

INVESTIGATING THE FIT AND ACCURACY OF ALLEGED MEDIUMISTIC WRITING: A CASE STUDY OF CHICO XAVIER'S LETTERS

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Context: The study of mediumship is important because if mediumistic abilities were real, they would provide empirical support for non-reductionist theories of the mind, thus having major implications to our understanding of the mind–brain relationship. This study investigated the alleged mediumship of Chico Xavier, a very prolific and influential “medium” in Brazil.

Objective: To investigate the accuracy of the information conveyed in Xavier’s “psychographed” letters (i.e., letters allegedly authored by a deceased personality) and to explore the possible explanations for it.

Method: After a systematic search for Xavier’s psychographed letters, we selected one set of 13 letters allegedly written by a same spiritual author (J.P.). The letters were initially screened for the identification of items of information that were objectively verifiable. The accuracy of the information

conveyed by these items and the estimated likelihood of the Xavier’s access to the information via ordinary means were rated using Fit and Leak scales based on documents and interviews carried out with the sister and friends of J.P.

Results: We identified 99 items of verifiable information conveyed in these 13 letters; 98% of these items were rated as “Clear and Precise Fit” and no item was rated as “no Fit.” We concluded that ordinary explanations for accuracy of the information (i.e., fraud, chance, information leakage, and cold reading) were only remotely plausible. These results seem to provide empirical support for non-reductionist theories of consciousness.

Key words: Mediumship, mind–brain relationship, bereavement, consciousness, spirituality, survival

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INTRODUCTION

Mediumship is generally defined as an experience in which an individual (the so-called “medium”) purports to be in communication with the deceased. Mediumistic experiences are phenomena reported throughout human history, expressed as oracles, prophets, and shamans, and being part of the Greek, Roman, and Judeo-Christian roots of Western society, as well as of Tibetan Buddhism and Hinduism.^{1,2} In recent years, there has been a heightened public interest on mediumistic

phenomena, as illustrated by the high popularity of television shows, books, and movies exploring the topic.³

The study of mediumship is important because it has significant implications for our understanding of the nature of the mind. In the 19th century, studies on mediumship phenomena were vital to the development of theories on dissociation and the subliminal mind.^{4,5} Crucially, if mediumistic abilities are real, they would provide empirical support for non-reductionist theories of the mind, thus having major implications to our understanding of the mind–brain relationship.²

Scientific investigation of mediumship began in the late 19th century. Many scientists and scholars who participated in these early investigations, such as James,⁶ concluded that orthodox explanations (i.e., fraud, lucky chance hits, and unconscious mind activity) could explain much but not all the empirical evidence obtained, and most of them came to accept the existence of extra-sensorial perception and/or survival of consciousness.^{2,7,8}

Although research on mediumship faded through the 20th century, there has been renewed interest during the last decade. A number of studies investigating whether mediumship provides evidence for anomalous information reception have been recently published in medical and psychological journals with conflicting findings.^{3,9–11} These studies found

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that mediums did not provide similar levels of veridical information compared to each other and even the same medium in different occasions. Therefore, it is necessary to carry out studies with particularly gifted mediums, those who have consistently and reliably provided evidence of anomalous information reception. This approach is in line with James'¹² suggestion that mediumship research should focus on the "good specimen of the class."

CHICO XAVIER

Chico Xavier (1910–2002) was a Brazilian medium who produced a wide range of mediumistic phenomena and is considered one of the most prolific and influential mediums of the 20th century.^{13,14} Xavier was raised in a very poor and illiterate Catholic family in a rural village in Brazil. He received only an elementary education (until fourth grade) and started to work at eight years of age in a local weaving mill. Throughout his life, Xavier produced, allegedly by "psychography" (writing under the influence of a deceased person), more than 450 books covering a wide range of genres and styles: novels, poetry, children's books, short stories, letters, and essays on scientific and philosophical topics. His first published book, a collection of 60 mediumistic poems allegedly authored by 14 best-known Brazilian and Portuguese deceased poets, was published in 1932 and became a literary sensation in Brazil.¹⁵

A number of archived film footages show Xavier at work: He would pick up a pencil, with his right hand on a sheet of paper and his left hand over his eyes, and he would sit in silence for a couple of minutes. Then his hand would slide over the paper at great speed, never going over the edge of the paper. When a page was filled, a person sitting next to him would remove the sheet and put another one in its place. In this way, Xavier would cover about 20 large sheets of paper in few minutes.¹⁵

