly Catholic country, with a great rise of evangelical religions in recent years, presents a privileged space for the development of religions and practices of spiritists, Umbandists and Candomblé, these cults with a strong mediumship in its most different expressions.

National studies have highlighted the way in which the association between psychic phenomena and R/S has been neglected in contemporary studies [10], opening up a range of possibilities for investigating these aspects along with mediums of these religions. Beyond these associations, the life trajectories of these mediums, especially in relation to the developmental aspects that may or may not elicit questions of the mental health order, do not seem to be the focus of contemporary investigations [11,12], opening possibilities for narratives about sociability and the way mediumship can cross them.

The phenomenon of mediumship, recovering the tradition of the area, has always represented a legitimate interest on the part of mental health researchers in Brazil and in the world [10,13], whether through investigations that prioritize the biological and neuropsychological aspects of the medium trance experience 10, 14 in different religions, or by studies that explored the phenomenon from a more psychosocial bias of the mediumistic experience.[12] In the field of health, however, the first movement has been prioritized, reinforcing a tendency to discuss how mediumship can approach or distance itself from psychopathological phenomena, in a resonance of the biomedical model still in force. From this perspective, they attempt to understand the causes and consequences of mediumship in physical terms, and the phenomenon is understood as something that can be isolated, analyzed (possibly in experimental terms and basic research) and fragmented, in search for an investigation that, in fact, can explain how and why a certain expression occurs. These investigations are also of interest in the associations of psychic manifestations with depressive symptoms, stress, depression, as well as with traits related to panic and personality disorders, for example. These studies and perspectives start from the idea that, in isolation, mediumship could be better understood and, depending on the findings on its consequences, be treated, medicalized, and finally controlled, in associations with expressions considered pathological.

In another perspective, more associated to the human and social sciences and in a more psychosocial view of mental health work, the focus would be on mediumship as a social, cultural and sacred expression of a particular people, community or creed, representing a phenomenon of order of the divine that cannot always be accessed by usual research instruments, but from methods such as observations, ethnographies, descriptions and reflections based on the experiences of researchers and subjects. In this theoretical prism, questions about the reality of the phenomenon (whether it exists or not) or about the moral aspects (whether it is correct

or not) possibly associated with the event or the people expressing this mediumship (mediums) would not fit. As a perspective that considers religious expressions as an aspect that makes people belong to a certain group and feel anchored and represented, mediumship would therefore be a manifestation consistent with the mystical and religious pro-propositions, being a performativity that keeps a relation to their context and their religious prism. In terms of studies on mediumship, Brazil has always been considered a historically privileged empirical field [9] because it encompasses different religious manifestations, many of them characterized by events related to mediumship, as in the experiences of possession trance present in rituals such as umbanda, candomblé, and Kardecistspiritism Additionally to these religions we also observe questions of mediumship in catholic and evangelical cults, albeit under different perspectives and explanations. As for the religions of African origin, here represented by candomblé and umbanda, obviously these movements do not originate in the Brazilian scenario exclusively, but come from, for example, the African continent, finding in the national space a field of application and also of transformation and construction of new expressions of this mediumship.

The articulation between foreign researchers dealing with typically Brazilian events promoted a dense space for dialogue between researchers from different countries, promoting as a result the greater dissemination of national studies, conducted by Brazilian researchers, in foreign journals, as well as the dissemination of studies of foreign researchers in national vehicles. This movement can be observed, for example, in the *Handbook of Contemporary Religions in Brazil* [15], which presents the religions present in Brazil from Brazilian and foreign researchers, highlighting candomblé and umbanda. Mediumship has already been heavily investigated by the social sciences, especially by anthropologists interested in describing the various performances associated with the sacred and how humans could communicate with the world of the dead. Similarly, but in a less expressive number, modes such as magical practices and trances of possession are present in healing rituals and act towards the restoration of balance and health, for example, they have already been the targets of classical studies conducted by researchers.[16,17] Most of these investigations reveal the need to understand mediumistic phenomena beyond health-related records in a search for explanations of the order of context, mixing social, cultural, and historical elements that are embedded in the social practices of care. Thus, a movement is developed, more contemporaneously, in the sense of refusing the medical and psychopathological explanations that associate the mediumistic expressions with the conditions of psychic illness. Although the trances of possession can be observed in different religious traditions, great prominence is conferred to religions of African matrix like candomblé, umbanda, catimbó, among others, responsible for preserving the ethnic patrimony of their ancestors [18,19], representing a movement of resistance that involves the search for religious expressions with psychic and fantastic elements that face the ethnic and cultural oppression that marginalizes certain populations and communities.[20] Thus, this study selects the religions of African matrix as privileged field of study in relation to the phenomena of mediumship.

Mediumship and religions of African matrix: Scientific production in the field of Afro-Brazilian religions, or religions of African origin, is not a recent movement.

Several researchers abroad were interested in umbanda and candomblé, fundamentally through the bias of the trance of possession, using the Brazilian context as an empirical field to construct theses on the mediumistic phenomena and on the cultural manifestations present in these religions, a movement responsible by consolidation of several international research lines that were based on the Brazilian religious scene.[21] Next, we will present the scientific production related to candomblé and umbanda as a way to show how these religions have been listed by the academic media as an empirical field for reflections in the field of mental health and health care associated with social, cultural and historical elements that constitute us in different communities. Umbanda, considered a "genuinely Brazilian religion" [22] (p. 147), has aroused the interest of researchers since the twentieth century both in its origin and in the way it is permanently composed and recomposed by elements derived from Catholic, Spiritist, and candomblé, also interweaving characteristics of the Brazilian people and their white, indigenous, and African matrices. Although there are disagreements and impasses regarding its origin, in this religion a strong influence of the oral tradition stands out, as well as the presence of cultural elements that refer to the very ethnic origin of diversity of the Brazilian people and their miscegenation.

National studies on umbanda have established a series of theoretical and empirical understandings carried out in terreiros, allowing a reading about the transformations that have occurred in this religion over time [20]. These studies involve descriptions and anthropological and psychological readings about the Umbandist pantheon entities such as pombagiras [23], caboclos, and baianos[24], as well as proposals that highlight aspects such as corporeity, participative methodologies [20,25], relationships with health practices and care [26,27], historical resonances [18,22] and social processes such as marginalization, vulnerability and resistance through religious expressions. Umbanda, rather than expressing mystical aspects of relation to the sacred, involves social positioning and tension, since it represents the very origin of the Brazilian people, its ills such as slavery and the genocide of indigenous peoples, as well as their social dramas which involve racism, problems arising from migration, as well as attention to marginalized populations, and social vulnerabilities. The initial interest in the study of these Afro-Brazilian religions came from foreign researchers. This course was undertaken by classical authors of Anthropology, such as the Frenchman Roger Bastide [28] and more contemporarily with Veronique Boyer, [29] of the École de Hautes Étudesen Sciences Sociales in Paris, just to mention two emblematic examples in the area. Both are exponents of ethnopsychological reference and they produced solid knowledge that theoretically and methodologically subsidize the ethnopsychological investigations in the field of health. Boyer's study [29] specifically dealt with the "caboclocandomblé", discussing the specific cult of caboclos in Pará, also known as "caboclos from Amazônia". Bastide [28] has already built a solid work on candomblé and umbanda, investigating phenomena such as the trance of possession by orixás and also the oneiric universe of these communities. In studying dreams, one was interested in understanding the ancestry of peoples in relation to their origins and how these aspects were represented in dreaming. Another notable example in the area is Fernando Brumana[30], an Argentine scholar who investigated Jurema in the national context, weaving basic considerations to understand how religiosity has been embedded in the experiences of the

