The Journal of Parapsychology, Vol. 67, Spring 2003 (pp. 147–166)

VIDEOTAPED EXPERIMENTS ON TELEPHONE TELEPATHY

BY RUPERT SHELDRAKE AND PAMELA SMART

ABSTRACT: The authors tested whether participants (N = 4) could tell who was calling before answering the telephone. In each trial, participants had 4 potential callers, one of whom was selected at random by the experimenter. Participants were filmed on time-coded videotape throughout the experimental period. When the telephone began ringing, the participants said to the camera whom they thought the caller was and, in many cases, also how confident they felt in their guesses. The callers were usually several miles away, and in some cases thousands of miles away. By guessing at random, there was a 25% chance of success. In a total of 271 trials, there were 122 (45%) correct guesses ($p = 1 \times 10^{-12}$). The 95% confidence limits of this success rate were from 39% to 51%. In most trials, some of the callers were familiar to the participants and others were unfamiliar. With familiar callers there was a success rate of 61% ($n = 100$; $p = 1 \times 10^{-13}$). With unfamiliar callers the success rate of 20% was not significantly different from chance. When they said they were confident about their guesses, participants were indeed more successful than when they were not confident.

Most people have had experiences with telephone calls that appear to be telepathic. Either they think of someone for no apparent reason, then that person calls; or they know who is calling when the phone is ringing, before picking it up; or they call someone who says, "I was just thinking about you!" (Brown & Sheldrake, 2001; Sheldrake, 2000, 2003).

We have developed a simple experimental procedure for testing whether people really can tell who is calling. A participant receives a call at a prearranged time from one of four potential callers. The participants know who the potential callers are but do not know which one will be calling in a given trial. The caller is picked at random by the experimenter.

When the telephone rings, the participant guesses who is calling. The guess is either right or wrong. By chance, participants would be right about 1 time in 4, or, in other words, have a 25% success rate.

We have described elsewhere the results of more than 570 such trials, involving 63 participants (Sheldrake & Smart, in press). The average success rate was 40%, hugely significant statistically (by the binomial test, $p = 4 \times 10^{-16}$). In these trials the callers and participants were miles apart, and in some cases thousands of miles. The results implied that the participants' above-chance success rate was a result of telepathy from the callers.

We are grateful to Jan van Bolhuis, of the Free University of Amsterdam, for his help with statistical analysis. This work was made possible by grants from the Lifebridge Foundation, New York, and the Bial Foundation, Portugal.

An explanation in terms of telepathy was also favoured by the fact that the success rates depended on who was calling. In real life, apparent telephone telepathy generally occurs between people who are emotionally bonded (Sheldrake, 2003). We carried out tests in which some of the potential callers were familiar people, family members, or friends, nominated by the participants themselves. Others were unfamiliar people whose names the participants knew but whom they had never met.

In these tests, involving 37 participants and 322 trials, 53% of the guesses were correct with familiar callers ($p = 1 \times 10^{-16}$), whereas with unfamiliar callers the results were exactly at the chance level of 25% (Sheldrake & Smart, in press). The difference between responses with familiar and unfamiliar callers was highly significant ($p = 3 \times 10^{-7}$ by Fisher's exact test).

In view of the supposedly elusive nature of psi and the difficulty of obtaining repeatable results, these data may seem too good to be true. Although they cannot be explained in terms of normal sensory clues, could they be explained by cheating?

We think cheating is unlikely to explain this effect. In general terms, it seems improbable that so many apparently honest people would cheat. It is also possible to make a quantitative estimate of cheating from empirical data. In our earliest series of experiments, we inadvertently provided an opportunity for cheating. The experimental data make it possible to find out whether this opportunity was taken up or not.

In these early experiments, we carried out two trials per session. Both callers were notified in advance. In some cases (about 1 in 4), the same person was picked for both calls. When a caller knew he or she would be calling again in the second trial, in the first trial the caller could have conveyed information, consciously or unconsciously, when he or she was speaking to the participant.