By 2010, Xavier's books had sold 50 million copies¹⁶ and were translated to more than 10 languages.^{13,17} Yet, despite his enormous popularity and record-breaking sales, Xavier lived a very modest life with the small salary of his civil servant job. He never sought nor received payment for anything he wrote as he donated all his copyrights to charities.^{13,17}

Another important aspect of Xavier's mediumistic work was the production of personal messages allegedly written by deceased personalities to relatives and friends who were left behind. These messages were usually written in weekly public sessions where hundreds of bereaved would attend with the hope of receiving a letter from their deceased loved ones. It is estimated that Xavier produced 10,000 of these personal letters.^{14,18} Often, these letters would contain personal information about the deceased and their family, proper names, surnames and nicknames, and detailed descriptions of their death. There are also reports, requiring further investigation, of letters allegedly written entirely or partially in a foreign language and with signatures similar to those of the deceased when they were alive.^{19,20}

Chico Xavier had a major impact on Brazilian culture. In 1981, he received a nomination for the Nobel Peace Prize,¹⁴

and in 2010, the Brazilian Post Office issued a special stamp to mark the centenary of his birth.²¹ One of his books, *Nosso Lar*, sold more than two million copies and was made into a movie in 2010, which attracted more than four million spectators. Also, in 2010, a biographical movie about Chico Xavier was watched by more than three million people in Brazil.²²

Despite the impact of Xavier's mediumistic work, it has been subject to little research. Rocha¹⁵ analyzed the stylistic, formal, and interpretative aspects of dozens of Xavier's poems allegedly written by renowned Brazilian and Portuguese authors. The analysis suggested that the poems are not a product of simple literary imitation. Furthermore, the production of these poems would have required a sophisticated and scholarly knowledge of these writers. Rocha²³ investigated the mediumistic writings from 12 of Xavier's books attributed to the Brazilian writer Humberto de Campos (1886–1934). Rocha found an intricate and sophisticated intertextuality in these books that could be achieved only by someone with a scholarly knowledge of Campos' work. Recently, Silva²⁴ carried out a semiotic analysis of 10 letters psychographed by Xavier and found a consistent overlap and alternation of the expression of the identities (ethos) of the deceased personalities and the medium in the letters.

Given the limited research on Xavier's mediumistic letters and the importance of his work to the study of the mind–brain relationship, we carried out a study that aimed to investigate the accuracy of the information conveyed in Xavier's psychographed letters and to explore the possible explanations for it.

METHODS

Case Selection

We carried out a systematic search for Xavier's published and unpublished psychographed letters in order to select one set of letters for this study. The selection of the set of letters was based on the following criteria: (1) all letters are allegedly written by the same spiritual author; (2) the letters provide a substantial amount of detailed, verifiable, and specific information; and (3) the relatives to whom the letters were addressed are still alive and would agree to be interviewed by the research team. Based on these criteria, for this study we selected the set of 13 letters allegedly written by the spirit of a deceased young man, Jair Presente (J.P.), who died by drowning on February 3, 1974 at the age of 24.

Material

We analyzed 13 letters, which were written between March 15, 1974 and January 13, 1979. Eight of these letters were published in books.^{25,26} We analyzed the original letters that have been kept by the family of J.P. In addition to these letters, other related material were collected and analyzed: personal documents and writings of J.P., two newspaper articles about his death, and his biography written by his sister.

Participants

The principal participant in this study was S.P., the older and only sibling of J.P. His father died in 2006 and his mother declined participation due to her old age and ill health. Other participants were three close friends of J.P. and one friend of his parents.

Procedure

The 13 letters were screened for the identification of the items of information that were objectively verifiable. After the identification of these items, two members of the research team (A.C.R. and D.P.) carried out interviews with the participants in order to inquire about (a) the accuracy of the information conveyed by these items and (b) all possible ordinary means by which Xavier could have accessed this information. The interviews were semi-structured and based on Stevenson's guidelines²⁷ for research on survival of consciousness. We carried out five interviews with S.P., each lasting two hours on average. The interviews were recorded. After the interviews, the items of the letters were rated independently by three members of the research team (A.C.R., D.P., and E.S.F.) using the Fit and Leak Scales (see below).

