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# Controlled Experiments Involving Anomalous Information Reception with Mediums: An Analysis of the Methods Applied in Recent Studies

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## HIGHLIGHTS

A targeted analysis of prior mediumship studies identified several procedures that coincide with positive results and might prove useful to advance research in this area.

## ABSTRACT

The study of Anomalous Information Reception (AIR) with mediums, where an individual supposedly has access to data without the use of the basic senses, claiming to have received information from deceased personalities, has the potential to introduce new information about the relationship between mind and brain. Recent studies that investigated whether AIR occurs in mediumistic procedures have produced conflicting results. This article compares eight studies with greater rigor in the control over information leakage with regard to methods and results, with the aim of identifying the cause of the disparity in results. We found that there seems to be a higher probability of significant results for AIR when the study protocols select mediums with previous consistent evidence of AIR; select sitters who are strongly motivated for the study; supply the medium with some information about the deceased; allow him/her to speak freely but also ask objective questions; provide scores for both full readings and individual items; and avoid a large number of readings and items of information for evaluation. This diligence seemingly provides greater equilibrium between ecological validity and control over information leakage, favoring the occurrence and detection of AIR.

## KEYWORDS

Anomalous information reception, mediumship, medium, mind-brain relationship, method, survival, protocol

## INTRODUCTION

Anomalous experiences are those that are unusual or that deviate from the prevailing scientific paradigm, such as reports of telepathic, mystical, mediumistic, or out-of-body experiences (Cardeña et al., 2013). There are accounts of the occurrence of these experiences in all societies and epochs, (Bozzano, 1997; Shushan, 2009). One of the anomalous experiences is the so-called Anomalous Information Reception (AIR), which happens when the

person supposedly exhibits knowledge of information to which he/she would not have had access using the five basic senses or through inferential reasoning. Mediumistic experiences, where an individual referred to as a medium claims to have received information, perceived sensations, or felt himself/herself to be under the psychic or motor influence of a deceased personality (Alvarado, 2010; Bastos et al., 2015; Gauld, 1983; Moreira-Almeida, 2012), figure among those experiences where AIR has allegedly occurred.



Scientific investigations of mediumistic experiences have been conducted since the middle of the 19th century (Alvarado, 2012; Bastos et al., 2015; Kelly & Arcangel, 2011; Lamont, 2004; O’Keeffe & Wiseman, 2005; Pimentel, 2014). The practice went into decline a century later (Kelly, 2010) but resurfaced in the first decade of the current millennium (Daher et al., 2017).

In many cultures, a significant number of people believe in the genuineness of the mediumistic phenomenon. In the USA, for example, as much as 38% of the population believe in mediumistic communication (Newport & Strausberg, 2001), and in the UK up to 32% do (Ipsos Mori, 2007).

In addition to the influence that this belief exerts over millions of people, studies into mediumship can also be justified by the potential to introduce new information about the relationship between mind and brain, and by the influence that it may have on the mental health of grieving individuals or those experiencing anxiety in relation to their own mortality.

There are at least four main hypotheses regarding the alleged phenomenon of AIR in mediumship (Braude, 2003; Gauld, 1983; Moreira-Almeida, 2012).

The first hypothesis is fraud (Braude, 2003; Gauld, 1983; Moreira-Almeida, 2012). Information is supposedly obtained from data revealed by the sitter, directly to the medium, or published on social media. It could also be achieved using cold reading techniques where the medium succeeds in acquiring information by employing disguised questions. Another way to obtain information is to read body language, clothing, tattoos, or accessories. Also, with the hypothesis of fraud, there is a possibility of chance hits, particularly if the message only contains generic information.

A second hypothesis is dissociative identity (Braude, 2003; Gauld, 1983; Moreira-Almeida, 2012), where the unconscious of the medium, who is usually in a trance, personifies a deceased person, using information in his/her own memory, or when subliminal memories spring to the mind and are wrongly interpreted as coming from a deceased personality (also called cryptomnesia) (Dorsch, Häcker, & Stapf, 2001). In these cases, the person believes, in good faith, that he received a genuine mediumistic communication.

