

REPORT

Physiological and Geomagnetic Correlates of Apparent Anomalous Phenomena Observed in the Presence of a Brazilian "Sensitive"

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Abstract — An interdisciplinary team of researchers met with a Brazilian "sensitive" 20 times during eight days to observe and record the unusual phenomena that have occurred in his presence for several years. These phenomena were rated on a 5-point scale by three members of the research team, and those obtaining a mean rating of 2.1 or higher were termed "apparent anomalous phenomena." Readings were taken of his pulse, blood pressure, and saliva pH, as well as of geomagnetic fluctuations in the Brasilia area where the sessions took place. When the mean ratings per event were correlated with the physiological and geomagnetic readings, 2 of the 10 correlations attained statistical significance, suggesting that the "apparent anomalous phenomena" preceded an elevation in diastolic blood pressure and elevated geomagnetic activity. When the daily ratio per hour of "apparent anomalous events" was paired with the daily geomagnetic index for the Southern Hemisphere, a significant correlation was obtained ($r=0.93$, $p=0.02$). Further research is recommended utilizing a more systematic means of data collection and more rigorous observations and controls.

Introduction

Although parapsychology has emphasized experimental research studies in recent decades, the literature contains several examples of controlled observations of anomalous phenomena. Research participants for these studies have ranged from "mediums" to "psychic sensitives" to laypeople. The observed effects included the purportedly anomalous production of raps, voices, and other sounds; movement of furniture or small objects on a table or other surface, alteration of photographic film; and appearance and disappearance of objects, i.e., "apports" (Richards, 1982; Schmeidler, 1977, 1990). Interpretations of the reported data include experimenter fraud, research participant fraud, poorly controlled research conditions, misperceptions of sensory cues,

and psychokinesis — effects of mental activity on distant physical objects (Schmeidler, 1977, 1990). Psychokinesis is considered an example of “*psi*” phenomena (i.e., interactions between organisms and their environment, including other organisms, that appear to circumvent mainstream science's understanding of space, time, and force). These phenomena are often termed “anomalous” because the purported effects can not be explained by conventional science's models of force (i.e., energy and activity).

Because of the large number of reports of spontaneous PK in cultures other than the United States, Canada, and Western Europe, Giesler (1984) has called for a “multimethod” approach that would (1) focus more attention on the psi-relevant contexts in other cultures; (2) combine ethnographic and experimental methodologies so that the strengths of one offset the weaknesses of the other; (3) incorporate a “*psi-in-process*” method into the field research design. “With this approach, the researcher may study ostensible psi processes and their relationship with other variables in the contexts of cult rituals and practices such as divination, trance mediumship, and healing” (p. 315). This would allow for control of the conditions of a task, and the results could be evaluated with a minimum of interference or disturbance of the psi-related activity. Giesler concludes:

By supplementing the *psi-in-process* data with relevant ethnographic information, and by deriving therefrom a measure of the reliability of the *psi-in-process* approach to apply to each particular case of the context evaluated, a more complete and more holistic portrayal of *psi* and the psychocultural conditions under which it occurs may be advanced. (p. 315)

When given the opportunity to work with purportedly remarkable research participants in *any* culture, parapsychologists have been ambivalent. Many of these individuals have been dubbed “PK stars,” i.e., research participants who are said to manifest dramatic psychokinetic phenomena. The possibility of trickery is omnipresent, and these “stars,” especially those attaining notoriety in North America and Europe, have earned a reputation for being “difficult,” refusing to perform under controlled conditions or with magicians present, invoking demands that parapsychologists consider unwarranted, and making outrageous claims about the “scientific verification” of their abilities once the research has been concluded. Rush (1977) concluded that the PK demonstrations by “star performers,” even granting their validity, “have not advanced scientific understanding of the phenomena very much” (p.48).

With these caveats in mind, we initiated a research program with Amyr Amiden (AA), a Brazilian “sensitive,” in March, 1994. One of us (SK) had met AA in February, 1993 while visiting the City of Peace Foundation in Brasilia, accompanied by several members of the Institute of Noetic Sciences. After spending several hours with AA, members of the group witnessed several possible anomalous phenomena including polished stones that seemed to

fall nearby, the appearance of jewelry with no easily identifiable source, and the appearance of a blood-like substance on AA's forehead, palms, and the back of his hands.

AA, a man in his 50s at the time of our investigation, is a workers' union secretary who lives in Brasilia. Of Syrian descent, AA was raised in the Muslim faith but now claims to find inspiration in all religions. He is divorced and is the father of a teenage son. AA told us that his maternal grandfather was surrounded by unusual events and exerted considerable control over many of them. AA claimed that "green people" visited him when he was a child and that he was "transported" to their planet.

The setting for the research was the International Holistic University in Brasilia. Its director, Pierre Weil (PW), is a transpersonal psychologist who taught at the University of Minas Gerais until his retirement. He was joined by Stanley Krippner (SK, an American psychologist and parapsychologist), Michael Winkler (MW, an American graduate student in psychology), Amyr **Amiden** (AA, the research participant), Roberto Crema (RC, a Brazilian psychologist and anthropologist), Ruth Kelson (RK, a Brazilian physician), and Harbans Lal Arora (HL, a Brazilian physicist). The International Holistic University (a branch of the City of Peace Foundation) and **Saybrook** Institute (a graduate school in San Francisco, California) were the two institutional collaborators in the project. One of us (PW) had met AA in 1991, but the anomalous phenomena surrounding him had been known in the local community for nearly a decade. Four of us (RC, RK, SK, HL) had met AA in 1993, and one of us (MW) met him for the first time in 1994 at the time of our investigation. Four staff members of the university were present at some of our sessions — Lindalva Barrios (an instructor), Sonia Sanchez (an instructor), **Laforce** Fontes (a computer specialist), and Raimundo Arias (the foundation chauffeur).