Brazilian people. In the 1970s, Bastide proposed a reading about the umbanda that placed it between the European tradition and African culture, being a mestizo tradition, bringing white elements into a black pantheon, promoting a reading of this religion as being interstitial.[28,31] This character is reinforced by authors dealing with the so-called Umbandist plurality, mixing white, black, and indigenous elements [32]), enabling a reading of this religion beyond its institutional aspects and envisaging a relationship with the universe of historically and culturally produced meanings. To study umbanda, in this sense, is also to investigate Brazilianness and the way the Brazilian people are interpreted in a multifaceted pantheon of references.[27] In this analysis perspective, umbanda occupies a prominent place precisely because it represents the miscegenation of the Brazilian people, which is also intertwined with our mystical and religious references.

The interest in the study of umbanda, as it occurs in the context of candomblé, is not exclusive to Brazilian authors, which can be observed by a relevant international production, although it is highlighted the mismatch with the local production about this religion.[33] More contemporaneously, we find religious expressions of umbanda in other countries, such as Portugal, the United States, Argentina, Uruguay, and Spain, [34] which also maintains contextual specificities, making comparisons with the national scenario difficult. It can be said that umbanda retains a diversity within the Brazilian scenario, which tends to widen when we consider other countries, other cultures, and dialogue between contexts. Thus, both umbanda and candomblé practiced in Brazil have specificities, which also applies when we analyze the different Brazilian regions and their nuances in terms of religiosity and mystical practices.

Although much of the knowledge produced about Afro-Brazilian religions is based on the social sciences, through a tradition of research in religions spaces and the use of observational and participatory methodologies, it is emphasized that Psychology has also appropriated this field, approaching these discussions to the psychic and developmental universe that surrounds these phenomena.[12,31,24,27,35] In this perspective, mediumship can be understood not only as a cultural phenomenon but also as a psychological phenomenon, since it positions subjects, the self-other relationship, the personality of the medium, and the personality of the embodied entity, among other aspects. The ethnopsychological framework, delimited in many of these interventions, has been important for comparing reflections on the way in which native ethnotheories can be understood as a worldview that should not be reduced to the ethnocentrism that sometimes marks the research with local communities or that represent a world knowledge quite different from the one brought by the researcher.[28,36] In searching for ethnotheories that explain and describe the phenomenon of mediumship, there is a native understanding that breaks with the academic-scientific attempt prioritized in the biomedical and positivist model that aims to isolate the object and fragment it. To describe the phenomenon of mediumship, from a psychosocial and cultural perspective, is to surpass traditional and hegemonic models, in search of a reading that, in fact, breaks with the tendencies towards the pathologization of cultural expressions.[27]Ethnopsychiatry/ethnopsychology legitimizes reference communities as holders of a knowledge that must not only be heard, but respected and valued, in constant dialogue with scientific knowledge. Producing science in this perspective is to rescue local references in search of evidence or evidence that may subsidize a "inward" understanding of the phenomenon and not external to it, as widely criticized in more hegemonic approaches. The studies on umbanda and candomblé that try to approach the ritual aspects of the cultural elements in the reference communities give continuity to a series of investigations of international character. Mageo, in Samoa, investigated typical possession trances of the region, promoting a reading about the myths and their relationships with the subjective experiences of that population.[37] Similar positions are brought in research in Sudan, Sri Lanka [38], Niger, Cuba, and Mayotte, in France, promoting the emergence of an intelligibility that brings religious and cultural expressions closer together as a dimension of the constitution of peoples, making it necessary to immerse them in these cultures and customs for the apprehension of what, in fact, is the order of the cultural or the field of attention in mental health. In Brazil, the possession trance was and it has been investigated by both national and foreign authors.[39]

Religious spaces such as umbanda and candombléterreiros are approached in many studies as spaces for emotional reception and health promotion.[40] Although religious spaces cannot be considered as formal health equipment, the search for help ends up attracting diverse followers, so that they do not need to join these religions in order to receive aid, a fact that is very recurrent in Brazil, where many terreiro and spiritistcentres present themselves formally as Catholics or even evangelicals. A recent study showed that many of the followers of these religions seek spiritual protection for psychic illness.[41] This suggests that the experiences of mental illness can find in these spaces a direction that must be understood more deeply - is mental health understood and promoted in these religious spaces? As the experience of mediumship, in its most different manifestations, can mediate a care promoted in these spaces?

Religious experiences as promoters of practices considered therapeutic have been suggested by a relevant literature with studies on candomblé, umbanda and spiritism [26,42], both in the national and international contexts. What these studies suggest is that, often, religious spaces can function as places of emotional reception, a welcome that is not always possible in formal health equipment that may not be prepared to receive users/patients/clientswith religious and spiritualities that are dissonant in relation to the standard or, in other words, to the existing hegemonic Christian context in Brazil. Obviously, it is not a matter of listing religious spaces as spaces of formal care, but rather of spheres in which the subject can be more widely accepted, accepted and respected in his identity and in his belonging, which often embraces the notion addressed by R/S. So, mediumship can and should be understood in the interim, representing a movement that seeks to know and respect the subject based on their anchorage, their ancestry, the knowledge conveyed in their community of reference, in their identity, in their belonging. It is within this interface that recent R/S studies can and should develop strategies and repertoires, enhancing not only R/S consideration in health care, but in what way different religiosities and spiritualities, especially non-hegemonic ones, can compose a range of references for the promotion of health and well-being.

By the analysis undertaken in the scientific literature retrieved here and widely published in Brazil and abroad, we can affirm that mediumship has essentially two distinct positions in relation to mental health. A certain portion of studies links psychic expressions to certain pathological symptoms, so that

mediumship is considered, in part, as synonymous with mental illness. Roughly, manifesting in a medium way would be equivalent to having some associated symptomatology, being necessary to investigate which would be more prevalent and why. This aspect is supported by biomedical studies classically disseminated in the last decades and in a tradition of research that is currently being questioned in the area of mental health.

The other existing positioning presents mediumship as a mediator of mental health care, that is, mediums would use the different mediumistic expressions to pay attention in mental health through consultations, blessings, and different rituals that would have as a final objective to restore the balance of the subject and their mental health. As a vehicle or tool of healing or care, mediumship would be placed at the service of mental health. Research addressed under this second aspect are more aligned with ethnopsychiatry/ethnopsychology, which has been shown as a potent perspective in the sense of not pathologizing the culture, although it considers that mental health issues should be approached in all contexts. It is not therefore a matter of disregarding that there may be demands for mental health in people who resort to spiritist centers and terreiros, for example, but that the way of interpreting mediumship can and should pass through a more cultural and social understanding of the phenomenon, favoring an attention that considers the local knowledge, that respects the traditions of the community and that, for that very reason, apprehend a subject less fragmented and more integrated in terms of mental health. Considering these references is, in fact, promoting health care politically and ethically.