Instruments

- *Fit Scale*: This scale, which is an adaptation of the Arizona Mediumship-Process Scoring System (AMPSS),³ was designed for the particular context of this study. It was devised as a three-point scale for the ratings of the accuracy of the information provided by items in the letter. The rating points of the Fit scale are “No fit,” (0); “Fit dependent on interpretation or imprecise fit,” (1); and “Clear and precise fit,” (2).
- *Leak Scale*: The instrument was devised for the ratings of the estimated likelihood of the medium's access to the information via ordinary means (i.e., information “leakage”). The Leak scale has the following five rating points:
 - Very unlikely leak (0)—very specific information that was allegedly unknown by relatives/friends of the deceased person who had contact with the medium, or information that was allegedly a secret held by a friend/relative and never revealed, AND there was minimal contact of relatives/friends with the medium (or their assistants).
 - Rather unlikely leak (1)—information very specific or very private AND the relative/friend is definite that information was never communicated to the medium (nor to their assistants) AND there was minimal contact of relatives/friends with the medium (or their assistants).
 - Unlikely leak (2)—Information very specific or very private AND the relative/friend is definite that the information was never communicated to the medium (nor to their assistants), BUT there was more than minimal contact of relatives/friends with the medium or their assistants.
 - Likely leak (3)—information very general, common, or predictable.

Definite leak (4)—relative/friend confirms that information has been previously communicated to the medium or to their assistants.

Analysis

The final ratings on the Fit and Leak scales were obtained through discussion and consensus between the raters. In addition to the statistical analysis of the ratings on the Fit and Leak scales we also performed a narrative analysis²⁸ of the content of the letters and of the additional material collected for the study (i.e., interviews, personal documents of J.P., newspaper articles, and the biography written by his sister).

Ethics

This research protocol received ethical approval by the University of São Paulo Ethics Committee. S.P. gave written consent for her identity to be disclosed in the study publications.

RESULTS

J.P. and the Circumstances of His Death

J.P. was born on November 10, 1949 in Campinas, Brazil. His father was a tradesman and his mother, a housewife. He had only one sibling, S.P., born in 1947. J.P. was working on his fourth year of mechanical engineering at one of the top universities in Brazil, Unicamp—State University of Campinas, when he died, at the age of 24. He would also work as a school teacher and private tutor.

On Sunday, February 3, 1974, J.P. went on an outing to a reservoir in a place called “Praia Azul” with five young friends. They had spent the previous night together at a fishing farm nearby. At around 11 am, J.P. dove into the water, but did not come up to the surface. His friends called the fire fighters based at the reservoir, and after a few minutes, they found J.P. and retrieved him from the water. The fire fighters tried to resuscitate him by performing cardiopulmonary resuscitation and mouth-to-mouth ventilation, but unsuccessfully. J.P. was pronounced dead at the scene. The friends reported that there was no use of drugs and very little consumption of alcohol during the morning of the fatal accident.

The First Meeting with Xavier

J.P.'s family was devastated. At 30 days after his tragic death, one of the customers of J.P.'s father gave him a book written by Xavier, which he thought would help him to cope with his grief. After reading the book, J.P.'s father decided to go to the city of Uberaba, 400 km away from his city, to try to meet Xavier. At 40 days after J.P.'s death, his family arrived at the spiritist center in Uberaba where Xavier worked.

A few hundred people would attend Xavier's public mediumistic meetings at his spiritist center. The attendance to these meetings was free. Every Friday afternoon, people would gather in a queue for the opportunity to talk for a few minutes with Xavier.¹⁹ Between 2 pm and 6 pm, Xavier would exchange a few words with each of the attendees in the queue. After 6 pm, Xavier would go to a small room at the back of

Table 1. Items of Verifiable Information in the First Letter

Item	Type of Information	LEAK ^a	FIT ^b
Sueli	First name	1	2
My grandpa Basso (<i>deceased</i>)	Surname and kinship	1	2
Elvira (<i>J.P.'s aunt, deceased</i>)	First name	0	2
I see you collecting remembrances in my bedroom as if I was going to arrive at any instant	Event post-death	1	2
An outing	Circumstances of death	1	2
On Sunday	Day of death	1	2
I gave a hard time to my friends	Circumstances of death	1	2
They called me	Circumstances of death	1	2
They hugged me	Circumstances of death	1	2
They massaged me	Circumstances of death	1	2
They made me breathe	Circumstances of death	1	2
There were no drugs, we were sober	Circumstances of death	1	2
There were no excesses in the eve (<i>of his death</i>)	Circumstances of death	1	2
I miss my studies and classes	Previous activities of the deceased	1	2
The everyday kiss	Previous activities of the deceased	1	2
Jair	First name	1	2

^aLEAK: (0) very unlikely leak, (1) rather unlikely leak, (2) unlikely leak, (3) likely leak, and (4) definite leak.