A third hypothesis to explain AIR would be Extra Sensory Perception (ESP), where the person allegedly obtains information using telepathy, through the mind of the sitter, or by clairvoyance, from documents or other sources at a distance (Braude, 2003; Gauld, 1983; Moreira-Almeida, 2012). This hypothesis is characteristic of anomalous reception, but not communication with a deceased personality.

The last hypothesis is actual communication with a

deceased personality (Braude, 2003; Gauld, 1983; Moreira-Almeida, 2012). This explanation implies that the mind and brain are sufficiently independent and that the former can continue to exist after the death of the latter. This hypothesis may also be considered a form of telepathy, the difference being that the source of the information captured by the medium would not be the mind of a living person (e.g., the grieving sitter), but rather would belong to the deceased loved one.

Mediumship has been studied using several complementary approaches. There have been studies into the mental health of mediums (Moreira-Almeida et al., 2007), the neurophysiology of the mediumistic trance (Mainieri et al., 2017), the psychological effect of the medium’s message upon the grieving person (Hott & Reinaldo, 2020), and the occurrence of AIR in alleged mediumistic communications (Beischel & Schwartz, 2007; Beischel et al., 2015; Freire et al., 2022; Jensen & Cardeña, 2009; Kelly & Arcangel, 2011; O’Keeffe & Wiseman, 2005; Rock et al., 2014; Tressoldi et al., 2022).

Recent studies into the occurrence of AIR have produced divergent results, even when applying rigorous methods to control information leakage. A recent meta-analysis found positive results indicative of AIR (Sarraf et al., 2021), while another, employing a smaller number of studies, found negative results (Rock et al., 2021). This points to the need for an analysis of the differences between the various protocols employed in a quest to explain the discrepancies and help to move the field forward.

A major challenge of research into AIR in mediumship is the need for volunteers with this supposed, high-level ability, who are capable of carrying out mediumship activities under the restrictions imposed by the experiment’s control protocols. It is often claimed that mediumistic communication depends on a delicate balance, only materializing under favorable conditions (Kardec, 2010; Stevenson, 1977), which vary according to the culture (Alvarado, 2010) and the medium. Among other conditions, some mediums claim they can only establish a connection if they are situated in a favorable environment and a scenario compatible with their beliefs, while others claim they need some information to be able to summon the deceased (Beischel, 2007).

Regardless of whether these requests are necessary or imaginary, irrespective of the nature of the study, it is always necessary to seek equilibrium between the conditions that the participant believes in, thereby affording ecological validity to the experiment (Belzen & Hood, 2010), and the required control over the experience. As an example, Delorme et al. (2020) suggest that mediums were more anxious than non-medium participants (control group) in

a mediumistic experiment, possibly because they felt they were being put under the spotlight.

This article aims to analyze the methods employed and the results achieved using the most rigorous recent studies investigating AIR in mediumship, seeking explanations for the disparity of results. Based on the hypothesis that a balance is required between ecological validity and control over information leakage, we analyzed those aspects of the methodology that are more related to the interface between medium and sitter. Based on this analysis, we propose methodological aspects that would appear to produce more effective protocols for investigating AIR in mediumship.

## METHOD

A bibliographic search was carried out on Web of Science, PubMed, and Scopus databases. For the Web of Science database, filters were used to limit the search to the fields of Psychiatry, Religion, Integrative Complementary Medicine, Psychology, Clinical Neurology, Neurosciences, Psychology Experimental, Psychology Multidisciplinary, Psychology Clinical, and Medicine Research Experimental. For Scopus, the search fields were Medicine, Psychology, Multidisciplinary, Health Professions, and Neuroscience. The keywords used were “mediumship,” “mediumistic,” and “after-death communication.” The inclusion criteria were articles published in English, dealing with quantitative investigation into the accuracy of mediumistic information, employing at least triple-blind protocols, and published between January 1, 2000, and September 1, 2022.

The triple-blind protocol means that: I) the mediums are blind to the identities of the sitter and the deceased; II) the researcher interacting with the mediums is blind to the identities of the sitter and the deceased; and III) the sitters blindly scoring the accuracy of the messages are masked to the identity of the medium and to which message is the one directed towards him/her, and those which were inserted as a control (Bastos, 2015).