If such a leakage of information had happened, the chances of guessing correctly in the second trial would have increased. It was in fact slightly higher, 43% as opposed to 35%, but this difference was not statistically significant. Only in the case of 1 participant was there a striking and statistically significant difference between the success rate with first and second calls (Sheldrake & Smart, in press). The results from the first trials alone, in which there was no such possibility of information leakage, were still very significant statistically.

Nevertheless, in the experiments we have just described we were relying on the honesty of the participants and their callers. In this article we describe further series of experiments in which participants were videotaped continuously in such a way that we could rule out the possibility that they were giving us false information about their guesses, or receiving telephone or e-mail messages from potential callers. Before the callers were selected at random, the participants were already on camera, and any incoming telephone calls or e-mails would have been detected on the film. Their guesses were recorded on the videotape before they picked up the phone.

If the previous positive results had been a result of cheating, then in these videotaped trials the scores should have slumped to chance levels.

This was not the case. As we describe in this article, the average success rate in the videotaped trials was higher, not lower, than that in our nonvideotaped experiments.

Method

Recruiting Participants

We recruited participants through advertisements in the Part-Time Work section of newspapers or through a recruitment Web site called www.hotrecruit.co.uk. Our advertisements read: "Do you know who is ringing before you pick up the phone? Good pay for fun and simple experiments as part of psychic research project." We initially offered a payment of £10 per two-trial session, and later £10 for a one-trial session. We sent details of the test procedure to the people who replied to these advertisements and asked them to nominate people to whose calls they thought they might respond. We asked them to check that these people would be willing to take part and asked them to supply us with their contact details and telephone numbers. We also asked participants to tell us when they would be able to take part in tests and to check that their callers would be free to call them at those times.

Some of the participants who had completed an initial series of tests, involving at least 10 trials, were then asked to take part in further trials that would be videotaped, as described below. The 4 participants who did so were Sue Hawksley (SH), in Wakefield, West Yorkshire (date of birth March 23, 1964); Scott Reeves (SR), in Mayfair, central London (date of birth March 26, 1966); Claire Morsman (CM) in Twickenham, Middlesex (date of birth April 6, 1976); and Thomas Marcovici (TM) in Ealing, West London (date of birth February 5, 1977).

Sue Hawksley took part in a prespecified series of 100 trials with four callers nominated by herself (SH Series 1 and 2), and then in a further series of 85 trials with two familiar and two unfamiliar callers (SH Series 3). She also took part in a series of 17 trials conducted on a single day, with all the callers filmed (SH Series 4). The other 3 participants took part in a prespecified series of 30 trials each.

Callers

For the first two series of trials, we asked Sue Hawksley to nominate all four callers, who were familiar people to whom she thought she might react telepathically. In fact, not all four callers she originally nominated were able to take part in all trials, and so she nominated a further two callers who substituted for those originally chosen in some of the trials. In the subsequent series, following Methods 3 and 4 (described below), we asked participants to nominate only two or three callers. We supplied the other one or two, who were unfamiliar to the participants, but whose names were told to the participants. These unfamiliar callers were Pam Smart (PS), who lives in Greater Manchester, and Carole Macaulay, who lives in London.

Test Procedures

For each trial, there were four potential callers. The participants knew which callers would be involved and also knew that one of them would be selected at random by the throw of a die. For the throw of the die, we used high-quality casino dice and a ribbed casino-style dice cup, purchased in Las Vegas, Nevada. Each of the potential callers was assigned a number from 1 to 4 and was selected by the die showing one of these numbers after being thrown. If the die showed 5 or 6, then it was thrown again until a number between 1 and 4 came up. The randomizations were tested statistically as described below.

In all tests, the participants used landline telephones rather than cell phones, and in all cases only telephones without a caller identification system were used. The video camera was set up in a fixed position so that the telephone was in full view. The participants themselves switched on the video camera at the beginning of the session and switched it off after the trial had been completed. When a cassette was full, they mailed it to PS. In all cases the trials were filmed on time-coded videotape, with the date and time burnt into the film.