Research Question and Methodology

A research protocol was designed by SK and MW, and was approved by the **Saybrook** Institute Review Board that monitors the protection of human subjects. The research question, as stated, was, "Are there geomagnetic **and/or** physiological correlates of the anomalous phenomena that occur in the presence of Amyr **Amiden**?"

We decided to make this a collaborative research investigation, including AA in the planning and execution of the study as a co-researcher rather than as a "subject." We operated from a research paradigm that avoids treating human beings as "objects" of inquiry, preferring the "cooperative inquiry group" described by Reason (1988) in which "people work together as co-researchers in exploring and changing their world" (p.18). Several parapsychological research projects have been initiated in this manner, followed by controlled observations **and/or** experimental studies once the parameters of the phenomenon in question were better understood. An example would be the dream-ESP

studies at Maimonides Medical Center in Brooklyn, which were preceded by a series of collaborative research investigations, most notably with the celebrated medium Eileen Garrett (Ullman & Krippner, with Vaughan, 1989, pp. 66-69). AA refused any remuneration for his collaboration. No family member or close friend was present for any of the research sessions.

One avenue of the search for reliable correlates of anomalous phenomena has centered around geomagnetic activity (e.g., Radin, McAlpine, & Cunningham, 1994). Reports of ostensible PK have been linked with solar flares and electrical storms, as measured by magnetometers (e.g., Persinger & Cameron, 1986); although associations have been found between ESP and subdued geomagnetic activity, PK performance has been linked with heightened geomagnetic readings. If a reliable association were found between ostensible PK and measured geomagnetic activity, such data would be difficult to explain by conventional means. Another approach to reliable correlates of ostensible PK has been physiological data as monitored by standard medical and laboratory equipment (e.g., Braud & Schlitz, 1988); physiological activation has been coupled with PK while quiescence has been associated with elevated ESP scores. Again, if a reliable association were found between ostensible PK and measures of involuntary bodily processes, the data would be difficult to explain by means of the fraud hypothesis.

To measure geomagnetic activity, a magnetometer, on loan from the University of Brasilia, was placed in an outdoor shed where it was used to monitor local geomagnetic activity. Every two minutes during a session with AA, a reading was observed and the flux in milligauss were recorded by MW.

The settings for our work varied, but most of them were held in PW's office where we sat in comfortable chairs around a table. On no occasion did AA enter the room before the rest of the group. Several sessions were held in the Meditation House; SK investigated this site each morning to be sure it contained no unusual objects which could later be labeled "materializations." When the restaurant was the setting, AA entered and left with other group members. Whenever there was a lull in the conversation, RK took readings of AA's saliva pH with acid sensitive litmus paper (immediately matched to a standardized scale of acidity), as well as pulse (from the radial artery of AA's wrist), and blood pressure using a cuff, bulb, and sphygmomanometer (applied to the brachial artery of AA's right wrist). She also attempted to take these readings when AA felt that an unusual event was about to occur. One member of our group (usually SK) had AA under close observation at all times, watching for unusual or rapid body movements. AA was seated at a table during each session with the exception of strolls to the Meditation House and the restaurant.

Periodically, following the research sessions, three members of the team (SK, MW, PW) rated each unusual event on a 5-point "Anomaly Observation Scale" constructed by SK and MW:

- 1) no apparent anomaly,

- 2) slight degree of apparent anomaly,
- 3) moderate degree of apparent anomaly,
- 4) high degree of apparent anomaly,
- 5) extraordinary degree of apparent anomaly.

The mean of each set of ratings was used for comparative purposes. At times, one or two of these three team members were not present when the possible anomaly occurred; in these instances, the mean reflected two ratings instead of three, and in rare instances a single rating was used as the score. The research design stated that an event would have to have a mean rating of 2.1 or higher to be considered an "apparent anomaly." Even though we realized that the ratings only utilized integers, we used 2.1 in anticipation of variance among the judges. Over a time span of 8 days, a total of 20 sessions was held with AA (Table 1), and 91 of the 97 events were rated "apparent anomalies" (Table 2). The number of "apparent anomalies" per hour was computed for each of the 8 days for comparative purposes (Table 3). However, labeling an event an "apparent anomaly" does not involve an explanation; it only indicates that an explanation was not immediately forthcoming and needs to be found. Such an explanation could involve ordinary mechanisms, but it could also cast

TABLE 1

Date	Time	Place of research session	Participants
3/10/94	6:45pm - 7:44pm	PW's office at Foundation	AA, SK, MW, PW, LB, SS
3/10/94	7:45pm - 7:54pm	hallway near PW's office	AA, PW, LB, SS
3/10/94	7:55pm - 8:11pm	on road to Fdn. restaurant	AA, SK, MW, PW, LB, SS
3/10/94	8:12pm - 8:54pm	Foundation restaurant	AA, SK, MW, PW, LB, SS
3/10/94	8:55pm - 9:30pm	road outside of Foundation	AA, SK, MW, PW, LB, SS
3/11/94	4:55pm - 5:40pm	Meditation House	AA, SK, PW
3/13/94	8:45pm - 9:30pm	Brasilia Int'l Airport	AA, HL, PW, LB
3/14/94	2:55pm - 7:50pm	PW's office at Foundation	AA, RC, RK, SK, HL, MW, PW, LB
3/14/94	7:55pm - 9:00pm	Foundation restaurant	AA, HL, PW, LB
3/14/94	9:10pm - 9:30pm	Foundation classroom	AA, SK, HL, PW, LB
3/15/94	2:40pm - 8:24pm	PW's office at Foundation	AA, RC, RK, SK,HL , MW, PW, LB
3/15/94	8:25pm - 8:36pm	on road to Fdn. restaurant	AA, RK, SK, HL, PW, RA
3/15/94	8:37pm - 9:19pm	Foundation restaurant	AA, RK, SK, HL, PW
3/15/94	9:20pm - 9:35pm	outside Fdn. restaurant	AA, RK, SK, HL, PW
3/15/94	9:36pm - 10:30pm	PW's office at Foundation	AA, RC, RK, SK, HL, MW, PW
3/16/94	2:50pm - 6:30pm	PW's office at Foundation	AA, RC, RK, SK, HL, MW, PW
3/17/94	2:40pm - 4:30pm	PW's office at Foundation	AA, RC, RK, SK, HL,MW , PW
3/17/94	4:40pm - 5:25pm	Meditation House	AA, RC, RK, SK, PW, LF
3/17/94	5:35pm - 7:20pm	PW's office at Foundation	AA, RC, RK, SK, HL, PW, LB
3/20/94	5:32pm - 6:10pm	Brasilia Int'l Airport	AA, SK, MW, PW