Final considerations: In contemporaneity, mediumship has been presented as a phenomenon discussed in a health and care perspective, rejecting a medicalizing and psychopathological discourse that has persisted for many years in research on possession trances in Afro-Brazilian cults, for example. The mediumship seen from the perspective of ethnopsychology/ethnopsychiatry recovers an aspect of health and well-being promotion precisely by considering the subject in his context of reference, in his belonging, and in his identity, in a holistic, systemic, and integrative perspective. If mediumship is part of the experiential repertoire of the subject, it must be analyzed from that milestone, not as something external, pathological, and that must be extirpated. From ethnopsychiatry/ethnopsychology, this subject is considered inserted, belonging, full of with meaning, being able to express himself, to worship his creeds, to respect his ancestralities, and to anchor himself in the aspects that dialogue with his dignity and his existence. When we promote health we need, unequivocally, to consider these expressions, which includes a critical reflection on mediumship, should this element emerge in the caring process. Some questions are relevant at this point: do the formal health practices open space for dialogues about possible mediumistic expressions in the clientele served? Or is mediumship already presented with a heavy burden of prejudice that associates it with psychic illness?. From the vast literature consulted, it is important to point out that the Brazilian empirical field related to religions of African origin is privileged, which has been mentioned even in international studies.[42] Although there is this recognition and the consideration that these spaces can be potentially promoters of health, shelter, and care, we do not find reports of ethnopsychological interventions in these communities, which points us to a production gap that intends to be answered by future studies.

The existing research and mentioned here retrieve that the religious space itself can be therapeutic by accepting demands of mental health in informal health equipment (umbandaterreiros and candomblé roças, for example), and there are no initiatives that, in fact, lead to reflections about how these religious spaces can also receive formal care by health professionals. The literature referred here brings to light the mediumistic care as care proposals, as well as the networks of interpersonal relationships that are formed in terreiros as networks of social support. Interventions conducted within these spaces by health professionals were not mentioned in the literature. This gap unequivocally demonstrates the innovative character of the field of study that relates mediumship to a perspective of care and acceptance that must cross R/S incorporation into the most varied health practices. In this way, the invitation is directed so that this phenomenon can be appreciated in its complexity, which does not exempt us from a discussion sometimes crossed by questions of psychopathology. However, recognizing the importance of this phenomenon, especially in African-based religions, there is scope for less stereotyped, less medicalizing, and more flexible understandings precisely because they narrate a subject that belongs and means not only in individual terms, but fundamentally in groups, in their collectives, and in their communities of reference.

Limitations: Among the limitations that can be mentioned in this study it is the very characteristic of the narrative review of not systematizing the results in terms of a characterization of the results according to the profile of the publications. Profile studies are important to find gaps and trends that may be important for research in this field. As the objective of the study was to reflect on important aspects in the production that relates mediumship and mental health, a narrative design was chosen, prioritizing the classic references, and the most contemporary studies without the need to establish or portray a single truth, but rather contribute to the ever-present debate on this subject considered controversial in mental health. Other more systematic delineations for the revision can be undertaken in the future, respecting other epistemological objectives and positions. Obviously the discussion on the subject is still broader and must be resumed in both theoretical and empirical studies. Greater investment in ethnopsychiatry/ethnopsychology research is suggested, expanding the repertoire of knowledge at the interface between mediumship and mental health.

Financing: This study was supported by the National Council for Scientific and Technological Development (CNPq).

Conflicts of interest: There are no conflicts of interest.

REFERENCES

1. Koenig HG. 2012. Religion, spirituality, and health: the research and clinical implications. ISRN Psych. 278730.
2. Scorsolini-Comin F. 2018. A religiosidade/ espiritualidade no campo da saúde. Rev CiênSaúde., 8:1-2.
3. Giske T., Cone PH. 2015. Discerning the healing path: how nurses assist patient spirituality in diverse health care settings. *J Clin Nurs.,* 24(19-20):2926-35.
4. Jun WH., Lee G. 2016. The mediating role of spirituality on professional values and self□efficacy: a study of senior nursing students. *J AdvNurs.,* 72(12):3060-67.