In the first series of trials with Sue Hawksley, the camera focussed on the telephone, and thus recorded exactly when it rang and what Sue Hawksley said about her guess before answering it, and also what she said when she did answer it. But she herself was not on camera all the time. In all subsequent trials with Sue Hawksley, and in all trials with the other participants, the participant sat in a chair in full view of the camera so that all actions and activities during the session could be recorded.

In all cases, when a trial was taking place and the phone started ringing, the participant said his or her guess to the camera before picking up the phone. In addition, in most trials, the participants were also asked to rate the confidence they felt in their guess, either "confident," "not very confident," or "just guessing." Immediately upon picking up the phone, the participants again stated their guess by saying that person's name before the caller said anything. The caller then revealed his or her identity, so the participants received immediate feedback.

In most cases the participants were alone in the house or apartment while the trials were taking place. However, during some trials with Sue Hawksley, her daughter (then age 8) was present in the house, and in a few of the trials with Thomas Marcovici, his father was in the house but in a different room. In all trials, Scott Reeves and Claire Morsman were alone.

We used four different procedures, involving progressive simplifications and also progressive increases in rigor. The four methods are described below.

1. Method 1 was used only in the first series of trials with Sue Hawksley. There were two trials per session. The two callers were selected at random by two throws of the die (ignoring 5 and 6). If the die showed the same number twice, then the same person was the caller in both trials.

The times of the trials were also selected at random. Test sessions were usually an hour long, at times agreed in advance with the participants and

their callers. To pick the call times at random, we divided the session into 6, and the beginning of one of these periods was selected by the throw of a die. For example, if the test session was from 10 to 11 a.m., the six periods began at 10-min intervals, starting at 10.10 a.m. Thus if the die showed 4, then the test would be at 10.40 a.m. The die was then thrown again to select the time for test with the other caller. If 1 came up, this meant 10.10 a.m. If the same number came up twice, then the die was cast again, to come up with a different time.

The experimenter (PS) telephoned the randomly selected callers in advance, usually an hour or two beforehand, and asked them to call the participant, Sue Hawksley, at the randomly selected times and to think about her for about a minute beforehand. PS also rang the callers who had not been selected to tell them that they were not involved in this test session. This procedure was less rigorous than Methods 3 and 4, because it would have been possible for the callers to call Sue Hawksley before the tests began and inform her that they had, or had not, been selected.

A few minutes after the tests, the experimenter rang the participant to ask what his or her guess had been, and in some cases also asked the callers, to make sure that the participant had correctly reported the guess. In no cases did callers and participants disagree, nor did their reports differ from those recorded on the videotape, which was examined later. The experimenter recorded the result, noting down the date and times of each trial, the caller and the guess, and whether the guess was right or wrong.

2. In Method 2, also used only in the first series with Sue Hawksley, we simplified this procedure by using fixed times for the two trials in a session, for example at 10.15 and 10.30 a.m. As in Method 1, the callers were selected at random and informed an hour or two beforehand whether they had or had not been selected. The session itself began 15 min before the first trial, in this example, at 10.00 a.m. This is the time at which the participant switched on the video camera and sat in its field of view. The first caller to be selected was asked to call at 10.15 a.m., and the second (with a 1 in 4 chance that it would be the same person again) to call at 10.30. Potential callers who had not been selected were called and told they had not been selected. The experimenter found out and recorded what the guesses had been as in Method 1.

3. Method 3 was more rigorous than the previous methods. There was only one trial per session, and the session began 15 min before the time fixed for the trial, when the participant switched on the video camera. The experimenter (PS) selected the caller at random less than 15 min before the prearranged test time, while the participant was already on camera. Say the test time was 2.30 p.m., then the caller would turn on the video camera at 2.15, and the caller would be selected at random after 2.15 and notified before 2.20. Also, in Method 3, all videotapes were evaluated "blind" by a third party, as described below, who was not otherwise involved in the experiments.

In Series 3 with Sue Hawksley, to start with (Method 3A) the experimenter called the three people who had not been selected to tell them so.