Table 1 presents the date, time, place, and participants involved in the research sessions with AA. The sessions held on 3/10/94 totaled 2 hours and 41 minutes; on 3/11/94, 45 minutes; on 3/13/94, 45 minutes; on 3/14/94, 2 hours and 20 minutes; on 3/15/94, 7 hours and 45 minutes; on 3/16/94, 3 hours and 40 minutes; on 3/17/94, 4 hours and 20 minutes; on 3/20/94, 38 minutes.

doubt upon the explanatory value of optical effects, misperceptions, measurement artifacts, sleight-of-hand, and coincidence.

TABLE 2

Unusual Phenomena Observed at Each Session With Means and Individual Ratings	
1)	3110194, in PW's office (2 apparently anomalous events). <ol style="list-style-type: none"> 7:20pm: oil-like liquid formation appears in a formerly empty chalice, emitting a perfume-like odor (Mean rating: 4.00; N = 3; SK: 4, PW: 5, MW: 3). 7:42pm: a film of liquid appears on a formerly dry crystal (3.67; N = 3; SK: 3, PW: 5, MW: 3).
2)	3110194, in the hallway near PW's office (2 apparently anomalous events). <ol style="list-style-type: none"> 7:50pm: a stone is found on the office floor. (5.00; N = 2; SK: 5, PW: 5). 7:52pm: a stone is found on the carpeted floor in the hallway. (5.00; N = 2; SK: 5, PW: 5).
3)	3110194, on the road to the restaurant (3 apparently anomalous events). <ol style="list-style-type: none"> 7:55pm: a metal brooch with a white stone in its center is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 8:00pm: a metal ring is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 8:09pm: a small polished stone is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4).
4)	3110194, at the restaurant (4 apparently anomalous events). <ol style="list-style-type: none"> 8:15pm: a stone falls, then bounces across the floor (5.00; N = 3; SK: 5, PW: 5, MW: 5). 8:30pm: a used napkin on the table is inspected and is found to contain 32 folded sections, each containing a swirl (3.00; N = 3; SK: 3, PW: 4, MW: 2). 8:43pm: a religious medallion drops on the floor (4.67; N = 3; SK: 5, PW: 5, MW: 4). 8:52pm: AA opens his hand disclosing another religious medallion (4.67; N = 3; SK: 5, PW: 5, MW: 4).
5)	3110194, on the road from the restaurant and at PW's office (10 apparently anomalous events). <ol style="list-style-type: none"> 8:58pm: a bell-shaped medallion with a black stone in its center is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 9:00pm: a violet amethyst is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 9:02pm: a small pink stone is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 9:10pm: an amber-like stone is found on the road (4.67; N = 3; SK: 5, PW: 5, MW: 4). 9:11pm: a small crystal sphere is found on the road (3.67; N = 3; SK: 4, PW: 5, MW: 2). 9:12pm: a small stone is found on the road (3.67; N = 3; SK: 4, PW: 5, MW: 2). 9:14pm: a green stone is found on the road (3.67; N = 3; SK: 4, PW: 5, MW: 2). 9:20pm: a spill of oil-like liquid appears on the road that has a similar perfume-like odor to that earlier appearing in the chalice (3.67; N = 3; SK: 4, PW: 5, MW: 2). 9:26pm: clouds in the sky disappear following AA's attempts to dissipate them through concentration (2.67; N = 3; SK: 3, PW: 4, MW: 1). 9:38pm: upon entering PW's office, a lit candle emits an odor similar to that earlier appearing in the chalice and on the road (3.33; N = 3; SK: 3, PW: 5, MW: 2).
6)	3/11/94, inside and around the Meditation House (3 apparently anomalous events). <ol style="list-style-type: none"> 5:05pm: AA states that he has two personalities, a "younger Amyr" and an "older Amyr" (1.67; N = 2; SK: 1, PW: 2). 5:19pm: a small white and blue stone is found outside of the Meditation House (5.00; N = 2; SK: 5, PW: 5). 5:24pm: a 1975 Spanish 5 peseta coin picturing Juan Carlos I and a 1979 Italian 200 lira coin picturing the profile of a female representing the Italian Republic are found outside of the Meditation House (5.00; N = 2; SK: 5, PW: 5). 5:37pm: a smokey triangular-shaped crystal drops outside of the Meditation House (5.00; N = 2; SK: 5, PW: 5).
7)	3/13/94, 8:45pm at the Brasilia International Airport reception area (9 apparently anomalous events). <ol style="list-style-type: none"> about 9:00pm: three small stones drop to the floor of the reception area (5.00; N = 1; PW: 5).