5. Lavorato-Neto G., Rodrigues L., Campos CJG., Turato ER. 2018. O espírito solto: significados de espiritualidade por equipe de enfermagem em psiquiatria. Rev Bras Enf. 71(2):301-09.
6. Silva JB., Aquino TAA., Silva AF. 2016. The relationship between spirituality and care acoording to nursing studentes designs. Rev Enf UFPE.10(3):1029-37.
7. Delmonte, R., Lucchetti, G., Moreira-Almeida, A., & Farias, M. 2016. Can the DSM-5 differentiate between nonpathological possession and dissociative identity disorder? A case study from an Afro-Brazilian religion. J Trauma &Dissoc. 2016;17(3):322-37.
8. Menezes Jr. A., Alminhana L., Moreira-Almeida A. 2012. Perfil sociodemográfico e de experiências anômalas em indivíduos com vivências psicóticas e dissociativas em grupos religiosos. *Rev PsiqClín*., 39(6):203-07.
9. Krippner S. 1987. Cross-cultural approaches to multiple personality disorder: Practices in Brazilian spiritism. Ethos., 15(3):273-95.
10. Moreira-Almeida A. 2013. Pesquisa em mediunidade e relação mente-cérebro: revisão das evidências. *Rev Psiq Clín.,* 40(6):233-40.
11. Rabelo MC. 1993. Religião e cura: algumas reflexões sobre a experiência religiosa das classes populares urbanas. *Cad Saúde Públ.* 9(3):316-25.
12. Scorsolini-Comin F., Campos MTA. 2017. Narrativas desenvolvimentais de médiuns da umbanda à luz do modelo bioecológico. *Est Pesq Psic.,* 17(1):364-85.
13. Osborne G., Bacon AM. 2015. The working life of a medium: A qualitative examination of mediumship as a support service for the bereaved. *Ment Health, Relig Cult.,* 18(4):286-98.
14. Bastos Jr. MAV. et al., 2015. Mediumship: review of quantitatives studies published in the 21st century. *Arch Clin Psych.,* 42(5):129-38.
15. Schmidt BE., Engler S. 2016. Handbook of contemporary religions in Brazil. Boston: Brill.
16. Crapanzano V. 1977. Introduction to case studeisw of spirit possession. In V. Crapanzano, V. Garrison (Orgs.), Case studies of spirit possession. New York: John Wiley.
17. Csordas T. 1987. Health and the holy in African and Afro-American spirit possession. *J SocSci Med*., 24(1):1-11.
18. Prandi R. 1990. Modernidade com feitiçaria: candomblé e umbanda no Brasil do século XX. *Tempo Soc.,* 2(1):49-74.
19. Silva VG. 2005. Candomblé e Umbanda: caminhos da devoçãobrasileira (2ª ed.). São Paulo: Selo Negro.
20. Bairrão JFMH. 2002. Subterrâneos da submissão: sentidos do mal no imaginárioumbandista. Memor. 2:55-67.
21. Lépine C. Répresentations de la maladiedans le Camdomblé au Brésil. Bull. Ethnomed. 1983;25:21-49.
22. Negrão LN. 1993. Umbanda: entre a cruz e a encruzilhada. *Tempo Soc.,* 5(1-2):113-22.
23. Barros ML., Bairrão JFMH. 2015. Performances de gêneronaumbanda: a pombagiracomointerpretação afro-brasileira de "mulher"?. *Rev Inst Est Bras.,* 62:126-45.
24. Macedo, A. C., & Bairrão, JFMH. 2011. Estrela que vem do Norte: Osbaianosnaumbanda de São Paulo. Paidéia. 21(49):207-16.
25. Rafael UM., Maggie Y. 2013. Sorcery objects under institutional tutelage: magic and power in ethnographic collections. *Virt BrazAnth*.10(1):276-342.
26. Costa-Rosa A. 2008. Práticas de curamístico-religiosas, psicoterapia e subjetividadecontemporânea. Psic USP. 19(4):561-90.
27. Bastide R. 2016. Transemístico, psicopatologia e psiquiatria. In O sonho, o transe e a loucura. São Paulo: *Três Estrelas*;. p. 105-127.
28. Boyer V. 1992. "De la Campagne à la Ville: La Migration du Caboclo". *Cahiers d'Études Afric*. XXXII(125):109-27.
29. Brumana FG. 2005. A propósito de la jurema: reflexionessobre el campo religiosobrasileño. Antrop. 48(2):423-71.
30. Macedo AC. 2011. Encruzilhadas da interpretaçãonaumbanda. Tese de DoutoradoemPsicologia, Faculdade de Filosofia, Ciências e Letras de RibeirãoPreto. Universidade de São Paulo, RibeirãoPreto, SP.
31. Concone MHVB. 1987. Umbanda, umareligiãobrasileira. São Paulo: CER/EDUSP.
32. Lundell EA. 2016. Exú's Work: The Agency of Ritual Objects in Southeast Brazilian Umbanda. J Ethn Folk. 2016;10(1):43-69.
33. Godoy LG. 2016. Umbanda and healing: experience in Uruguay and Spain. Rev San Greg. 13:41-8.
34. Zangari W. 2005. Uma leiturapsicossocial do fenômeno da mediunidade de umbanda. BolAcad Paul Psic., XXV(3):70-88.
35. Nathan T. 1994. L'influence qui guérit. Paris: Jacob.
36. Mageo JM. 1996. Spirit girls and marines: ethnopsychology as historical discourse in Samoa. *Am Ethnol*., 23(1):61-82.
37. Obeyesekere G. 1981. Medusa's hair: an essay on personal symbols and religious experience. Chicago, United States: University of Chicago Press.
38. Goldman M. 2012. O dom e a iniciaçãorevisitados: o dado e o feitoemreligiões de matrizafricana no Brasil. Mana. 18(2):269-88.
39. Gomberg E. 2011. Itinériosterapêuticos e narrativas. In Hospital de orixás: encontrosterapêuticosem um terreiro de candomblé. Salvador: EdUFBA; p. 113-39.
40. Lucchetti A., Lucchetti G., Leão F., Peres M., Vallada H. 2016. Mental and Physical Health and Spiritual Healing: An Evaluation of Complementary Religious Therapies Provided by Spiritist Centers in the City of São Paulo, Brazil. *Cult Med Psych*. 40(3):404-21.
41. Stone E. 2015. An Alternative Healing Paradigm: A Case Study of Spiritual Therapy in Umbanda. *Luso-Braz Rev*. 52(2):174-94.

****

Check for updates

RESEARCH NOTE

REVISED People reporting experiences of mediumship have higher dissociation symptom scores than non-mediums, but below thresholds for pathological dissociation [version 3; referees: 2 approved, 1 not approved]

Previously titled: People who report anomalous information reception have higher dissociation symptom scores

Helané Wahbeh, Dean Radin

Institute of Noetic Sciences, Petaluma, CA, 94952, USA

v3 **First published:** 10 Aug 2017, **6**:1416 (doi: 10.12688/f1000research.12019.1)
Second version: 23 Oct 2017, **6**:1416 (doi: 10.12688/f1000research.12019.2)
Latest published: 04 Jan 2018, **6**:1416 (doi: 10.12688/f1000research.12019.3)

Abstract

Background: Dissociative states exist on a continuum from nonpathological forms, such as highway hypnosis and day-dreaming, to pathological states of derealization and depersonalization. Claims of communication with deceased individuals, known as mediumship, were once regarded as a pathological form of dissociation, but current definitions recognize the continuum and include distress and functional disability as symptoms of pathology. This study examined the relationship between dissociative symptoms and mediumship in a large convenience sample.

Methods: Secondary analyses of cross-sectional survey data were conducted. The survey included demographics, the Dissociation Experience Scale Taxon (DES-T, score range 0-100), as well as questions about instances of mediumship experiences. Summary statistics and linear and logistic regressions explored the relationship between dissociative symptoms and mediumship endorsement.

Results: 3,023 participants were included and were mostly middle-aged (51 years ± 16; range 17-96), female (70%), Caucasian (85%), college educated (88%), had an annual income over $50,000 (55%), and were raised Christian (71%) but were presently described as Spiritual but not Religious (60%). Mediumship experiences were endorsed by 42% of participants, the experiences usually began in childhood (81%), and 53% had family members who reported similar experiences. The mean DES-T score across all participants was 14.4 ± 17.3, with a mean of 18.2 ± 19.3 for those claiming mediumship experiences and 11.8 ± 15.2 for those who did not ($t = -10.3$, $p < 0.0005$). The DES-T threshold score for pathological dissociation is 30.

Conclusions: On average, individuals claiming mediumship experiences had higher dissociation scores than non-claimants, but neither group exceeded the DES-T threshold for pathology. Future studies exploring dissociative differences between these groups may benefit from using more comprehensive measures of dissociative symptoms as well as assessments of functional impairment, which would help in discerning between pathological and non-pathological aspects of these experiences.

Open Peer Review

Referee Status: ✗ ✓ ✓

	Invited Referees 1	2	3
REVISED version 3 published 04 Jan 2018			✓ report
REVISED version 2 published 23 Oct 2017		✓ report	? report
version 1 published 10 Aug 2017	✗ report		

1 **Etzel Cardeña**, Lund University, Sweden

2 **Colin A. Ross**, The Colin A. Ross Institute for Psychological Trauma, USA

3 **Adrian Parker**, University of Gothenburg, Sweden

Discuss this article

Comments (0)

Corresponding author: Helané Wahbeh (hwahbeh@noetic.org)

Author roles: Wahbeh H: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Project Administration, Writing – Original Draft Preparation, Writing – Review & Editing; **Radin D**: Conceptualization, Funding Acquisition, Methodology, Supervision, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

How to cite this article: Wahbeh H and Radin D. **People reporting experiences of mediumship have higher dissociation symptom scores than non-mediums, but below thresholds for pathological dissociation [version 3; referees: 2 approved, 1 not approved]** *F1000Research* 2018, **6**:1416 (doi: 10.12688/f1000research.12019.3)

Copyright: © 2018 Wahbeh H and Radin D. This is an open access article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. Data associated with the article are available under the terms of the Creative Commons Zero "No rights reserved" data waiver (CC0 1.0 Public domain dedication).