From November 15, 2001, this step was eliminated (Method 3B). The potential callers were told that if they had not been notified at least 5 min before the test time, then they had not been selected. This simplification made it possible to carry out a series of separate, one-session trials in rapid succession, typically at 15-min intervals. Method 3B was used in all tests with the other 3 participants.

4. In Method 4, used in Series 4 with Sue Hawksley, all four callers were in the same location. The experimenter, Rupert Sheldrake (RS), selected the caller for each trial by the throw of a die. The selected caller then went to a separate room to make the call. The throwing of the die by RS and the subsequent movement of the caller to the separate room and then her or him making the call were filmed continuously by an independent cameraman. Meanwhile RS remained with the other three callers. Simultaneously, another cameraman was filming Sue Hawksley continuously in her house a mile away. The two cameramen were Nicholas and Mark Francis, who were brothers. We recruited them through the Institute of Communication Studies of Leeds University, where Nicholas Francis had been a student of broadcast journalism prior to this experiment. They received fees agreed in advance. They had no prior or subsequent connection with us, apart from the contacts needed for making the films, and then editing them into a synchronized split-screen format, in which Sue Hawksley can be seen on one side of the screen and the callers on the other.

Examination of the Videotapes

With Methods 1 and 2, the time-coded videotapes from these trials were viewed by PS, who noted down the participants' guesses and the times at which they made them. She transcribed what they said about their confidence in their guesses and any other remarks. She also noted if there were any other telephone calls during the experimental period, or if the participant moved in such a way that he or she was off camera, even if only for a few seconds. Trials were disqualified if there were any other unscheduled telephone calls during the experimental period. Apart from the first series of trials with Sue Hawksley, in which she was not required to be on camera all the time, trials were also disqualified if a participant was not under observation for the whole of the experimental period.

For trials conducted by Method 3, the time-coded videotapes were evaluated blind by Dr. Amanda Jacks, who knew no details of the tests and was unaware who was calling or when the calls would happen. She recorded the participants' guesses and comments, and the times at which they made them. She also noted if there were any other telephone calls or if the participant went off camera at any stage.

In the first series of 60 trials with Sue Hawksley, 4 trials were disqualified because of unscheduled incoming telephone calls. In the third series of 85 trials, 6 trials were disqualified because of incoming telephone calls during the experimental period, and 9 because she went off camera briefly, usually to attend to her 8-year-old daughter. In the case of Thomas Marcovici, 1 trial was disqualified because of an unscheduled incoming

telephone call and 1 because he went off camera briefly, leaving 28 trials for analysis. It was not necessary to disqualify any of the trials with Claire Morsman and Scott Reeves.

Results

Statistics

For the testing of the hypothesis that the proportion of correct guesses would be above the chance level of .25, or 25%, we used the exact binomial test (Siegel & Castellan, 1988). The null hypothesis was that the probability of a correct guess was .25.

We used Fisher's exact test (Siegel & Castellan, 1988) for the comparison of results with familiar or unfamiliar callers, or the results in first and second trials. For comparing success rates in trials with the participant's estimate of his or her confidence, we used the Cochran and Armitage trend test (Agresti, 2002). We calculated exact 95% confidence limits for the true probability of a correct response as described by Hahn and Meeker (1991).

Randomization Tests

Trials were randomized by the throw of a die, and for each trial, each caller was assigned a number from 1 to 4. In Series 1, 2, and 3 with Sue Hawksley, there were more than four callers altogether, although only four took part in a given trial; when one was unable to participate, another took her place and was assigned the same number as the person for whom she was substituting. We tested the randomization provided by the throw of the die by comparing the actual frequency of the numbers 1 to 4 with the expected frequency, using the chi-square test (with 3 degrees of freedom). We also compared the actual with the expected number of repetitions, that is, the number of times the same number appeared twice in a row, using the binomial test. The expected number of repetitions was $0.25(n-1)$.