- b) about 9:10pm: a rose-like odor emanates from the rainwater on the sidewalk (5.00; N = 1; PW: 5).
- c) about 9:12pm: a tear-shaped white stone is found on the sidewalk (5.00; N = 1; PW: 5).
- d) about 9:14pm: a metal brooch, apparently the setting for the stone, is found on the sidewalk (5.00; N = 1; PW: 5).
- e) about 9:16pm: a telephone token (which HL can not use) is found on the sidewalk (5.00; N = 1; PW: 5).
- f) about 9:18pm: a telephone token (which HL can use) is found on the sidewalk (5.00; N = 1; PW: 5).
- g) about 9:20pm: a strange sound emanates from a telephone booth just as HL is about to telephone his wife — who replied that she was just about to attempt a call to him (4.00; N = 1; PW: 4).
- h) about 9:22pm: a crumpled Brazilian 100 cruzeiro note is found on the floor, the final serial number of which matches the number (i.e., "8") predicted by AA and identified moments before by LB as her "favorite number" (5.00; N = 1; PW: 5).
- i) about 9:24pm: as predicted by AA, the only 100 cruzeiro note in PW's possession is found to have similar final serial numbers (i.e., A1135091128A) as the bill that appeared to have dropped to the floor (i.e., A0875097782A) (3.00; N = 1; PW: 3).
- 8) 3/14/94, at and around PW's office (11 apparently anomalous events).
- a) 2:55pm: a sweet perfume-like substance permeates the room, emanating from the oil-like liquid in the chalice (2.67; N = 3; SK: 2, PW: 5, MW: 1).
- b) 3:11pm: red, blood-like liquid is seen on the front and back of AA's left hand (2.33; N = 3; SK: 1, PW: 5, MW: 1).
- c) 3:12pm: red, blood-like liquid is seen on the front and back of AA's right hand (2.33; N = 3; SK: 1, PW: 5, MW: 1).
- d) 5:02pm: a small wad of green paper held between the thumb and forefinger of AA's right hand is matched in size and color by a stone that appears between the thumb and forefinger of his left hand (3.67; N = 3; SK: 5, PW: 5, MW: 1).
- e) 5:10pm: the small wad of green paper and the small green stone suddenly switch positions, the stone now appearing between the thumb and forefinger of AA's right hand (3.67; N = 3; SK: 5, PW: 5, MW: 1).
- f) 5:38pm: AA states that he has the ability to observe the "aura" around the solar plexus of each member of the group and proceeds to describe the color of each person's "aura" (1.67; N = 3; SK: 1, PW: 3, MW: 1).
- g) 6:21pm: a small wad of aluminum foil suddenly changes in shape and form into a diamond-like cone (3.33; N = 3; SK: 4, PW: 5, MW: 1).
- h) 6:50pm: a small polished stone suddenly appears on a piece of green note paper (4.67; N = 3; SK: 5, PW: 5, MW: 4).
- i) 6:53pm: a medallion is found on the floor (4.67; N = 3; SK: 4, PW: 5, MW: 4).
- j) 7:01pm: a heart-shaped spray of an oil-like liquid with a perfume-like odor is observed on the wall of the hallway (4.67; N = 3; SK: 5, PW: 5, MW: 4).
- k) 7:48pm: a spray of an oil-like liquid with a perfume-like odor is observed on HL's bedroom wall near PW's office (2.33; N = 3; SK: 2, PW: 4, MW: 1).
- l) 7:49pm: HL displays a small metal plaque that he found on his bedroom floor (2.33; N = 3; SK: 2; PW: 4, MW: 1).
- m) 7:50pm: 12 dark markings are observed by HL on the door of PW's bedroom (1.00; N = 3; SK: 1, PW: 1, MW: 1).
- 9) 3/14/94, at the restaurant and on the path from the restaurant (2 apparently anomalous events).
- a) 8:35pm: a diamond-like cone suddenly appears on the table (5.00; N = 1; PW: 5).
- b) 8:55pm: a medallion drops on to PW's shoulder and from there falls to the ground (5.00; N = 1; PW: 5).
- 10) 3/14/94, at the second floor classroom (1 apparently anomalous event).
- a) 9:22pm: a gold-colored ring is found on the floor (5.00; N = 2; SK: 5; PW: 5).
- 11) 3/15/94, PW's office (10 apparently anomalous events).
- a) 3:00pm: a cinnamon-like odor permeates the office (3.00; N = 3; SK: 3, PW: 5, MW: 1).
- b) 3:29pm: a tiny diamond-like cone suddenly appears on a fax resting on the table (3.67; N = 3; SK: 4, PW: 5, MW: 1).
- c) 4:47pm: the light above the office table flickers twice while the other light in the room remains steady (2.00; N = 3; SK: 2, PW: 3, MW: 1).