Grant information: This work was supported by FUNDAÇÃO BIAL (grant number No. 257/14).
The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

First published: 10 Aug 2017, **6**:1416 (doi: 10.12688/f1000research.12019.1)

REVISED **Amendments from Version 2**

This current version addresses the comments of reviewer three. It removes the term anomalous information reception and replaces it with the more specific term of mediumship. It also highlights that the DES-T is just one way to evaluate dissociative symptoms and that "contact with the dead" is not necessarily indicative of pathology.

See referee reports

Introduction

Dissociation is conceptualized as the disruption of usually integrated functions of consciousness, memory, identity or perception of the environment[1]. Dissociative Identity Disorder (DID) is defined as a personality disorder, when two or more distinct identities or personalities are present, each with its own pattern of perceiving, relating to or thinking about the environment and self. The core clinical symptoms of DID include amnesia, depersonalization, derealization, identity confusion and identity alteration. Dissociative states are prevalent in other psychiatric disorders, such as PTSD[2], and are more prevalent in younger nonclinical populations[3]. Dissociative states exist on a continuum[4–6], from nonpathological expressions, such as highway hypnosis and day-dreaming, to pathological states of derealization (surrealness), and depersonalization (absence of identity)[7]. Almost half of United States adults have experienced a dissociative episode at some time in their lives[8].

A widespread belief possibly related to dissociative symptoms is the idea that it is possible to communicate with deceased individuals; people who report such experiences are called "mediums"[9]. A survey of 18,607 people in the United States and thirteen European countries found that some 25% reported contact with the dead[10]. Double-blind experiments indicate that in some cases the information obtained by mediums can be verified as accurate[11–14]. This suggests that claims of mediumship experiences should not be uniformly dismissed as pathological, however, such claims are commonly regarded as symptoms of DID[5,15,16]. This is despite a lack of clear evidence that mediums exhibit greater pathological symptoms than the general population[17,18]. Perhaps this is because on average, mediums do not regard dissociative symptoms as distressful. Indeed, the most recent Diagnostic and Statistical Manual of Mental Disorders (5th edition) clarifies that pathological DID is defined when "the person must be distressed by the disorder or have trouble functioning in one or more major life areas because of the disorder," and that "the disturbance is not part of normal cultural or religious practices"[1].

In an effort to further our understanding of the relationship between self-report dissociative symptoms and claims of mediumship, we analyzed data from a large convenience sample. We hypothesized that the prevalence of dissociative symptoms in people who claim mediumship abilities would be the same as those who do not maintain such claims.

Methods

This study includes secondary analyses of a specific subset of data on mediumship experiences and dissociative symptoms collected for a different research study approved by the Institute of Noetic Sciences (IONS) Institutional Review Board (approval number, wahh_2016_01). A survey was administered through SurveyMonkey.com with HIPAA compliant methods. Participants were recruited through the IONS Facebook page, IONS mailing lists, and the IONS community networks.

The survey for the parent study from which the data for this study was extracted (Supplementary File 1) began with the study's purpose and informed consent details. Date and country of birth, race, education, and childhood and current spiritual/religious affiliation were collected. Gender was collected on a subsample of participants. Participants indicated if they had mediumship experiences, defined as the "ability to mediate communication between spirits of the dead and the living or the empathic ability to feel the presence and energies of spirits." They also indicated age of onset (if applicable), and family history of similar experiences.

Dissociation Measure

Participants then completed the Dissociation Experiences Scale Taxon (DES-T)[3] that can be used to distinguish pathological from non-pathological dissociation with a threshold score of 30 with an 87% positive predictive value (Cronbach Alpha of 0.75, on a scale of 0–100)[19,20]. The DES-T is just one of many dissociative symptom instruments and was chosen for this study because of its brevity and common use. Respondents selected a percent frequency for eight dissociative symptoms. The DES-T results in two variables: the mean of the eight items; and a binary variable based on the pathology threshold[3].

Statistical analysis

Categorical variable percentages were calculated and examined qualitatively. Means, standard deviations and ranges of continuous variables were calculated. Covariates included gender, age, race, education, income, childhood spirituality and current spirituality, family history, and age of the claimed ability onset. Missing values were randomly distributed except for gender. T-test and chi-square tests evaluated differences between variables. Linear and logistic regressions examined the relationship between dissociative symptoms scores and mediumship experience status. A Bonferroni multiple comparison correction was applied to the α significance value, designating 0.003 as the cutoff for a significant result ($\alpha = 0.05$ divided by 19 items, including seven demographic items, eight DES-T items, DES-T total, DES-T cut-off, linear and logistic regression. Statistics were performed using Stata 12.0 (StataCorp LLC, College Station, Texas).

Results

In total, 3984 participants took the survey from May 4, 2016 to June 7, 2017. Participants were not required to complete all fields and thus only data from 3023 participants who answered the

mediumship question (question 49 of the survey) and completed the DES-T (question 75) were included. Most participants were from the United States (62.6%), followed by the United Kingdom (7.7%) and Canada (6.3%); the remaining participants represented thirteen other countries. Participants were mostly middle aged (51 years ± 16; range 17-96), female (70%), Caucasian (85%), college educated (88%), had an annual income over $50,000 (55%), were raised Christian (71%), and now affiliated as Spiritual but not Religious (60%; Table 1). Current spiritual/religious affiliation was different by mediumship status.

Mediumship experiences were endorsed by 42% of participants, with their first experience starting in childhood (81%), and 53% having family members with similar experiences. The grand mean DES-T score was 14.4 ± 17.3 (range 0–100) across all participants and was significantly higher for mediumship claimants (18.2 ± 19.3) than for non-claimants (11.8 ± 15.2; t = -10.3, p<0.0005; Table 2). A linear regression model for the DES-T total score and mediumship responses, including all covariates, found race and education to be significant predictors (F (3, 2947) = 73.2, p<0.0005). Some 11% of mediumship non-claimants and 22% of

Table 1. Demographic variables for participants by purported ability for anomalous information reception about deceased humans. Mean ± standard deviation; t, Student's two-sample t-test statistic; X^2, chi-square statistic; p, probability.

	Mediumship				
	Yes N - 1,257	No N - 1,766	N	*t* or X^2	*p*
Age	51.7 ± 14.3	51.4 ± 16.4	2751	–0.4	0.68
	Range (17–96)	Range (17–89)			
Gender (% Female)	80.0%	67.2%	519	5.99	0.01
Race (% Caucasian)	86.5%	83.6%	2970	4.76	0.03
Education (% ≥ some college)	87.3%	88.9%	2977	1.66	0.20
Income (% ≥ $50,000 annual income)	38.6%	35.7%	2768	2.32	0.13
Childhood Spiritual/Religious Affiliation (% Christian)	71.7%	70.6%	2986	0.44	0.51
Current Spiritual/Religious Affiliation (% Spiritual but not religious)	65.9%	56.1%	2991	29.6	<0.0005*

Table 2. The eight item and total means, standard deviations, and mean difference sorted by highest mean percentage by mediumship endorsement. Data are presented as the mean ± standard deviation. DES-T, Dissociation Experiences Scale Taxon; t - Student's two-sample t-test statistic; p, probability.