Five methodological characteristics of the selected studies were analyzed:

**(1) Selection of mediums** – protocols employed for the selection of mediums for the experiment.

**(2) Selection of sitters** – protocols employed for the selection of sitters.

**(3) Sample size** – number of mediums, sitters, and readings performed in the experiment.

**(4) Reading control** – protocols employed in the information production phase, the stage with the biggest impact on the medium. The following aspects were considered: type of interaction established with the medium; information disclosed; information requested;

and if the medium was permitted to choose which deceased personality he would attempt to make contact with.

**(5) Reading evaluation** – protocols employed in the information evaluation phase, the stage with the biggest impact on the sitter. The type of data sent for evaluation and the quantity thereof were taken into consideration.

These five characteristics were selected because they relate to the interface between medium and sitter, which is the focus of our hypothesis.

## RESULTS

The search of the Web of Science database produced 120 articles, while Pubmed produced 15 and Scopus 149, totaling 284 studies. Of these, 268 were discarded as they did not satisfy the inclusion criteria and eight were rejected as they were duplicates. The eight studies that satisfied the inclusion criteria are presented below, in chronological order, with a summary of the methods and results found. The key points in each method are exhibited in Chart 1, for the purposes of comparison.

### Study A

This study was conducted in England by O’Keeffe and Wiseman (2005), with 5 mediums and 5 sitters.

The experiment was conducted with the medium and sitters in separate rooms. For one hour, the medium sought contact with one or more deceased personalities related to the sitter, freely manifesting what he felt or perceived about the deceased. During the attempts by the medium, the sitter would listen to his/her music of choice. At the end of the allotted time, this sitter made way for the next one and the process was repeated.

The readings were transcribed and separated into phrases or items of information, and the sitters independently evaluated all the statements produced by all the mediums for all the sitters. At the end, an overall score for each reading was arrived at by summing up the individual classifications attributed to each statement comprising the reading. Each sitter evaluated 1,169 items of information, assigning marks for the accuracy of each piece of information.

As a result, the scores given by each sitter to their reading were no higher than those assigned by the other four sitters ( $p$  value of all mediums combined was 0.63).

### Study B

A study conducted by Beischel and Schwartz (2007) in the USA, involving eight mediums and eight sitters.

This study employed a “proxy sitter” protocol whereby one of the researchers, blinded to the real sitter, but

**TABLE 1.** Summary of the Key Points of the Protocols and Results

Sample	Medium selection criteria	Sitter selection criteria	Protocols for reading stage	Protocols for evaluation stage	Result
<b>A</b> 5 mediums 5 sitters 25 readings	Certificates issued by the Spiritualists' National Union in the UK; it is unclear if they have already produced data indicative of AIR.	Homogeneous in terms of sex and age. Apparently, it was not evaluated if there might be impactful, emotional losses and if they were motivated for the experiment.	<b>Interaction</b> No interaction. Sitter and researchers in rooms next to the medium's room. <b>Information disclosed</b> No information supplied. <b>Information requested</b> Permitted to speak freely <b>Selection of deceased</b> The mediums could attempt to contact any of the deceased related to the sitter, but it had to be a communication from deceased personalities for all the sitters.	<b>Item received</b> Items separated out. <b>Quantity</b> All items from 25 readings, amounting to over one thousand items.	Not significant
<b>B</b> 8 mediums 8 sitters 16 readings	Previously demonstrated ability to produce accurate information	Believed in after-life and mediums and had a very close deceased personality.	<b>Interaction</b> Remote interaction with proxy, by telephone. <b>Information disclosed</b> Forename of deceased <b>Information requested</b> 4 objective questions and allowed to speak freely. <b>Selection of deceased</b> Unable to choose.	<b>Item received</b> Full readings. <b>Quantity</b> Two readings - theirs and a control.	Significant
<b>C</b> 1 medium 7 sitters 7 readings	Selected based on reputation; it is unclear if he had already produced data indicative of AIR.	All had lost at least two significant persons, but only three had lost at least one close person.	<b>Interaction</b> No interaction. Researcher in room to the side, sitter at distance. <b>Information disclosed</b> Name of sitter <b>Information requested</b> Allowed to speak freely. <b>Selection of deceased</b> The medium could attempt to contact any of the deceased related to the sitter, but it had to be a communication from deceased personalities for all the sitters.	<b>Item received</b> Full reading and items separated out. <b>Quantity</b> Seven readings, average of 30 statements per reading.	Not significant
<b>D</b> D-I 4 mediums 12 sitters 12 readings D-II 9 mediums 40 sitters 40 readings	Not described, it is unclear if they had already produced data indicative of AIR.	Motivated, with significant losses	<b>Interaction</b> Remote interaction with proxy sitter, by telephone. <b>Information disclosed</b> D-I: Name of sitter and day/month of birth. D-II: Neutral photograph of the deceased. <b>Information requested</b> Allowed to speak freely <b>Selection of deceased</b> They could not choose	<b>Item received</b> D-I: Full reading and items separated out. D-II: Full reading. <b>Quantity</b> D-I: Four full readings and items of information separated out; number of items not provided. D-II: Six full readings.	D-I Not significant D-II Significant