- d) 4:48pm: a smoky quartz crystal falls to the floor (3.67; N=3;SK:3,PW:4, MW:2).
- e) 4:55pm: a bright magenta stripe is noticed on the fax that had not been observed previously (3.67; N=3; SK:4, PW:5, MW:2).
- f) 5:04pm: a small ring decorated with 5 small stones is found on the floor (3.67; N=3; SK: 4, PW:5, MW: 2).
- g) 5:05pm: a bell-shaped brooch with a black stone in its center is found on the floor (3.67; N=3; SK: 4, PW: 5, MW: 2).
- h) 5:10pm: a piece of jewelry in the form of a pair of linked metal rings drops on to AA's hand and from there to the floor (3.67; N=3; SK: 4, PW: 5, MW: 2).
- i) 5:31pm: the chalice is inspected and the amount of the oil-like liquid seems to have increased (3.33; N=3; SK: 3, PW. 5, MW: 2).
- j) 5:50pm: a cinnamon-like odor emanates from a glass of mineral water resting on the table (3.00; N=3; SK: 3, PW: 5, MW: 1).
- k) 5:52pm: a series of static-like blips is heard when a radio is tuned between two bands (3.00; N=3; SK: 3, PW: 5, MW: 1).
- 12) 3/15/94, in an automobile on the way to the restaurant (1 apparently anomalous event).
- a) 8:28pm: a triangular-shaped metal brooch with a round black stone in its center strikes SK in his chest (5.00; N=2; SK: 5, PW: 5).
- 13) 3/15/94, at and around the restaurant (16 apparently anomalous events).
- a) about 8:38pm: a metal ring is found on the sidewalk (5.00; N=2; SK: 5, PW: 5).
- b) about 8:39pm: a small stone appears on the sidewalk (5.00; N=2; SK: 5, PW: 5).
- c) about 8:41pm: a small stone falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- d) about 8:42pm: a small stone falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- e) about 8:43pm: a small stone falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- f) about 8:44pm: a small stone falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- g) about 8:45pm: a medallion falls to the restaurant floor (5.00; N=2; SK:5, PW:5).
- h) about 8:46pm: a metal ring falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- i) about 8:47pm: a metal ring falls to the restaurant floor (5.00; N=2; SK: 5, PW: 5).
- j) about 9:12pm: a medallion is found on the sidewalk (5.00; N=2; SK: 5, PW: 5).
- k) about 9:13pm: a small stone appears to have fallen on to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- l) about 9:14pm: a small stone falls to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- m) about 9:15pm: a small stone falls to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- n) about 9:16pm: following a clap of thunder, a small stone hits an automobile and then falls to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- o) about 9:17pm: a small stone falls to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- p) about 9:18pm: a small stone falls to the sidewalk (5.00; N=2; SK: 5, PW: 5).
- 14) 3/15/94, on the road from the restaurant (6 apparently anomalous events).
- a) 9:20pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- b) 9:22pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- c) 9:25pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- d) 9:30pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- e) 9:32pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- f) 9:35pm: a small stone is found on the road (5.00; N=2; SK: 5, PW: 5).
- 15) 3/15/94, in PW's office (1 apparently anomalous event).
- a) 9:40pm: red, blood-like liquid is seen on the front and back of AA's right and left hands (3.00; N=2; SK: 1, PW: 5).
- 16) 3/16/94, in and around PW's office (6 apparently anomalous events).
- a) 3:04pm: a religious medallion drops to the floor (5.00; N=3; SK: 5, PW: 5, MW: 5).
- b) 3:14pm: another medallion drops to the floor (5.00; N=3; SK: 5, PW: 5, MW: 5).
- c) 3:50pm: a metal ring is found on the floor (5.00; N=3; SK: 5, PW: 5, MW: 5).
- d) 3:55pm: a metal ring with a black stone in its center drops to the floor in the hall (5.00; N=3; SK: 5, PW: 5, MW: 5).
- e) 4:31pm: a metal ring with a black stone in its center is found on the floor in PW's office (5.00; N=3; SK: 4 PW. 5, MW: 2).
- f) 5:25pm: a series of static-like blips is heard when a radio is tuned between two bands (3.67; N=3; SK:4, PW: 5, MW: 2).
- 17) 3/17/94, in PW's office (1 apparently anomalous event).

- a) 3:20pm: a series of static-like blips is heard when a radio is tuned between two bands (3.67; N = 3; SK: 4, PW: 5, MW: 2).
- 18) 3/17/94, in and around the Meditation House (3 apparently anomalous events).
- a) 4:47pm: a 5 peseta Spanish coin depicting Franco is found on the ground outside the Meditation House (5.00; N = 2; SK: 5, PW: 5).
- b) 4:51pm: a blue and white stone is found on the ground outside the Meditation House (5.00; N = 2; SK: 5, PW: 5).
- c) 4:55pm: a pine-like odor permeates the Meditation House (5.00; N = 2; SK: 5; PW: 5).
- 19) 3/17/94, in PW's office (no apparently anomalous events).
- a) 6:15pm: AA states that there usually are strange sensations in his neck and chest before unusual phenomena occur (1.00; N = 2; SK: 1, PW: 1).
- 20) 3/20/94, in the Brasilia International Airport reception area (no apparently anomalous events).
- a) 5:35pm: a perfume-like odor permeates the area, appearing to emanate from AA's body (1.67; N = 3; SK: 1, PW: 3, MW: 1).

Table 2 indicates the times at which unusual phenomena were observed during each of the 20 sessions, a brief description of each event, and the mean rating for each event on the Anomaly Observation Scale.

In line with Giesler's (1984) suggestions, interview data were collected from AA to obtain information about his cultural milieu, his family background, and the phenomenology of his anomalous experiences. Ongoing written accounts of these data were kept by RK and SK. MW speaks some Spanish but little Portuguese; SK's knowledge of Portuguese is adequate conversationally but is limited. However, all the other members of the team speak fluent English and took turns translating AA's comments. AA's suggestions were respected, and all observations and data were shared with him.

In summary, the data available for quantitative analysis included the ratings on the Anomaly Observation Scale, the readings from the magnetometer, and the readings of AA's saliva pH, pulse, and blood pressure. The qualitative data, used in a supplementary manner, included the interview material ob-

TABLE 3
Frequency of Occurrence of Anomalous Events

Date	Interval Between Anomalous Events in Minutes
3/10/94	8
3/11/94	15
3/13/94	5
3/14/94	10
3/15/94	14
3/16/94	37
3/17/94	260
3/20/94	No anomalous events.