DES-T Item	Mediumship		Mean Difference	t	p
	Yes (n=1257)	No (n=1766)			
5. Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real.	25.8 ± 32.0	17.5 ± 26.7	8.3	-7.7	<0.0005*
8. Some people sometimes find that they hear voices inside their head which tell them to do things or comment on things that they are doing.	25.5 ± 33.5	13.7 ± 25.7	11.8	-11.0	<0.0005*
3. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as though they were looking at another person.	22.2 ± 29.8	12.9 ± 22.9	9.3	-9.7	<0.0005*
7. Some people find that in one situation they may act so differently compared to another situation that they feel almost as if they were two different people.	21.5 ± 30.6	17.6 ± 28.2	3.9	-3.6	<0.0005*
6. Some people sometimes have the experience of feeling that their body does not seem to belong to them.	20.6 ± 30.0	13.4 ± 24.5	7.2	-7.2	<0.0005*
1. Some people have the experience of finding themselves in a place and having no idea how they got there.	13 ± 23.3	7.8 ± 17.2	5.2	-7.06	<0.0005**
2. Some people have the experience of finding new things among their belongings that they do not remember buying.	10.4 ± 21.5	6.9 ± 17.4	3.5	4.95	<0.0005
4. Some people are told that they sometimes do not recognize friends or family members.	6.6 ± 17.7	4.3 ± 14.3	2.3	-4.0	.0001*
Total	18.2 ± 19.3	11.8 ± 15.2	6.4	10.3	<0.0005*

mediumship claimants had scores greater than 30 (X^2 = 63.0, p<0.0005). A logistic regression based on this threshold showed a significant difference in mediumship responses with education (> college) and income (>$50,000) to be significant covariates (LR X^2 = 99.12, p< 0.0005).

Dataset 1. Dissociation symptoms for those with and without self-report anomalous information reception

http://dx.doi.org/10.5256/f1000research.12019.d171352

DT# are the Dissociation Experience Scale Taxon items.

Discussion

In total, 42% of participants endorsed mediumship experiences. Given that the population surveyed was comprised mostly of individuals interested in mediumship-type experiences, this high percentage is not surprising. The prevalence of similar "contact with the dead" reports in other surveys ranges from 10%[21], 25–30%[10], 29%[22], and up to the same figure found in the present survey, 42%[23]. The overall mean dissociation experience score for mediumship claimants was substantially below the DES-T clinical cutoff for pathological dissociation, but it was significantly higher than for non-claimants[3,24].

The threshold for determination of pathological dissociation continues to be debated, and the present findings may be idiosyncratic with respect to use of the DES-T scale[3,24,25]. In addition, the experience of communicating with the dead may also be considered a symptom of a high degree of schizotypy, not just dissociation[26]. We also note that the grand mean DES-T score in our sample was higher than that observed in the general population[19]. This again likely reflects the convenience sampling of IONS members, which reduces the generalizability of our findings. Future studies comparing those who claim versus do not claim mediumship experiences may benefit from use of more comprehensive measures of dissociative symptoms. In addition, specifically asking questions about functional impairment would help discern between pathological and nonpathological aspects of purported mediumship experiences.

Data availability

Dataset 1: Dissociation symptoms for those with and without self-report anomalous information reception. DT# are the Dissociation Experience Scale Taxon items. doi, 10.5256/f1000research.12019.d171352[26]

Competing interests

No competing interests were disclosed.

Grant information

This work was supported by FUNDAÇÃO BIAL (grant number No. 257/14). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Acknowledgements

The authors would like to thank Amira Sagher, Leena Michel and the Institute of Noetic Sciences.

Supplementary material

Supplementary File 1: Survey on genetics of psychic ability.

Click here to access the data.

References

1. American Psychiatric Association: **Diagnostic and Statistical Manual of Mental Disorders.** (5th ed.); Washington DC: American Psychiatric Publishing Inc, 2013.
Publisher Full Text
2. Armour C, Karstoft KI, Richardson JD: **The co-occurrence of PTSD and dissociation: differentiating severe PTSD from dissociative-PTSD.** *Soc Psychiatry Psychiatr Epidemiol.* 2014; **49**(8): 1297–306.
PubMed Abstract | Publisher Full Text
3. Waller NG, Ross CA: **The prevalence and biometric structure of pathological dissociation in the general population: taxometric and behavior genetic findings.** *J Abnorm Psychol.* 1997; **106**(4): 499–510.
PubMed Abstract | Publisher Full Text
4. Kihlstrom JF: **Dissociative disorders.** *Annu Rev Clin Psychol.* 2005; **1**: 227–53.
PubMed Abstract | Publisher Full Text
5. Seligman R, Kirmayer LJ: **Dissociative experience and cultural neuroscience: narrative, metaphor and mechanism.** *Cult Med Psychiatry.* 2008; **32**(1): 31–64.
PubMed Abstract | Publisher Full Text | Free Full Text
6. Ruchsow M, Herrnberger B, Beschoner P, *et al.*: **Error processing in major depressive disorder: evidence from event-related potentials.** *J Psychiatr Res.* 2006; **40**(1): 37–46.
PubMed Abstract | Publisher Full Text
7. Stolovy T, Lev-Wiesel R, Witztum E: **Dissociation: adjustment or distress? Dissociative phenomena, absorption and quality of life among Israeli women who practice channeling compared to women with similar traumatic history.** *J Relig Health.* 2015; **54**(3): 1040–1051.
PubMed Abstract | Publisher Full Text
8. National Alliance on Mental Illness: **Dissociative Disorders.** 2017.
Reference Source
9. Haraldsson E: **Popular psychology, belief in life after death and reincarnation in the Nordic countries, Western and Eastern Europe.** *Nord Psychol.* 2006; **58**(2): 171–180.
Publisher Full Text
10. Haraldsson E, Houtkooper JM: **Psychic experiences in the multinational human values study: Who reports them.** *J Am Soc Psychic Res.* 1991; **85**(2): 145–165.
Reference Source

11. Delorme A, Beischel J, Michel L, *et al.*: **Electrocortical activity associated with subjective communication with the deceased.** *Front Psychol.* 2013; **4**: 834.
PubMed Abstract | Publisher Full Text | Free Full Text

12. Delorme A, Pierce A, Michel L, *et al.*: **Prediction of Mortality Based on Facial Characteristics.** *Front Hum Neurosci.* 2016; **10**: 173.
PubMed Abstract | Publisher Full Text | Free Full Text

13. Beischel J, Boccuzzi M, Biuso M, *et al.*: **Anomalous information reception by research mediums under blinded conditions II: replication and extension.** *Explore (NY).* 2015; **11**(2): 136–142.
PubMed Abstract | Publisher Full Text