representing him/her, interacted with the medium. The proxy sitter interacted with the mediums by telephone, stated the deceased's forename, and asked if the medium had information about the deceased. He then asked specific questions about the deceased (cause of death, hobbies, description of the deceased's appearance and personality) and if he/she had any specific message for the sitter. Each sitter performed a blind scoring of the intended and control readings, in four modes: They scored each item for accuracy and emotional significance; scored the

reading as a whole, and also had to choose which letter he/she thought was directed to him/her.

The result was that the average summary rating for the intended readings (mean = 3.56) was significantly higher ( $p = 0.007$ ) than for the control readings (mean = 1.94). Sitters chose the intended reading 81% of the time ( $p = 0.01$ ).

### Study C

This study was conducted in Sweden by Jensen and

Sample	Medium selection criteria	Sitter selection criteria	Protocols for reading stage	Protocols for evaluation stage	Result
<b>E</b> 19 mediums 38 sitters 38 readings	Mediums were selected and trained using a certification procedure	Consultants were selected based on an online pre-screening questionnaire	<b>Interaction</b> Interaction with proxy sitter remotely via telephone. <b>Information disclosed</b> Forename of deceased <b>Information requested</b> Objective questions and allowed to speak freely. <b>Selection of deceased</b> Unable to choose.	<b>Item received</b> Full reading and items separated out. <b>Quantity</b> Two readings.	Significant
<b>F</b> F-I 14 mediums 28 sitters 28 readings F-II 20 mediums 40 sitters 40 readings	The mediums previously demonstrated their ability to produce accurate information	Randomly chosen from a large list of volunteer sitters who "reported wanting to hear from one specific discarnate".	<b>Interaction</b> Interaction with proxy sitter F-I: Remotely via telephone. F-II: Part of the readings performed in person. <b>Information disclosed</b> Forename of deceased <b>Information requested</b> Objective questions and allowed to speak freely. <b>Selection of deceased</b> Unable to choose.	<b>Item received</b> Full reading and items separated out. <b>Quantity</b> Two readings.	F-I: Significant F-II: Significant
<b>G</b> 8 mediums 94 sitters 78 letters 64 readings	Five mediums produced evidence of previous production indicative of AIR, and only one had experience in the production of letters from a deceased to grieving relatives.	"mourning an adult relative/friend who had a strong emotional bond"	<b>Interaction</b> With proxy in person and sitter at distance. <b>Information disclosed</b> Forenames of sitter, deceased and photograph of the deceased. <b>Information requested</b> Allowed to speak freely <b>Selection of deceased</b> Able to choose.	<b>Item received</b> Full reading and/or letter, and items separated out. <b>Quantity</b> Six full readings/letters and items separated out. Number of items not provided.	Not significant
<b>H</b> 9 mediums 36 sitters 38 readings	it is unclear if they had already produced data indicative of AIR.	"Serious interest in having a reading related to a deceased relative or friend,"	<b>Interaction</b> Remote interaction with researcher, via app. <b>Information disclosed</b> Forename of deceased <b>Information requested</b> Questions and allowed to speak freely. <b>Selection of deceased</b> Unable to choose.	<b>Item received</b> Full Reading and items separated out. <b>Quantity</b> Two full readings and their items of information.	Significant

Cardeña (2009), with one medium and seven sitters. The medium received envelopes containing the names of the sitters and sought to receive information from potentially deceased personalities related to that sitter, during a reading lasting 15 minutes, with both video and audio being recorded, and no interaction with the researchers, not even to receive specific questions. For each reading performed, the medium produced a self-assessment in terms of her level of confidence therein. Of the seven readings, five were described as "unconfident" and two were considered "somewhat unconfident." Each sitter scored all seven readings and individual statements (the ones addressed to himself/herself and others) in terms of their applicability to their personal history and current life situation.