Table 1
Tests for Randomness of Die Throws in the Various Series of Trials

Series	Trials	Rep exp	Rep act	*p*	*F* exp	1	2	3	4	*p*
SH 1+2	100	27.75	19	*ns*	25	22	18	35	25	*ns*
SH 3	85	21	18	*ns*	21.25	23	23	20	19	*ns*
SH 4	17	4	2	*ns*	4.25	4	3	5	5	*ns*
SR	30	7.25	6	*ns*	7.5	10	7	6	7	*ns*
CM	30	7.25	9	*ns*	7.5	8	9	7	6	*ns*
TM	30	7.25	7	*ns*	7.5	8	6	6	10	*ns*

Note. The expected number of repetitions (Rep exp) was compared with the actual number of repetitions (Rep act) by the binomial test. The expected frequency of a given number (*F* exp) was compared with the actual numbers using the chi-square test. *ns* = not significant at the $p = .10$ level. SH = Sue Hawksley; SR = Scott Reeves; CM = Claire Morsman; TM = Thomas Marcovici.

The randomizations are summarized in Table 1, and the statistical tests showed that in all cases the randomizations did not differ significantly from chance expectation at the $p = .10$ level. In this table, we included all the trials we conducted, although some were later eliminated from the analyses shown below because the participants went off camera or received other phone calls during the experimental session.

First Two Series of Videotaped Trials With Sue Hawksley

As we have described elsewhere (Sheldrake & Smart, in press), we carried out an initial series of 30 trials with Sue Hawksley that were not videotaped. She guessed the caller correctly in 14 trials (47%), significantly above the 25% level expected by chance ($p = .008$).

In the present experiment, we conducted a prespecified total of 100 videotaped trials with her, in two series, the first of 60 trials and the second of 40. The first series of trials was carried out between September 12, 2000 and January 9, 2001. In the first series, Sue was not required to be on camera throughout the experimental period but only when actually answering the telephone. The first 36 trials followed Method 1, in which there were two calls per session, at randomized times. The remaining trials followed Method 2, with two calls per session at prearranged fixed times. In two of the 2-trial sessions there were unscheduled telephone calls before either of the trials had taken place. These 4 trials were therefore disqualified, leaving a total of 56 trials. (In the disqualified trials, 3 guesses were right and 1 was wrong.) Sue was right in 28 out of 56 trials (50%). The exact binomial is highly significant ($p = .00005$).

The second series of 40 trials was carried out between January 10, 2001 and March 19, 2001. In the second series Sue was on camera continuously. All of these trials followed Method 2, with 2 trials per session at fixed times. Sue was right in 18 trials out of 40 (45%), again significantly above the chance level ($p = .005$). Under these more rigorous conditions, her performance was not significantly different from that in the first series.

Sue's success rate when calls came at random times (Method 1) was higher than with Method 2 when the calls came at prearranged times. She was right in 18 out of 32 trials with calls at random times (56%), and right 28 times out of 64 trials with calls at fixed times (44%), but this difference was not statistically significant ($p = .17$).

With Methods 1 and 2, the use of 2 trials per session left open the possibility that there could have been a leakage of information from the first caller to the participant. At the time the first trial took place, the caller knew whether or not she would be calling again in the second trial and could therefore have consciously or unconsciously given some indication of this fact. If this were the case, then we would expect there to be more correct guesses in the second trials than in the first. This was not the case. In 45 sessions there were 2 trials per session, accounting for 90 of the 96 trials. The remaining 6 trials in the series had only 1 trial per session. In these 45 sessions, Sue Hawksley guessed correctly in 21 out of 45 first trials (47%), and in 22 out of 45 second trials (49%). There was practically

no difference between these scores, and thus there seems to have been no significant leakage of information from the first callers.

To be additionally sure that no leakage of this kind could have accounted for Sue's success, we could take the results only from the 45 first trials, plus those from the six sessions in which there was a single trial, in which there were 3 correct guesses. Adding together the first trials and single trials, there were 24 correct guesses out of 51 (47%), very significantly above chance ($p = .0005$).