14. Beischel J, Schwartz GE: **Anomalous information reception by research mediums demonstrated using a novel triple-blind protocol.** *Explore (NY).* 2007; **3**(1): 23–27.
PubMed Abstract | Publisher Full Text

15. Castillo RJ: **Trance, functional psychosis, and culture.** *Psychiatry.* 2003; **66**(1): 9–21.
PubMed Abstract | Publisher Full Text

16. Seligman R: **Distress, dissociation, and embodied experience: Reconsidering the pathways to mediumship and mental health.** *Ethos.* 2005; **33**(1): 71–99.
Publisher Full Text

17. Roxburgh EC, Roe CA: **A survey of dissociation, boundary-thinness, and psychological wellbeing in spiritualist mental mediumship.** *J Parapsychol.* 2011; **75**(2): 279–299.
Reference Source

18. Negro PJ Jr, Palladino-Negro P, Louzã MR: **Do religious mediumship dissociative experiences conform to the sociocognitive theory of dissociation?** *J Trauma Dissociation.* 2002; **3**(1): 51–73.
Publisher Full Text

19. Waller N, Putnam FW, Carlson EB: **Types of dissociation and dissociative types: A taxometric analysis of dissociative experiences.** *Psychol Methods.* 1996; **1**(3): 300–321.
Publisher Full Text

20. Zingrone NL, Alvarado CS: **The Dissociative Experiences Scale-II: Descriptive Statistics, Factor Analysis, and Frequency of Experiences.** *Imagin Cogn Pers.* 2001; **21**(2): 145–157.
Publisher Full Text

21. Castro M, Burrows R, Wooffitt R: **The paranormal is (still) normal: The sociological implications of a survey of paranormal experiences in Great Britain.** *Sociol Res Online.* 2014; **19**(3): 16.
Publisher Full Text

22. Pew Research Center: **Supernatural experiences.** 2009.
Reference Source

23. Greeley A: **Mysticism goes mainstream.** *Am Health.* 1987; **7**: 47–49.
Reference Source

24. Leavitt F: **Dissociative Experiences Scale Taxon and measurement of dissociative pathology: Does the taxon add to an understanding of dissociation and its associated pathologies?** *J Clin Psychol Med Settings.* 1999; **6**(4): 427–40.
Publisher Full Text

25. Wright DB, Loftus EF: **Measuring dissociation: comparison of alternative forms of the dissociative experiences scale.** *Am J Psychol.* 1999; **112**(4): 497–519.
PubMed Abstract | Publisher Full Text

26. Watson D: **Dissociations of the night: individual differences in sleep-related experiences and their relation to dissociation and schizotypy.** *J Abnorm Psychol.* 2001; **110**(4): 526–35.
PubMed Abstract | Publisher Full Text

27. Wahbeh H, Radin D: **Dataset 1 in: People who report anomalous information reception have higher dissociation symptom scores.** *F1000Research.* 2017.
Data Source

Open Peer Review

Current Referee Status: ✗ ✓ ✓

Version 3

Referee Report 19 January 2018

doi:10.5256/f1000research.14736.r30021

✓ **Adrian Parker**
Department of Psychology, University of Gothenburg, Gothenburg, Sweden

The authors have taken into account the mandatory changes. The article is now substantially improved and merits indexing.

Competing Interests: No competing interests were disclosed.

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 2

Referee Report 01 December 2017

doi:10.5256/f1000research.13998.r27912

? **Adrian Parker**
Department of Psychology, University of Gothenburg, Gothenburg, Sweden

The version I have seen is basically sound but needs some attention to the issues that I raise below. As a native (UK) English speaker, I can endorse that the English in this version is correct (with the exception of a couple of missing words noted below) and clear. The statistical treatments are appropriate and are judged to be correct. The study has some importance relating to the efforts to distinguish little understood spiritual and transpersonal experiences from the more bizarre and perhaps pathological ones.

Given the major constraints of the word count then the paper is acceptable but it is less than commendable that no hint of the complexity of the issues has been made in the paper. The article focuses rather exclusively on one singular conception of dissociation – that by Colin Ross and co-workers and their the DES-T scale. According to this view there is a normal continuum to dissociative experiences along with a cut-off point for the more bizarre types of experiences, which are seen then as an expression of pure pathology. The eight questions from DES-T that were selected for this study are those highlighting this potential diagnosis. There are of course other conceptions – such as those of Watson and co-workers - and at least a half dozen other tests of dissociation (Watson, 2001[1]; Watson & Loftus, 1999[2]). The authors write “Claims of such abilities have been considered symptoms of dissociative disorders” which is

partially true but it is equally true that contact with dead (or even living) spirits is often considered to be symptomatic of individuals being psychosis-prone that is schizotypy – and if there is no distress to warrant a main DSM-diagnosis or DSM axis of personality disturbance - then this is labeled “happy schizotypy”. Indeed, found amongst the authors’ battery of tests and questions which number some 70 or more, are a set relating to just this. From this presentation it is clear that this study is only a minor part of a larger one, which will be or is being ”milked” for several papers. This is of course nowadays a standard practice (but involving naturally some major weaknesses) with internet studies. What is perhaps here rather misleading is that the study is presented to the potential responders as ”a study of genetics of extended human experience” – a presentation which might be considered a little disingenuous in the context of the issues in the current paper(s).

This brings up the issue of what I think needs to be dealt with before indexing: how the context of the presentation might have influenced the major finding that the authors report and which the reviewer Prof. Ross attributes much importance to, namely that mediumship claimants were twice as likely as non-claimants to end up on the ill-side of the pathology cut-off. Although together 42% of the respondents endorsed communicating with the dead - the so-called ”AIR experiences”, it should be emphasized that AIR experiences were not the same as trance in that so-called channeling and clairaudience experiences might fall under this. Indeed it is surprising that a simple question concerning trance states does not seem to have been included since such individuals might have formed an interesting core group. The Noetic Sciences website under the aegis of which the (Surveymonkey) study was conducted, is dedicated to studying ”interconnectiveness” so it seems likely that those viewing the website and willing to answer the huge multitude of questions were highly motivated to confirm the mission of the website. This may well have created response biases. The authors write: ”Notably, the top five endorsed DES-T items were consistent with an AIR experience.” (Personally I think the addition of yet another acronym and neologism in the form of AIR only adds confusion to the overladen terminology in this field – it would surely have been better to keep to the explicit term mediumhip.). Accordingly I think their comment should be extended here so as to make some concession as to how the above findings can be vulnerable to the above mentioned influence.

Page 1 line 6 from bottom: should read than non-claimants
Page 3 line 3 from bottom should read (presumably) of pathological dissociative

References

1. Watson D: Dissociations of the night: individual differences in sleep-related experiences and their relation to dissociation and schizotypy.*J Abnorm Psychol*. 2001; **110** (4): 526-35 PubMed Abstract
2. Wright DB, Loftus EF: Measuring dissociation: comparison of alternative forms of the dissociative experiences scale.*Am J Psychol*. 1999; **112** (4): 497-519 PubMed Abstract

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reader Comment 19 Dec 2017

Helané Wahbeh, Oregon Health & Science University, USA

Thank you for your thoughtful comments to our manuscript. We have revised the manuscript in an attempt to address your feedback.