^bFIT: (0) no Fit, (1) Fit dependent on interpretation or imprecise fit, and (2) clear and precise fit.

the spiritist center with two assistants. He would stay there until approximately 12 midnight writing homeopathic prescriptions along with brief spiritual advice, which were then handed to the attendees. These prescriptions and messages were allegedly authored by the spirits of physicians who communicated via Xavier's psychography. After Xavier finished the "psychography" of these medical prescriptions, he would go to the main hall where the attendees would have been waiting, accommodated in chairs or stools. Xavier would sit at a large table in front of the audience and he would produce "psychographed" letters uninterruptedly for about three hours. When Xavier finished the letters, around 3 am, he would read them aloud for the audience. He psychographed an average of six letters per night, each letter allegedly written by a different deceased person.¹⁹

S.P. reported that when she and her parents arrived at Xavier's spiritist center, on a Friday afternoon, they had only a very brief exchange with him. According to her account, after waiting in the queue, the only thing she said to Xavier was that she had lost her brother and that her parents were devastated and would like to receive some news from him or even a letter. S.P. was definite that they did not say any names or give any other information to Xavier. S.P. and her parents then sat in the main hall waiting alongside the rest of the crowd until the early hours of Saturday, when Xavier started the psychography of the letters. On that night, Xavier produced seven letters. According to S.P., after reading out the first letter, Xavier asked the audience: "Who are the relatives of Jair Presente?" Astonished, S.P. and her parents went to the front of the hall and stood up next to the medium while he read out the letter allegedly written by J.P. When Xavier finished the reading, he handed the manuscript to J.P.'s mother.

Analysis of the First Letter

This first letter, containing 569 words, was written on 32 sheets of letter-sized bond paper. The size of the letters was fairly big, making an average of 18 words per sheet. According to S.P., Xavier wrote this letter in a continuous and fast flow, without any pauses. The letter, addressed to S.P. and J.P.'s parents,* contained 16 items of verifiable information (Table 1). Among these items, there were three first names ("Sueli," "Jair," and "Elvira"), one surname ("grandpa Basso"), and one date ("Sunday"—reference to the day of J.P.'s death). Other information conveyed by the letter included a detailed description of the circumstances of J.P.'s death (eight items), one reference to a postmortem family event (one item), and references to past activities of the deceased (two items).

A qualitative analysis of the content of the letter indicates that the author sought mainly to bring consolation and comfort to the family, begging them to keep calm and positive, and to hold their faith in God's unfaltering love. According to S.P., the family was convinced that J.P. was the author of the letter because of the level of accurate and precise information conveyed by it, which had not been communicated to the medium.

The mean score on the Fit scale for this letter was 2 (SD = 0) since all information conveyed in the letter was confirmed by the participants to be correct and accurate. In relation to the Leak scale, the mean score for this letter was 0.94 (SD = 0.24). All but one item (93.8%) were rated as "rather unlikely leak" (1). One item was rated as "very unlikely leak" (0) because it was information unknown to J.P.'s family who were present

* The letter begins with the following greeting: "My father, my mother, my dear Sueli..." [Meu pai, minha mãe, minha querida Sueli].

Table 2. Psychographed Letters Allegedly Authored by J.P.