Altogether six callers took part in this series of 100 trials, although only four were involved in any given trial. All were either friends or family members and lived within a 5-mile radius of Sue Hawksley's home. Her success rate with these callers varied considerably, being highest with her friends Jayne and Gayle (see Table 2). Her lowest success rates were with her sister, Gillian, and her mother, Emma.

TABLE 2
SUE HAWKSLEY'S RESPONSES TO DIFFERENT CALLERS IN THE FIRST AND SECOND SERIES OF TELEPHONE TELEPATHY TRIALS

Caller	Trials	Right	% right	*p*
Emma	15	4	27	.54
Gayle	19	12	63	.0005
Gillian	21	6	29	.43
Jayne	20	15	75	.000004
Kay	20	9	45	.04
Laura	1	0	0	1.0
Total	96	46	48	.000001

The Third Series of Trials With Sue Hawksley, Comparing Familiar and Unfamiliar Callers, Using a More Rigorous Method

In our third series of videotaped experiments with Sue Hawksley we used Method 3, which was more rigorous than Methods 1 and 2, used in the preceding series. In Method 3, there was only one trial per session, the participant remained on camera throughout the entire experimental session, the callers were selected only after the participant was on camera, and all videos were evaluated blind.

There were 85 trials in this series, commencing on April 2, 2001 and finishing on October 2, 2001. All of these trials followed Method 3A. Two of the callers were friends who had already participated in the previous 100-trial series, Gayle and Jayne. The other callers were unfamiliar: one was PS, whom Sue Hawksley knew only as an experimenter, and the other callers were a computer, in the form of British Telecom (BT) alarm calls, and then, in place of the computer, Carole Macaulay, whom Sue had never met.

Of these 85 trials, 15 were disqualified, 6 because of unscheduled telephone calls during the experimental period and 9 because Sue went off camera briefly, usually to attend to her young daughter or to answer

the doorbell when the postman came. (Her guesses were right in 7 [47%] of these 15 excluded trials.)

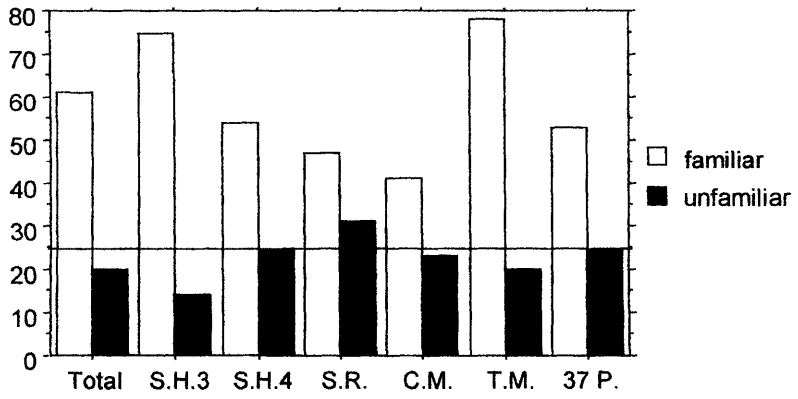

Figure 1. Percentage success in telephone telepathy trials with familiar and unfamiliar callers. The combined results from a total of 175 videotaped trials are shown first (total), then the data from the third and fourth series of trials with Sue Hawksley (S.H. 3 and 4), with Scott Reeves (S.R.), Claire Morsman (C.M.), and Thomas Marcovici (T.M.). For comparison, the combined results are also shown from 190 trials involving 37 participants (37 P) in nonvideotaped trials (Sheldrake & Smart, in press). The horizontal line indicates the chance expectation level of 25%.

In the remaining 70 trials there were no interruptions or other telephone calls, and Sue was on camera continuously throughout the 15-min experimental period preceding the telephone call. Sue was right in 30 (43%) of these 70 trials, very significantly above the chance level ($p = .0008$).

There was a striking difference between Sue's performance with familiar and unfamiliar callers. With the two familiar callers, she was right 25 times out of 35 (71%; $p = .00000001$). With the unfamiliar callers, she was right only 5 times out of 35 (14%), not significantly different from the chance level (see Figure 1). The difference between success rates with familiar and unfamiliar callers was very significant statistically ($p = .000001$).