Table 3 depicts the number of minutes spent with AA each day divided by the number of events rated as "apparently anomalous." In this way, a ratio was computed for each day of the investigation.

TABLE 4

Correlates of Apparent Anomalous Events							
Variable	n	Mean	SD	Min/Max values	r or rho	p	df
pH after	18	6.22	0.72	2.3 / 5.0	-0.28	0.36	16
pH before	17	6.26	0.44	5.5 / 7.0	-0.39	0.13	15
Pulse after	22	106.00	10.65	90 / 126	0.14	0.53	20
Pulse before	21	106.10	10.91	90 / 126	0.11	0.62	19
Diastolic after	13	96.92	10.32	80 / 110	0.71	0.01	11
Diastolic before	12	96.67	10.73	80 / 110	-0.14	0.66	10
Systolic after	13	159.23	11.88	140 / 180	0.03	0.92	11
Systolic before	12	160.83	10.84	150 / 180	0.07	0.83	10
Geomag. after	17	23.79	0.16	23.665 / 124.098	0.61	0.01	15
Geomag. before	15	23.94	0.16	23.665 / 124.098	0.35	0.30	13
Geomag. S. Hemisphere	5	56.60	5.77	47/62	0.93	0.02	3
Geomag. S. America	5	62.20	5.54	54/67	0.8	0.09	3

Table 4 presents descriptive statistics and either Pearson product-moment correlations (above line) or Spearman rank order correlations (below line) (2-tailed) between apparently anomalous events and physiological and geomagnetic variables. Although these statistics are unreliable due to the inconsistent rate of sampling, it provides a research methodology for future applications with AA.

tained from AA and the reflections and observations obtained from other members of the collaborative research team.

Quantitative Results

Means of the 97 unusual events observed and recorded by our group were computed (Table 2); 91 of these means were above 2.1 and these events were designated as "apparently anomalous." Each saliva pH, pulse, systolic and diastolic blood pressure readings, as well as each geomagnetic reading, was paired with the "apparent anomalous event" immediately preceding it and immediately following it. Table 4 presents the correlations as well as a number of readings, means, standard deviations, and ranges. It will be noted that many standard deviations are large, probably due to the small sample size and the variability of AA's physiological readings.

There were 17 saliva pH readings followed by apparently anomalous events ($r = -0.39$, $p = 0.13$, 15df) and 18 saliva pH readings preceded by apparently anomalous events ($r = -0.28$, $p = 0.36$, 16df). The lower the pH reading, the higher the concentration of acid, hence, there is a slight non-significant tendency for more acid in the saliva to be associated with higher anomaly ratings.

There were 21 pulse readings followed by apparently anomalous events ($r = 0.11$, $p = 0.62$, 19df), and 22 pulse readings with antecedent anomalous events ($r = 0.14$, $p = 0.53$, 20df). AA's pulse is considered rapid and symptomatic of tachycardia.

There were 12 systolic blood pressure readings followed by apparently anomalous events ($r = 0.07$, $p = 0.83$, 10df), and 13 systolic blood pressure readings with antecedent anomalous events ($r = 0.03$, $p = 0.92$, 11df). AA's

blood pressure pattern is considered to be slightly elevated from a medical point of view.

There were 12 diastolic blood pressure readings with subsequent anomalous events ($r = -0.14$, $p = 0.66$, $df = 10$), and 13 diastolic blood pressure readings with antecedent anomalous events ($r = 0.71$, $p = 0.01$, 2-tailed, 1 df). The diastolic blood pressure readings following apparent anomalous events were significantly correlated with the anomaly ratings; in other words, the higher the diastolic blood pressure after the event, the higher the rating tended to be for the event. This blood pressure pattern is considered to be somewhat elevated from a medical point of view, and the blood pressure readings, as a whole, may be indicative of hypertension. The correlation with diastolic blood pressure may indicate that AA had an "adrenaline rush" shortly after the occurrence of an anomalous event. However, this interpretation is speculative since our physiological recordings were taken in such an irregular fashion that there may have been misleading artifacts in our derived statistics.

Geomagnetic readings were taken on only 3 days because the magnetometer, the only one in Brasilia, was not available for the other sessions. On each of the three days when the magnetometer was used, a continual recording was not possible because the batteries (purchased and installed fresh daily) failed before the end of the sessions. Nevertheless, magnetometer readings were taken every two minutes by MW on three days.

There were 15 geomagnetic readings followed by apparently anomalous events ($r = 0.35$, $p = 0.30$, 13 df), and 17 geomagnetic readings preceded by apparently anomalous events ($r = 0.64$, $p = 0.01$, 2-tailed, 15 df).¹ The significant correlation with geomagnetic readings indicates that geomagnetic activity may be related to the apparently anomalous events. Once again, however, the irregular way in which the geomagnetic data were collected might have led to misleading artifacts.

The day on which the range of the magnetometer readings was largest (albeit to a significant degree) was 3/15/94, a day on which the ratio of events rated as "apparently anomalous" was 1 anomaly every 13.71 minutes. That day, as well as the night of 3/13/94 when the ratio was even higher (i.e., 1 anomaly every 5.0 minutes) were marked by rain and thunderstorms.

The Geomagnetic Indices Bulletin for March, 1994 (National Geographic Data Center, 1994) lists 3/15/94 and 3/10/94 as the first and second "most magnetically disturbed" days of the month. Of the days on which formal sessions were held with AA, these are two of the three days with the highest ratio of events rated as "apparent anomalies." The same bulletin lists 3/20/94 as the tenth most "magnetically quiet" day of the month. This was the day on which geomagnetic activity was least elevated of the days during which sessions

¹To investigate this relationship in greater depth, a post-hoc analysis was conducted. When the geomagnetic reading was paired with the apparent anomalous event most contiguous in time, regardless of whether it was before or after the event, there were 16 pairs ($r = 0.50$, $p = 0.05$, 2-tailed, 14 df).

with AA were held and the only such day during which no events were rated as "apparent anomalies." However no formal session was held on that day.