Neither the overall reading scores (z-score of -1.2,  $p = .89$ ) nor the average score for each statement ( $z = -1.3$ ,  $p = .90$ ) were better than would be expected by chance.

### Study D

In the study carried out in the USA by Kelly and Arcangel (2011), two investigations were conducted. In the first investigation (D1), four mediums and 12 sitters were involved. The second investigation (D2) comprised nine mediums and 40 sitters.

The mediums performed readings by telephone, interacting with researchers assuming the role of proxy sitters. In D1, the mediums received the sitters' forenames and birth dates (but not the year), while in investigation D2 they only received a "neutral" photograph of the deceased.



In D1, the sitters received a blind transcript of their own reading and three readings intended for someone else, chosen at random, as well as the lists of individual statements extracted from these messages. Sitters rated the accuracy of each statement and then picked out what they thought was their own reading from the group of four. In D2, they received a group of six readings (the intended reading plus five control readings, paired by gender and age) and had to blindly rate each one.

The results of D1 were not significant: Only two of the 12 sitters correctly chose their own reading, which falls into the realms of chance. D2 did produce significant results: Of the 38 readings, 14 were correctly selected as first-choice and seven as second-choice; 30 readings were ranked in the top half ( $z$  score  $-3.89$ ,  $p < 0.0001$ ).

### Study E

This study was conducted in the USA by Rock et al. (2014), with 19 mediums and 38 sitters.

The reading took place via a telephone call, in which the mediums interacted with proxy sitters. Each medium performed two readings, one for each of the two pairs of deceased. Mediums initially answered objective questions (such as cause of death, physical features, personality, hobbies) and then proceeded to open discourse. The sitters received two readings (the intended one and the paired control) and had to evaluate them in two modes: overall score and the selection of which reading they believed to be theirs. The success rate of sitters selecting the correct letter was better than what might be expected by chance, 68.42% ( $z$  score = 2.12,  $p = .02$ ).

### Study F

In the study conducted in the USA by Beischel et al. (2015), two controlled investigations were carried out. In F1 there were 14 mediums and 28 sitters, while in F2 there were 20 mediums and 40 sitters.

In F1, the reading took place via a telephone call, where the medium interacted with a proxy sitter. The procedures were similar to those used in Rock et al. (2014): Each medium performed two readings, one for each of the two pairs of deceased, answering objective questions (cause of death, physical features, personality, hobbies) followed by open discourse. F2 repeated the protocol but with two changes: 12 readings were performed with the blinded proxy sitter physically present, and additional items were included in the objective questions (such as the description of the deceased's hair, eyes, physical condition, height, profession, favorite foods, etc.).

In both investigations, the sitters received two

readings (the intended one and the paired control) and had to evaluate them in three modes: individual scores of each item of information, overall score, and the selection of which reading they believed to be theirs.

Average overall scores of the target readings were higher than for the decoy readings, both in the 27 readings in F1 ( $2.78 \pm 0.26$  vs.  $2.04 \pm 0.26$ ,  $p = 0.04$ ) and 31 readings in F2 ( $2.97 \pm 0.26$  vs.  $2.13 \pm 0.26$ ,  $p = 0.007$ ). Seventeen target readings (63%) were correctly chosen in F1 ( $p = 0.12$ ) and 21 (67.7%) in F2 ( $p = 0.04$ ).

### Study G

This study was conducted in Brazil by Freire et al. (2022). Unlike the studies described above, in this study the medium was allowed to perform readings (in which he verbalizes information supposedly transmitted by the deceased) and/or write letters (allegedly transmitted by the deceased), a process known as psychography which is common among mediums in Brazil. Eight mediums and 94 sitters participated.

Initially, four mediums were invited who had broad experience of writing mediumistic letters with non-controlled evidence of AIR. However, all of them refused to take part, three of them claiming that the conditions of the experiment diverged significantly from their own practices, mainly due to the lack of interaction with sitters. Subsequently, researchers selected eight other experienced mediums, though less experienced in terms of the production of mediumistic letters.