The success rates with individual callers showed a wide variation, ranging from 81% with Jayne to 0% with Carole and the BT computer (see Table 3). An analysis of the pattern of guesses showed that Sue never guessed "Carole" or "BT" at all, and so there was no possibility of her being right when Carole or the computer called (see Table 3). She guessed "Gayle" or "Jayne" 34 times each, and guessed "Pam" only 12 times. A higher proportion of "Jayne" guesses than "Gayle" guesses was correct.

Sue Hawksley's Confidence in Her Guesses

After she had started the first series of videotaped trials, Sue told us that she sometimes felt more confident about her guesses than at other times. To explore whether these feelings were related to the accuracy of

the guesses, we asked her to say to the camera how confident she felt when she made her guess. There were three grades of confidence: "confident," "not very confident," and "just guessing." She began doing this on October 27, 2000 and continued the rest of the first series of trials and throughout the subsequent series. Altogether, she said how confident she felt in 144 trials. Her confidence ratings were transcribed from the videotape.

TABLE 3
SUE HAWKSLEY'S GUESSES WITH DIFFERENT CALLERS IN THE THIRD SERIES OF TELEPHONE TELEPATHY TRIALS

Caller	Trials	"BT"	"Carole"	"Gayle"	"Jayne"	"Pam"	% right	*p*
BT	2	0	0	2	0	0	0	1.00
Carole	15	0	0	8	4	3	0	1.00
Gayle	14	0	0	8	5	1	57	.01
Jayne	21	0	0	3	17	1	81	1×10^{-6}
Pam	18	0	0	7	6	5	28	.48
Totals	70	0	0	28	32	10	43	.0008

Note. Correct guesses are underlined.

The results showed that when she thought she was just guessing, in fact she was, with only 29% success, not significantly higher than the chance level of 25%. When she was not very confident, she was right 35% of the time, significantly higher than chance, but not much higher. But when she felt confident she was spectacularly successful, correct 82% of the time, with odds against this result being due to chance of billions to one (see Table 4). The difference between her success rates when she was confident, not confident, and just guessing was very significant (by the Cochran and Armitage test, $p = .00003$).

TABLE 4
THE RELATIONSHIP BETWEEN SUE HAWKSLEY'S CONFIDENCE AND HER SUCCESS IN GUESSING WHO WAS CALLING IN 144 VIDEOTAPED TRIALS

Confidence	Trials	Right	% right	*p*
Confident	28	23	82	3.6×10^{-10}
Not confident	95	33	35	.02
Just guessing	21	6	29	*ns*

The Fourth Series of Trials With Sue Hawksley, in Which the Callers Were Also Videotaped

In the previous series of trials with Sue Hawksley, as in trials with other participants, the callers were all in different places: some at home, some at work, and some in other locations. In a further series of trials, all four callers were gathered together in the same place: in a hotel, the Holmfield Arms, a mile from her home in Wakefield. RS coordinated the experiment. We used a private room for making the calls. Three of the callers were friends (Gayle, Kay, and Jayne). The other caller was PS, who was one of the unfamiliar callers in the second series of trials.

Two independent cameramen (Nicholas Francis and Mark Francis) filmed all of the trials using synchronized video cameras. One was in the Holmfield Arms, and filmed RS throwing the die to select the caller for each trial, and then filmed the caller as she made the call. The other cameraman was in Sue's house continuously throughout the series of trials. During the course of a day we carried out 17 trials; Sue was right in 8. This overall success rate of 47% was significantly above the chance level (p = .04). The pattern of results was similar to that in her other series of trials: The scores with her friends were at levels well above chance, with 7 out of 13 correct (54%; p = .02), whereas with Pam Smart she was exactly at the chance level of 25% (see Table 5).