When each ratio was paired with the National Geographic Data Center's aa index for the Southern Hemisphere for the 5 days on which formal sessions were held with AA, an r of 0.93 was obtained ($p = 0.02$, $df = 3$). When the aa index for South America was used for these 5 days, an r of .83 was obtained ($p = 0.09$, $df = 3$). There was an almost one-to-one correspondence between the ratios of "apparent anomalous events" per hour and the degree of heightened geomagnetic activity during these 5 days.

On 3/17/94, HL took several of the objects to a jeweler for analysis. Several of the stones were identified as agate, one as amethyst, and another as prasio. One of the diamond-like cones was analyzed and proved to be a diamond. The green stone that appeared on 3/14/94 proved to be a low-grade emerald. The black stones appearing in several pieces of jewelry were identified as onyx. Some of the metal settings for the stones and the metal rings were identified as inexpensive gold and silver alloys. When SK returned to San Francisco, he took the three brooches in his possession to a jeweler who made a tentative evaluation of their origin as Bali, Indonesia.

On 4/4/95, SK received a description of the napkin that MW had observed on 3/10/94. John Stahl, a manufacturer of specialized paper products, inspected the napkin and wrote, "It appears to have been folded and refolded multiple times, not necessarily in the same pattern. There seem to be 32 small rectangles formed by folding the paper in half 5 times. I see the swirls that seem to correspond to the 32 rectangles. These wrinkles could have been formed by a thumb twisting one way or another. It seems a bit tenuous to call them 'spirals' although there is a direction to the flow. It is possible to identify many of the places where the wrinkles form mirror images, suggesting that the swirls were impressed on the paper after it was folded. It appears that insofar as directions can be ascertained, there are an equal number moving in each direction. I suppose you don't want to interfere with my objective observations by telling me the history or significance of the paper, but I must admit I am getting curious."

Qualitative Results

On 3/15/94, when AA was told about parapsychologists' search for a "permanent paranormal object" such as seamless linked rings, he felt confident that such an object could be produced. Shortly after SK's first mention of this hypothetical object, a pair of small, ornately decorated linked rings seemed to drop on to the top of AA's left hand, and from there to the floor where HL retrieved it. The appearance of the linked rings, of course, could have been due to sleight-of-hand, but it must be noted that these rings appeared a few minutes after such an item was mentioned (at first in English, and then in Portuguese translation).

In July, HL obtained a report on the linked rings from three specialists in the

area of metals and minerals. They noted that the rings are made of commercial silver, i.e., 95 percent silver and 5 percent copper, and there is an engraved number, 92.5, that seems to confirm this judgment regarding the amount of silver in the alloy. The rings contain a total of 50 semi-precious marcasite stones, 24 on one ring and 26 on the other; two stones are missing on the former ring. The total weight of the rings is 4 grams and they are valued at about \$50.00 (U.S.). No judgment was made as to whether the links were seamless; no seam could be found but the expense of a thorough metallurgic analysis was prohibitive.

AA's stated purpose for cooperation in the research project was that he would like to know more about the unusual phenomena he has experienced over the years.

AA remarked that he rarely has volitional control over the phenomena, but that there are "signs" that they will occur, e.g., the taste of acid in his saliva, the loss of his color vision, the appearance of sweat on his hands. He drank a great deal of water during our sessions, believing that it serves as a "conductor" for the unusual phenomena.

One source of advice for AA is his "feminine voice" which he hears occasionally as if it were near his left ear. Another source of advice is his dreams; he told us that he receives the solutions to his queries directly rather than through the dream symbols that many of his friends report. For example, when he asked if he should participate in this research project, he dreamed that he was sitting at a table with a group of investigators. He also told us that he dreams about the "green people" and their planet.

AA reported two dreams during our time together. On 3/11/94 he related the following dream report from the previous night: "I am with an ancient sage who is very tall and who has a patch on his left eye. He holds a tall stick which marks him as a person of authority. He appears to be very charismatic and powerful. He is practicing alchemy, and is mixing something in a copper vat." On 3/16/94 he related another dream report from the previous night: "I am standing on a large stone platform observing many roads, all of them lined by stately white columns. These roads are made of solid material, and everything in the dream is pristine and beautiful. All the roads head toward the same destination."

Table 2 presents the events that occurred during our 20 sessions together. It should be mentioned that AA rarely reported the events under question; that role fell to another member of our group, often PW, perhaps because he knew what to expect and where to look due to his prior contact with AA. For example, it was PW not AA who brought our attention to the liquid in the chalice on 3/10/94. The perfume-like odor was observed and mentioned by several group members but it was PW who suspected it might be localized in the chalice, a container that he believed had been empty at the beginning of the session. PW inspected the chalice because of his previous experience with AA and an observed pattern in which religious objects in and around PW's office had figured

prominently in the unusual events. However, there was no group member present for 100 percent of these events, casting doubt upon the likelihood of a conspiracy.

There were several sensory modalities involved in the detection of an unusual event. Smell was involved in the chalice incident. Sound was frequently the clue, as when an object seemed to have fallen to the floor or to the ground. Sometimes an object was seen falling through the air, or was noticed in a nearby area. At other times, AA simply stated that something unusual had taken place and members of our group began to search the surrounding area. This was the case in the Meditation House incident of 3/11/94. AA indicated that something unusual had taken place, and members of our group began to search the inside and outside of the Meditation House. SK discovered a Spanish coin and an Italian coin. He had personally checked out the area earlier in the day and observed nothing unusual. AA had been with group members from the time he arrived at the Foundation and would have had no opportunity to go to the Meditation House.