Number	Date	Published	Addressed to	No. Words	No. Items of Verifiable Information
1	15/03/1974	1975	Mother, father, and sister	569	16
2	30/03/1974	1975	Mother, father, sister, and friend	624	12
3	25/08/1974	1975	Mother, father, sister, and friends	1095	7
4	16/11/1974	1975	Mother, father, sister, and friend	923	7
5	29/03/1975	1975	Mother, father, sister, and friends	807	0
6	19/07/1975	1976	Mother, father, and sister	1017	8
7	01/11/1975	1976	Mother, father, and sister	1174	17
8	14/02/1976	1976	Sister	647	6
9	22/05/1976	No	Mother, father, and sister	437	0
10	13/11/1976	No	Mother, father, and sister	633	9
11	19/03/1977	No	Mother, father, and sister	1207	3
12	14/01/1978	No	Mother, father, and sister	953	11
13	13/01/1979	No	Mother, father, and sister	567	3

at the mediumistic session. This item was a reference to a deceased personality named “Elvira” allegedly present at the side of J.P. while Xavier was writing the letter. J.P.’s mother had an aunt and godmother named “Elvira,” which is an uncommon name in Brazil,[†] but at the time of the session, she did not know that Elvira had died three years earlier. In a subsequent letter, the alleged author confirms that Elvira was indeed the aunt and godmother of his mother.

The Subsequent Letters

Convinced that Xavier’s mediumship was authentic and that J.P. was the author of this first letter, the family returned many times to Uberaba to attend other psychography sessions of Xavier at the Spiritist Christian Communion. Between the years 1974 and 1979, Xavier psychographed 12 more letters allegedly authored by the spirit of J.P. (Table 2). The author described his condition and his activities in the spiritual world, his plans for the future, and the difficulties involved in the mediumship communication. This set of 12 letters was characterized by the intensive use of slang, humor, pun, and colloquial expressions. We found this similar type of language in J.P.’s personal writings, and S.P. confirmed that some of the colloquial expressions used in the letters were typical of J.P.’s vocabulary. According to S.P., these letters brought about a significant change in the family, as they helped them to cope more positively with their grief and loss.

These 12 letters conveyed a total of 83 items of verifiable information (Table 3). Of these items, 13 (15.7%) conveyed information that was confirmed by the participants to be previously known to the medium and thus rated “4” on the Leak scale. We were not able to determine the Leak score for 15 items (18.1%) because they bore information about individuals and facts that were not related to J.P. and the family. Since we interviewed only relatives and friends of J.P., we were unable to

[†] To get an approximate idea about the frequency of some names that appear in the letters, we consulted record books of births (1971–1976) and deaths (1955–1979) in a registry office in the city of Campinas. From about 3200 names consulted, there was no person named Elvira.

assess the likelihood of information leak in relation to these items. A total of 45 items (54.2%) were rated as “unlikely leak” because although the participants were convinced that none of this information had been communicated to Xavier, more than minimal contact had developed between J.P.’s family and Xavier after he psychographed his first letter. However, eight items (9.6%) were rated as “very unlikely leak” because the information conveyed on these items was quite specific and unknown to J.P.’s family. These items correspond to cases of “drop-in” communication²⁹ and they will be discussed below. The overall mean score for these 12 letters on the Leak scale was 2.18 (SD = 1.1).

Analysis of the Fit of the 13 Letters

There were a total of 99 items of verifiable information conveyed by the 13 letters. Of these items, 13 (15.7%) were *definitely* confirmed by participants to have been communicated to Xavier via ordinary means, and 15 (18.1%) had undetermined Leak scores (as explained above). Therefore, we excluded these 28 items from the posterior analysis. The mean score on the Fit scale for the 71 remaining items was 1.97 (SD = 0.17). There was no item rated as “No Fit.” Overall, 69 items (97.2% of these items) were rated as “Clear and Precise Fit” and two items (2.8%) were rated as “Fit dependent on Interpretation/imprecise” (Table 4). These two items were cases of “drop-in” communication (see below) whose identity could not be definitely confirmed.

Most of the information conveyed by these 71 items was proper names (42%), which have Leak scores < 3. Of the 24 names of people cited in these items, three names were composed by first name and surname (Fig. 1). All names were spelled correctly. A total of 14 items (19.7%) were descriptions of specific events with all but one being postmortem events. One example of a postmortem event was the reference to the death of “Suzeley” in a swimming pool.[‡] Overall, 12 items (16.9%) were descriptions of feelings/thoughts of family and

[‡] Suzeley was an acquaintance of S.P. “Suzeley” is also a very uncommon name in Brazil.