The mediums interacted with a proxy sitter, who supplied the sitter's forename, a photograph, and the forename of the deceased from whom a message was expected. The mediums were able to choose which deceased individual to attempt to make contact with. In total, 78 letters and 64 readings were generated, which were transcribed into separate items of information.

The sitters received a set of six readings/letters, the one addressed to them and five controls. They scored individual items of information as well as the full reading/letter.

There were no statistically significant differences between the global evaluation scores and the target and control readings ( $0.92 \pm 0.76$  SD and  $0.75 \pm 0.53$  SD;  $z$  score 1.198,  $p = 0.23$ ) and letters ( $0.54 \pm 0.98$  SD and  $0.48 \pm 0.47$  SD;  $z$  score 0.429,  $p = 0.67$ ).

### Study H

This study was conducted in Italy by Tressoldi et al. (2022) with nine mediums and 36 sitters. The mediums performed readings remotely, via a conference call using

Skype or WhatsApp, interacting with the researcher in the role of proxy sitter. The medium was provided with just the forename of the deceased and was asked to provide a physical description and produce other information related to the deceased, as well as if there was a message for the sitter.

Each sitter received his/her reading and a control reading, paired for gender and produced by the same medium. Sitters had to blindly score the readings, both in terms of the overall reading and individual items.

Sitters selected the intended reading 65.8% of the time ( $p = 0.036$ ). The average overall score (range: 0–6) for target readings was higher than for the controls ( $3.36 \pm 1.47$  vs  $1.77 \pm 1.3$ ;  $p = 0.001$ ).

## DISCUSSION

The eight studies highlighted in this article followed similar recommendations for the control of information leakage, but arrived at different results (five obtained significant results while three did not). Sometimes, divergent results occur between two studies using similar protocols due to minor alterations to the method. Below, a number of considerations will be formulated to seek a better understanding of the divergent aspects.

### Medium Selection Process

A number of authors have argued that the selection of mediums is one of the steps in the method that has most influence on the outcome (Freire et al., 2022; Kelly, 2010; Kelly & Arcangel, 2011) and that it would be more appropriate to choose the most proficient mediums, those who have already produced evidence indicative of AIR (Moreira-Almeida, 2012). The selection of participants with special abilities appears important, not only in mediumistic studies but also in many other areas, including ESP and other anomalous experiences (Cardeña et al., 2013). The results of the studies analyzed in this article corroborate this viewpoint.

Of the three studies that did not find any results indicative of AIR, in two the selection did not appear to have demanded proof of previous production of messages indicative of AIR (Jensen & Cardeña, 2009; O’Keeffe & Wiseman, 2005), while in the third study only five of the eight mediums achieved production suggestive of AIR, and, of these, only one had produced messages for grieving relatives on a regular basis (Freire et al., 2022). As for the five studies that produced results indicative of AIR, in three of them one of the selection criteria was to have demonstrated evidence of prior AIR production (Beischel & Schwartz, 2007; Beischel et al., 2015; Rock et al., 2014).

In the other two, it is unclear if this criterion was applied. In both, however, a larger number of mediums was used, which may have increased the chances of finding a medium with a superior ability to produce AIR (Kelly & Arcangel, 2011; Tressoldi et al., 2022). In the study conducted by Kelly and Arcangel, for example, in the first investigation, with the participation of four mediums, one achieved a hit rate of 100%; in the second investigation, involving nine participating mediums, one obtained a hit rate of 100%.

### Sitter Selection Process

Mediums claim that deceased personalities are mentally summoned by their living, loved ones (Kardec, 2010). For them, it would be important to choose sitters who are deeply committed to the experiment (Beischel, 2007) and report a deep emotional need for contact with the deceased. In a recent study of 142 bereaved sitters, 21 received a mediumistic letter from their loved ones. The severity of the grief was the only feature that set apart sitters who received mediumistic communication from those who did not. The more severe the grief, the higher the chances of receiving some communication (Gomide et al., 2021). Of the studies analyzed in this survey, only one stated that it did not use sitter selection criteria which included impactful, affective losses (O’Keeffe & Wiseman, 2005), and was one which did not find a result indicative of AIR. In another study with negative findings (Jensen & Cardeña, 2009), all seven sitters had lost a “significant person,” but only three of them “had lost at least one close person” (p.63).