Directions for Future Research

Although this preliminary study of AA has allowed us to reach no firm conclusions, the results are encouraging enough to warrant further research. Some of the major difficulties with this investigation we need to overcome were: 1) lack of high quality experimental controls; 2) inadequate instrumentation; and 3) inconsistent measurements of physiological variables. A skeptical perspective regarding the three statistically significant results might maintain that: 1) the correlation with diastolic blood pressure could indicate that a "rush" followed a successful attempt at deception; 2) the correlation with geomagnetic data is suspect because of the defective magnetometer; and 3) the correlation with the Southern Hemisphere's geomagnetic index could have resulted from a deliberate attempt to support AA's statement that phenomena are more likely to occur on stormy days.

For future investigations instrumentation needs to be obtained that would enable a continuous monitoring of AA's physiology with sampling rates occurring every 30 seconds. The physiological variables to be studied in this manner should include EKG, blood pressure, pulse, and GSR. These short intervals would allow for a virtual one-on-one match with the unusual events. In addition, geomagnetic activity should be recorded with a more reliable instrument. The significant data obtained in this study are congruent with previously reported associations between PK performance, on the one hand, and physiological and geomagnetic activity, on the other hand. Thus, these preliminary findings need to be put to a more thorough and more rigorous test because of their potential value in finding reliable correlates of PK both in the laboratory and in the field.

The Anomaly Observation Scale which we utilized for our first investigation could be revised to include several subcategories at the top of the scale to

differentiate among the more anomalous events such as those that occurred during the first session, e.g., the anomalous experience of a polished stone would receive a somewhat lower score than the anomalous appearance of a finely crafted ring. Increasing the number of raters would enable means to be based on larger numbers of scores. Some of the means used for this study were based on the scores of two raters, and occasionally only one person was present during an event later rated as "apparently anomalous." To some extent, anomalies — including those measured by this scale — are in the eye of the beholder. PW's ratings were fairly high, MW's were fairly low, and SK's were between these poles. Even so, the results obtained in this study suggest the utility of this scale or one like it.

With the sampling rate of the physiological variables increased, in addition to a refinement in the Anomaly Observation Scale (and an increased number of raters), the reliability of the measurements would be enhanced and would yield statistics that are more dependable.

To increase the quality of the experimental controls, video and audio recordings should be made of each session with AA, if funding becomes available. Prior to and after each research session, the experimental setting should be examined and photographed for later analysis. During our first series of sessions with AA we found it difficult to determine whether or not certain objects within the setting were actual "apports" or merely objects that we failed to examine closely enough before they were brought to our attention.

There needs to be a more efficient means of collecting blood samples if stigmata recurs, especially from the forehead as this location is highly unusual in similar cases that have been reported. The heat of the "apports" should be examined immediately after their appearance because several of us noticed considerable warmth on the objects which soon dissipated. In the case of "apports" that seemed to fall on to a surface, closer attention should be paid to the point at which the objects become visible, the sound they make when striking a surface, and the angle at which they fall and/or bounce. It would be useful if these objects could be dusted for fingerprints as soon as they appear. It would also serve a useful purpose to record the distance of each object from AA and other group members, plotting these data on a comprehensive chart.

If funding were available, there could be double video monitoring of each session, an analysis of gas samples of the anomalous smells detected, an analysis of the radioactivity level of the "apports," the use of a voltmeter to record local electromagnetic fields, and a continual record of barometric pressure.

At some point, the services of a magician skilled in sleight-of-hand should be obtained. Such books as *The Trick Brain* (Fitzhee, 1944) provide detailed instructions for magicians who seem to "materialize" objects. Such devices as cords, threads, molds, shells, flaps, panels, mirrors, pistons, levers, reels, chemicals, secret compartments, false bottoms, and confederates are employed by these practitioners — albeit generally on a stage instead of at close

quarters. The type of magician who would be most useful in studying the phenomena in question would be a person skilled in close-up magical effects rather than (or in addition to) stage illusions. There was no discernible deception on the part of AA or any other group member during our time together, nor were any inappropriate requests or demands made by AA that could be interpreted as an attempt to manipulate the situation. Indeed, AA refused any suggestions that he might receive money for his participation, and he has consistently shunned publicity, e.g., refusing to give television interviews. In other words, he does not behave in a manner resembling the more ostentatious "PK stars" of history. Furthermore, it should be remembered the AA does not claim to "materialize" or "transform," "duplicate," or "teleport" objects, and that several of the observed phenomena occurred when AA was a considerable distance from the event or in another room.

Investigators could also place one or more plates of photographic film in reliably sealed packets that are light-proof at various places in the test locations. With adequate safeguards, any observed exposures would indicate the action of an anomalous agency, regardless of the authenticity of the "apports" or other noted effects. Many of these suggested procedures have been used in previous investigations of what parapsychologists refer to as "recurrent spontaneous psychokinesis" (Rush, 1977, p. 49), a term which is inclusive enough to encompass the phenomena we studied. Finally, we should note the harmonious ambiance that characterized our efforts in March, 1994. Future investigators and future research projects can not pay too much attention to interpersonal factors. A spirit of cooperation characterized our initial efforts, and probably made an important contribution to the wealth of data we obtained.

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Figures 1A - 1F present examples of AA's "apports." These objects are various types of jewelry which appeared during our research sessions with AA.



Fig. 1A Onyx Brooch



Fig. 1B Onyx Brooches