Table 3. Frequency, Percentage, and Mean Scores on the LEAK Scale

Letter	No. Items	Very Unlikely Leak	Rather Unlikely Leak	Unlikely Leak	Likely Leak	Definite Leak	Not Determined	Mean (SD)
1st Letter	16	1 (6.3%)	15 (93.8%)	0	0	0	0	0.94 (0.2)
Letters 2–13	83	8 (9.6%)	0	45 (54.2%)	2 (2.4%)	13 (15.7%)	15 (18.1%)	2.18 (1.1)

friends and 10 items (14.1%) were descriptions of the circumstances of J.P.'s death (Table 5).

Drop-In Communications

In these 13 letters, we found three cases of “drop-in” communications, that is, situations where allegedly a deceased personality communicates via the medium without the request of relatives or friends. In the case of J.P.'s letters, the author communicated that some deceased personalities were asking him to deliver messages of comfort and solace to their parents and relatives, although these were not present at the mediumistic sessions when the letters were psychographed. These three cases vary in the degree of specificity of the information transmitted and the extent to which the information was verifiable (Table 6). For example, in one of the cases, the letter conveyed the date of death (day, month, and year), name and double surname of the deceased (Irineu Leite da Silva), and first names of their parents. This information was later verified by S.P., who found a small death notice for Irineu published in a local paper of her city, 400 km away from Xavier's town, where the public library did not receive the papers.

DISCUSSION

The information conveyed by the 13 letters allegedly authored by the deceased personality of J.P. showed a high level of accuracy and fit. Excluding from the analysis the 13 items of information that have been *definitely* confirmed by participants to have been communicated to Xavier ordinary means, and the 15 items with an undetermined Leak score, we found that 97.2% of the remaining items demonstrated a clear and precise fit. Moreover, we found no item with a “wrong” fit. The only two items that were not considered to have clear fit were first names of deceased personalities unrelated to any of the persons attending the mediumistic sessions and whose identities could not be confirmed without doubt.

Not only was the information conveyed by this series of letters highly accurate, but it was also very specific. As shown in Table 5, the majority of information expressed in these letters consisted of proper names and surnames, kinship, objective description of events, and precise dates. This information was so precise and specific that they could not possibly be obtained by simple inference from previously confirmed items. Only 19.7% of the information revealed some type of subjective experience, such as feelings, thoughts, and personal interests. Kelly and Arcangel¹⁰ pointed out that an ordinary explanation for the apparent fit of a medium's statements is that they are so general or vague that “they can apply to many people or be interpreted in a variety of ways.” Since the information conveyed by Xavier's letters was very specific, it refutes the hypothesis that the fit of the information was the result of chance alone or over-interpretation on the part of the participants biased by grief or wishful thinking.

A weakness of this study is that the assessment of the likelihood of information leakage was based on participants' accounts of what happened in the mediumistic sessions and their recollection of what information they had communicated to the medium. Since these mediumistic sessions occurred more than 30 years ago, the participants' recollections of the extent of their communication with the medium might have been inaccurate or distorted. Research on memory indicates that a person's recollection of an event can be altered by post-event information or by group influence, leading to long-lasting errors and even to the creation of completely false memories.^{30,31} Thus, we cannot rule out the hypothesis that the participants' wishes that these letters were genuinely authored by their beloved J.P. might have misled them to distort their memories of what they have actually communicated to the medium before he psychographed the letters. However, in relation to the first letter psychographed by Xavier, even if the participants' recollection of the information communicated to the

Table 4. Frequency, Percentage, and Mean Scores on the FIT Scale^a

Type of Information	No. Items	Clear and Precise Fit	Fit Dependent on Interpretation	No Fit	Mean Fit (SD)
Related to J.P. or his family/friends	64	64 (100%)	0	0	2.00 (0)
Related to individuals not attending the meeting ^b	7	5 (71.4%)	2 (28.6%)	0	1.71 (0.5)
Total	71	69 (97.2%)	2 (2.8%)	0	1.97 (0.2)

^aIn relation to items with LEAK score < 4.

^bi.e., “drop-in” communication.