### Reading Controls

This is the most delicate stage of the method from the medium’s point of view on account of the supposition that he requires minimum conditions in which to operate his mediumship (Beischel, 2007; Kardec, 2010; Stevenson, 1977).

As for any interaction that the medium may have had, in two studies the medium did not interact with anyone, and in both of these the results were negative for AIR (Jensen & Cardeña, 2009; O’Keeffe & Wiseman, 2005). In the other six studies, the medium interacted with researchers who took on the roles of “proxy sitters.” This outcome corroborates research concluding that mediums tend to obtain better results when interacting with individuals who play the role of sitters (Rock et al., 2021).

The “proxy sitter” protocol, proposed in the 1930s and subsequently employed by the majority of researchers, has twin aims: to prevent fraud through cold reading or a reading of body language, and to reduce the possibility

of telepathy (Beischel, 2007; Kelly, 2010), making the hypothesis of contact with the deceased more likely if AIR is detected. Some authors understand that this method would also have the advantage of being similar to the procedures normally employed by mediums in some cultures, the USA for instance, where the mediums often operate via telephone (Beischel, 2007). However, the proxy sitter protocol is still seen as limiting by many mediums, who believe it is necessary for a deceased's close relative/friend to be present in order to summon the deceased (Freire et al., 2022; Kelly & Arcangel, 2011).

In this article, we chose to analyze studies that were, at minimum, triple-blind, and found that, even with this level of control, it is possible to obtain positive results for AIR if a minimum of ecological validity is provided. Other studies suggest that it is not necessary to employ blinding protocols to control information leakage (Gomide et al., 2021). There are also studies that indicate that there was no significant difference between experiments in which the assistant was blind to the medium, and vice versa, and those in which neither was blinded (Rock et al., 2021).

Although some researchers understand that physical proximity between them is important (Stevenson, 1977), the studies with the best hit rates, of the eight analyzed, were conducted remotely, sometimes hundreds of miles apart, using telephone calls or conference call apps as the means of contact (Beischel & Schwartz, 2007; Beischel et al., 2015; Rock et al., 2014; Tressoldi et al., 2022). On the other hand, in those studies where the sitter was located in a side room, the findings were negative for AIR (Jensen & Cardeña, 2019; O'Keeffe & Wiseman, 2005).

As for the information disclosed, mediums frequently claim that they need a minimum amount of information to establish a mental connection with the right personality in a universe of billions of deceased (Beischel, 2007), a necessity corroborated by William James in his studies with mediums (Murphy & Ballou, 1973). The results obtained from the studies analyzed seem to confirm this understanding. In the study conducted by O'Keeffe and Wiseman, where mediums were not provided with any information about the sitter or the deceased, the hit rate came within the margins expected by chance alone. In the other seven, a minimum of information was supplied, and of these five found results indicative of AIR. Regarding which information to disclose to the medium, in four of the five studies that obtained positive results, the item of data revealed was the name of the deceased, and in one, his photograph.

With regard to which information should be requested from the medium, some studies asked him to freely manifest his observations, while in other studies, in addition to being able to speak freely, the medium had to

answer predefined questions. Beischel argues for the use of questions to help the mediums focus their attention and increase the probability that they will produce specific information. Moreover, in the view of the author, the use of questions makes the evaluation between the target reading and control reading more precise, because both will reveal the same kind of information (Beischel, 2007). Of the five studies that obtained results indicative of AIR, in four the medium received specific questions in addition to the opportunity to speak freely (Beischel & Schwartz, 2007; Beischel et al., 2015; Rock et al., 2014; Tressoldi et al., 2022).

Regarding the selection of the deceased, it was believed that another way to increase the protocol's ecological validity is to allow the medium to choose the deceased with whom he will attempt to make contact, from a selection presented by the researcher. Among mediums, it is commonly understood that the important part of the communication is that of the deceased, who needs to be willing and able to make contact (Beischel, 2007; Kardec, 2010). The results of this comparative evaluation, however, do not enable us to confirm this hypothesis. Of the five studies where results indicative of AIR were found, in four it was to be expected that the medium might produce information for all the sitters referred to him, and just one (Kelly & Arcangel, 2011) permitted the choice from a preselected group.