Regarding complexity of dissociative pathology:
We have added a sentence about this in the discussion and included another sentence and reference about schizotypy.

Regarding larger dataset.
Additional language was added to the manuscript to clarify that this manuscript included a secondary analysis of data collected from a study with very different research questions. The survey included “a study of genetics of extended human experience” since that was the purpose of the larger study through which the data was collected. This secondary analysis was not a research question or aim of that study. The results of that study will submitted for publication when it is complete.

Regarding mediumship versus the other AIR experiences surveyed.
Yes, we agree we are very interested in such relationships. We are working on another analyses that will explore the relationship of the different AIR data collected in this and other studies in a full-length research paper. We were particularly interested in the mediumship and dissociation relationship and thus, evaluated this relationship in the data in this short report.

Regarding AIR versus mediumship terminology.
We agree this language likely confuses the issue. We have replaced AIR with mediumship throughout.

Competing Interests: No competing interests were disclosed.

Referee Report 06 November 2017

doi:10.5256/f1000research.13998.r27178

Colin A. Ross
The Colin A. Ross Institute for Psychological Trauma, Richardson, TX, USA

This is an interesting study with a large N. Within the limitations of the methodology, it tells us that individuals with anomalous information reception (AIR) tend to be somewhat more dissociative than those without such experiences. This is consistent with prior literature. The study would have been stronger if the taxometric statistical analysis had been applied to the 8 DES-T items (available at www.isst-d.org), and if the full 28-item DES had been administered, but this would have made for a lengthy survey. The sample population is more dissociative and has more AIR than the general population and this provides interesting information about IONS members and affiliates that I don't think has been published before. As Dr. Cardena noted, the references could have been more extensive, but I would say they are sufficient for a brief report.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

Referee Expertise: Dissociative disorders, psychological trauma

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Referee Report 21 August 2017

doi:10.5256/f1000research.12999.r24906

Etzel Cardeña
Center for Research on Consciousness and Anomalous Psychology (CERCAP), Department of Psychology, Lund University, Lund, Sweden

This paper is a good example of why the F1000Research model is so bad... The manuscript is poorly written, does not show a good grasp of the relevant literature or that a good literature search was conducted, misrepresents some of its references, and very probably has an important mistake in a Table or its analyses. All of these issues could have been solved during the regular peer review process so that at the end the only publicly available version would have been an adequate one.

Although it is a short paper, it would take me too long to list all of the problems in it, so I will just mention 2-3 examples per problematic issue:

1. Poor writing:
   From the abstract: a) "symptoms of [a] dissociation [dissociative] disorder". b) "Both AIR claimants and non-claimants scored lower than the clinical cutoff" [despite the previous sentence in the abstract mentioning that percentages of both groups had scored above the cutoff. c) "incorporating [a] comprehensive dissociative symptom measurement, as well as their effects on the person's functionality" [grammatical number is inconsistent, besides the fact that "measurement[s]" would not have an effect on functionality.

2. Inadequate coverage of the literature:
   a) There have been various recent studies specifically evaluating possible psychopathology in people reporting anomalous experiences (in general) and spirit possession/mediumship (in particular), yet only very few are listed in the Reference section. b) Contrary to what the authors write that "Claims of such abilities are often considered to be symptoms of dissociation [dissociative] disorders", yet both the anthropological literature and, more relevant in this case, the Diagnostic and Statistical Manual taxonomy, ever since its 4th edition, has specifically required that clinically significant levels of distress or dysfunction be present to consider a dissociative manifestation pathological.

3. Misrepresentations of cited literature:
   a) A paper by Rebecca Seligman is used to support the above quotation that mediumship abilities are often considered to be symptoms of dissociation, yet she specifically states that "dissociation is not a pathological experience, but rather a therapeutic mechanism", along the lines of what others in anthopology and psychology have written. b) "Almost half of United States adults...", yet this study was conducted in Winnipeg, Canada.

4. Statistical issues:
   a) In Table 1, a 3% difference (87 vs 84%) is reported as significant at the minus .05 level, yet an almost identical difference with about the same number of participants (87 vs 89%) is reported as non-significant. I very much doubt that both statements, particularly the first one, are accurate. b) There are multiple references to probability values = 0 or less than 0, but of course it goes against inferential statistics to state that instead of, for example, less than .001, or whatever.

Is the work clearly and accurately presented and does it cite the current literature?
No

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
No

If applicable, is the statistical analysis and its interpretation appropriate?
No

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
No

Competing Interests: No competing interests were disclosed.

I have read this submission. I believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Author Response 10 Oct 2017

Helané Wahbeh, Oregon Health & Science University, USA

Response to Reviewer #1

"This paper is a good example.....so that at the end the only publicly available version would have been an adequate one."
-Thank you for you taking the time to review our paper and for your thoughtful comments. Yes, we agree that through the traditional peer-review process, the final public version is superior to initial versions. We appreciate the transparent nature of F1000 review process as a way to reduce bias in publishing.

"Poor writing"
-Thank you for highlighting writing errors in our manuscripts. We have corrected the highlighted grammatical errors and unclear wording. We have also reviewed the entire paper for other writing errors.

"Inadequate coverage of the literature"
-We agree that the paper does not fully examine the literature related to this topic. The reason for this is the word count limits of a short article (1000 words). We have included additional references and attempted to succinctly include a broader understanding of the current literature.

"Misrepresentations of cited literature"
a) A paper by Rebecca Seligman
- Rebecca Seligman also states "Medical approaches to the question have implicated psychological disturbance as a motivational factor for some, yet they fail to explain how and why some psychological disturbances, in some individuals, come to be expressed as spirit-possession mediumship." She also has a very nice discussion in the section "MEDIUMSHIP AND MENTAL ILLNESS REVISITED" on mediumship being considered a pathology. Because of the word limitations, we did not highlight the specific sections of her paper that refer to these issues but allow the reader to read the paper to appreciate the full scope of the discussion of mediumship and mental illness.

b) "Almost half of United States adults...", yet this study was conducted in Winnipeg, Canada.
-This reference has been corrected.

"Statistical issues"
a) In Table 1, a 3% difference (87 vs 84%) ..... I very much doubt that both statements, -particularly the first one, are accurate."
-These statistics have been double checked and they are accurately represented. We have also included a conservative Bonferroni multiple comparisons correction.

b) There are multiple references to probability values = 0 or less than 0, but of course it goes against inferential statistics to state that instead of, for example, less than .001, or whatever.
-The p statistic reporting has been corrected.

Competing Interests: We have no competing interests to disclose

The benefits of publishing with F1000Research:

- Your article is published within days, with no editorial bias
- You can publish traditional articles, null/negative results, case reports, data notes and more
- The peer review process is transparent and collaborative
- Your article is indexed in PubMed after passing peer review
- Dedicated customer support at every stage

For pre-submission enquiries, contact research@f1000.com

F1000Research