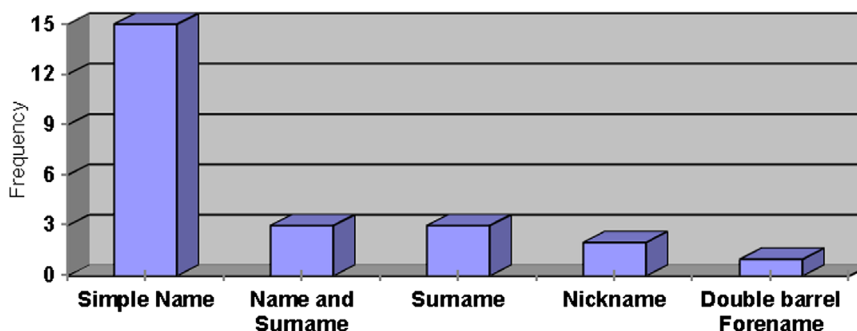


Figure 1. Person's names with LEAK scores < 3.

medium was inaccurate or unreliable, it seems implausible that they would have had the time and opportunity to communicate such a significant amount of specific information, including the surname of J.P.'s grandfather ("grandpa Basso"), as well as the date and the detailed circumstances of his death. Xavier's mediumistic sessions were attended by a few hundred people and he would have only very brief contact with the attendees who would be waiting in a long queue for the opportunity to exchange just a few words with him.

Moreover, the rating points of the Leak scale were designed to compensate for this unreliability of the participant's recollection. The scale is asymmetrical so that the lowest point in the scale corresponds to "very unlikely leak" instead of "definitely no leak." Also, when participants have had more than a minimal contact with the medium (in this study that was the case after the first letter), the corresponding rating point in the Leak scale is "unlikely leak" even if the participant is adamant that no information was communicated to the medium. Therefore, the Leak scale is a very "conservative" measure that takes into account the potential bias involved on the participant's recollection of their contact with the medium. However, despite the asymmetry and conservative bias of the Leak scale, when we analyzed the 12 letters produced by Xavier after his first encounter with the family (i.e., letters two to 13), we found that 45 items of information were *unlikely* to have been obtained by ordinary means and eight items were *very unlikely* to have been obtained by information leakage. These eight items correspond to the cases of "drop-in" communications, since the information conveyed by them was unknown to everyone attending the mediumistic session.

Ordinary explanations for "mediumistic" communications are fraud and cryptomnesia (i.e., latent subconscious memory).⁸ Xavier could have read articles in the two local newspapers of Campinas that reported J.P.'s death and either consciously (fraud) or unconsciously (cryptomnesia) communicated this information in the letters. However, these local papers did not publish any photographs of J.P.'s family, so Xavier would have not been able to identify J.P.'s parents and sister presented at the spiritist center as being his relatives. Moreover, the possibility that Xavier would have had access to a local paper from Campinas, a city 400 km away from where he lived (Uberaba), seemed to be rather remote. In addition, the letter contains several pieces of information that were not reported by the newspapers, for instance, the name

of J.P.'s grandfather (grandpa Basso) and the fact that he was deceased. Alternative sources for information leakage could be other family members or friends of J.P. However, we established that J.P.'s relatives had no family or friends in Uberaba and that they traveled there exclusively to attend Xavier's psychography sessions.

In relation to the drop-in communications, as discussed above, it seems very unlikely that Xavier would have had access to the Campinas local newspaper where Irineu's death notice was published. Moreover, we could not confirm whether there were any death notices published for the cases of Aníbal and Joãozinho Alves. However, the case of Aníbal could be explained as a lucky chance hit since he was not identified by a surname. Yet, the first name "Aníbal" is uncommon in Brazil[§] and the likelihood that any Aníbal would have committed suicide around the time the letter was written would seem rather small.

Another common orthodox explanation for mediumship phenomena is that the medium gains information about their clients through the process of "cold reading." This is a set of techniques in which the medium fishes for information, whether deliberately or inadvertently, by taking visual and auditory feedback or clues from his or her client's responses or appearance in order to fabricate "accurate" information.³² However, the process of cold reading could not have been applied to the psychography of Xavier's letters since they were written in a trance state, in an uninterrupted flow, and without any interaction with the receivers of the letter.

We considered that the strength of this study lies with the large amount of information conveyed by the letters. The fact that among 99 items of specific information there was not a single one wrong seems remarkable. Chance alone could have explained the fit of a few isolated cases of information, but it does not seem plausible that the accuracy of such a large set of data could be explained by merely lucky chance hits. However, a limitation of this study is that it analyzed only a very small portion of Xavier's psychographed letters. We do not know to what extent these 13 letters are a representative sample of the thousands of letters produced by him or whether they are just exceptional exemplars.