## Reading Evaluation

Many mediums state that they receive information from deceased personalities in fragmented and often symbolic form (Alvarado, 2010), which could lead to a combination of data purportedly obtained from the mind of the deceased, the mind of the sitter, and the medium's own unconscious (Moreira-Almeida, 2012). As a result, one single mediumistic message may often contain both correct and incorrect items of information, and both generic and specific information. All of this, added to the emotional state of the often-grieving sitter, can render the message evaluation process somewhat challenging.

The component which the sitter received for evaluation varied between studies. In some, they would receive separate items of information, while in others they would receive full readings, or even both. For Kelly and Arcangel (2011), receiving a full letter might simplify the process of evaluation, because the items are often interrelated, and severing this linkage of ideas may lead to a partial loss of meaning. This hypothesis appears to be confirmed; the sitters evaluated full readings in the five studies that obtained positive results for AIR.

A large number of items given to the sitters for



evaluation could provoke fatigue or confusion. In the three studies with no results indicative of AIR, the sitters had to evaluate a large number of items. In one of these (O’Keeffe & Wiseman, 2005), there were more than a thousand dissected items of information, and in another there were seven full readings in addition to dozens of individual items (Jensen & Cardeña, 2009). In the last study, there were six full readings in addition to the individual items (Freire et al., 2022). Meanwhile, of the five studies that obtained results indicative of AIR, in four the sitter had to perform an evaluation of just two full readings and the items of information (Beischel & Schwartz, 2007; Beischel et al., 2015; Rock et al., 2014; Tressoldi et al., 2022) or six full readings, without separating out individual items of information (Kelly & Arcangel, 2011).

### Implications and Applications

The analysis of the above-mentioned methodological aspects is of great value when devising methods to study AIR in mediumship, expanding the possibility of obtaining suitable results, combining ecological validity with a rigorous approach to data leakage. The investigation into AIR in mediumship (whether through ESP or survival of consciousness) has huge implications for the understanding of the human mind and the possibility of its function and/or existence beyond the brain.

### CONCLUSION

The analysis of controlled studies into AIR in mediums shows that there are certain methodological characteristics that appear to be more associated with positive results for AIR. These conditions seem to be:

- selecting mediums with previous, consistent evidence of AIR and who feel comfortable working under the conditions established by the protocol;
- selecting sitters who are strongly motivated for the study and are grieving for a significant person;
- having some interaction with the medium, even as a proxy sitter in a home call;
- supplying the medium with some information about the deceased;
- asking objective questions but also allowing the medium to speak freely;
- providing scores for both the full reading and individual items;
- avoiding a large number of readings and items of information to evaluate.

One possible interpretation of these results is that these protocols provide better equilibrium between control over information leakage and respect for the culture and

idiosyncrasies of the medium, conferring ecological validity to the experiment.

In addition to increasing the ecological validity of quantitative research, several other approaches could be promoted. For example, in-depth qualitative investigation, as proposed by Gomide et al. (2021). The use of different methodological approaches in parallel may be complementary and synergistic in mediumistic research.

For future studies, in addition to opting for the above-mentioned protocols, we recommend consulting mediums in the locality about the minimum conditions that they feel are necessary to execute their mediumship and, based on these conditions, build protocols to control data leakage. In other words, not simply to subject the medium to the method but also, as far as is possible, to adapt the method to the medium (Gomide et al., 2021). Considering that mediumship is a complex human experience influenced by a wide range of factors (cultural, biological, social, psychological, etc.), it is unlikely that, regarding the methodology, “one size fits all.”

This article, the aim of which was to make an initial attempt at identifying trends, had a number of limitations. The first was the small number of studies evaluated, as a result of the limited number of recent, controlled studies. Another limitation that hampered comparison was that some of the studies analyzed failed to make clear a number of important variables, such as the criteria for considering the proficiency of the medium and the motivation of the sitter. Thus, our results should be analyzed with caution, with the heuristic proposition of enhancing future studies. Moreover, other aspects of the studies still have to be investigated, such as the statistical methods adopted.

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### AUTHOR’S CONTRIBUTIONS

The first-named author worked on the conceptualization, methodology, formal analysis, investigation and composition of the original draft. The second-named author worked on the formal analysis, resources, composition (review and editing), supervision, project administration.

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