[§] According to our research at the registry office of Campinas, referred to in the preceding footnote, among 3200 queried names, we found two people with the name Aníbal, both born over 110 years ago.

Table 5. Types of Verifiable Information^a

Type of Information	Example	Frequency (%)
Name	"Irineu Leite da Silva"	16 (22.5%)
Specific event	"Suzeley [<i>died</i>]... in a swimming pool"	14 (19.7%)
Feelings/thoughts	"I ask you [<i>S.P.</i>] do not feel so down"	12 (16.9%)
Circumstances of death	"...heard some folk screaming"	10 (14.1%)
Name and kinship	"cousin Jair"	8 (11.3%)
Name of place/location	"Praia Azul" (<i>location of J.P.'s death</i>)	4 (5.6%)
Reference to specific interests	"I no longer want to think about trips to the moon"	2 (2.8%)
Name of institution	"Grameiro" (<i>Spiritist Center in Campinas</i>)	2 (2.8%)
Date	"He [<i>Irineu</i>] died on June 7th last year"	2 (2.8%)
Reference to specific vocabulary	"Oh, Jair, no one can fix him!" (typical utterance of J.P.'s friends)	1 (1.4%)

^aConveyed by the 71 items with LEAK score < 4.

Xavier psychographed these letters through very long hours of strenuous work and without any financial gain. Although it is not possible to estimate the amount of verifiable information conveyed by these thousands of letters, it would seem very unlikely that Xavier would have employed fraudulent schemes (such as secretly eavesdropping conversation) to obtain this information, as the production of these letters by fraudulent means would have required a very sophisticated, complex, and expensive structure that seems unreasonable given the context and circumstances of Xavier's work. He was a very poor man who never profited from his psychographed work and always presented himself with extreme humility and simplicity.^{13,14} J.P.'s family did not profit from the publication of these letters either, since the copyrights were donated to charity. Therefore, it would seem unreasonable that J.P.'s family would fabricate such a fraud as they would not have any objective gain from it.

If we can possibly rule out chance, fraud, information leakage, and cold reading as plausible explanations for the accuracy of the information conveyed by Xavier's letters, we would have to consider the non-conventional hypothesis of extra-sensory or "anomalous" information reception, including

the possibility of survival of consciousness.^{2,33} Contemporary scientific thought often embraces the materialistic view that mind or consciousness is solely an epiphenomenon of brain processes. However, a number of contemporary philosophers of the mind have suggested³⁴⁻³⁶ that reductionist materialistic approaches to consciousness are inadequate to fully *explain* the correlation between brain processes and mind states or why brain processes should give rise to conscious experience at all. In addition, accumulated evidence on other human experiences, such as near-death experiences,³⁷ also seems to suggest that there is an aspect of consciousness that transcends the brain.

CONCLUSION

The results of our investigation suggest that Xavier's letters conveyed accurate and precise information and that normal explanations for it (i.e., fraud, chance, information leakage, and cold reading) are just remotely plausible. This study seems to yield empirical support for non-reductionist theories of the mind. Certainly, more research on mediumistic phenomenon is called for, and we recommend that further research on other psychographed letters by Xavier be carried

Table 6. Drop-in Communications

Name of the Deceased Personality	Information Conveyed	Means by Which Information Was Verified
Irineu Leite da Silva	First name and double surname Date of death (day, month, and year) Cemetery where he was buried First names of mother and father	S.P. found a small death notice published 41 days earlier in a local paper of Campinas (a city 400 km away).
Joãozinho Alves	First name and surname	A journalist published a small notice in a local paper of Campinas asking for information about "Joãozinho Alves," and his parents contacted J.P.'s family.
Aníbal	First name Committed suicide	A journalist published a small notice in a local paper of Campinas asking for information about an "Aníbal" who had recently committed suicide. On the next day, a woman contacted J.P.'s family and said that her only child, named Aníbal, had committed suicide less than a year ago.

out in order to expand the scope of this investigation. Other controlled studies on mediums as exceptionally gifted as Xavier are also imperative. As Chalmers³⁴ pointed out:

“The possibility of explaining consciousness non-reductively remains open. This would be a very different sort of explanation, requiring some radical changes in the way we think about the structure of the world. But if we make these changes, the beginnings of a theory of consciousness may become visible in the distance.”

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