TABLE 5
RESULTS OF THE FOURTH SERIES WITH SUE HAWKSLEY: A TELEPHONE TELEPATHY EXPERIMENT ON JUNE 15, 2001, IN WAKEFIELD, YORKSHIRE

Caller	Trials	"Gayle"	"Jayne"	"Kay"	"Pam"	% right
Gayle	5	2	1	1	1	40
Jayne	5	1	3	1	0	60
Kay	3	0	0	2	1	67
Pam	4	2	1	0	1	25
Total	17	5	5	4	3	47

Trials With Scott Reeves

The second person who took part in a series of videotaped trials was Scott Reeves, who lives in London. His prespecified series of 30 trials took place between June 11, 2001 and January 9, 2002, following Method 3B. He had previously taken part in a series of 11 nonvideotaped trials, with 5 correct guesses (45%; p = .12) (Sheldrake & Smart, in press, Table 5). In the 30 videotaped trials, 12 guesses were correct (40%; p = .05).

Two of his callers were his parents, Brenda and Brian, who live in Southport, Lancashire, 250 miles away; the other two were PS and Carole Macaulay, neither of whom he had met. Our prediction was that he would do better with the familiar people, his parents, than with the people he had not met, Pam and Carole. This turned out to be the case, although the difference was not statistically significant. His success rate with his parents was 8 out of 17 (47%) and with the other two callers, 4 out of 13 (31%).

The data for individual callers show that Scott did better with his mother than with his father, and better with Carole than with Pam (see Table 6). In percentage terms, he was actually more successful with Carole than with his father, although with such small numbers of trials, this difference was not significant. However, his success with his mother was partly due to the fact that he most often said that she was calling, and out of 11 "Brenda" guesses, 7 were wrong. In every case, when making his guess, Scott said he was "not very confident."

TABLE 6
TELEPHONE TELEPATHY EXPERIMENTS WITH SCOTT REEVES, SHOWING HIS RESPONSES TO DIFFERENT CALLERS

Caller	Trials	"Brenda"	"Brian"	"Carole"	"Pam"	% right	*p*
Brenda	7	4	0	0	3	57	.07
Brian	10	3	4	1	2	40	.22
Carole	7	2	2	3	0	43	.24
Pam	6	2	1	2	1	17	.82
Total	30	11	7	6	6	40	.05

Note. Correct guesses are underlined.

Trials With Claire Morsman

Claire Morsman, who lives in London, had previously taken part in a series of 16 nonvideotaped trials, in which she was right 8 times (50%; $p = .03$) (Sheldrake & Smart, in press, Table 5). This prespecified series of 30 videotaped trials were carried out between February 11, 2002 and April 12, 2002, following Method 3B. Her two familiar callers were her mother, Val, who lives in England, and her friend, Eddie, who was overseas during this series of trials, first in Fiji and Australia, then in New York and for the final 3 trials in Ireland. Her unfamiliar callers were PS and Carole Macaulay.

Claire was right in 10 out of 30 trials (33%), not significantly above the chance level ($p = .20$). Her greatest success rate was with her friend, Eddie, with whom she was right in 5 out 9 trials (56%; $p = .05$). She also guessed "Eddie" more often than the other callers, 9 times, and guessed her mother was calling 8 times (see Table 7). Taken together, her success rate with familiar callers was 7 out of 17 (41%) and with unfamiliar callers 3 out of 13 (23%). This difference was not statistically significant.

TABLE 7
TELEPHONE TELEPATHY EXPERIMENTS WITH CLAIRE MORSMAN, SHOWING HER RESPONSES TO DIFFERENT CALLERS

Caller	Trials	"Carole"	"Eddie"	"Pam"	"Val"	% right	*p*
Carole	6	1	3	0	2	17	.82
Eddie	9	2	5	1	1	56	.05
Pam	7	1	1	2	3	29	.56
Val	8	3	0	3	2	25	.63
Total	30	7	9	6	8	33	.20

Note. Correct guesses are underlined.

In 27 trials, Claire gave a rating of her confidence. In 13 she said she was confident or fairly confident, and was right in 5 (38%). In another 13 trials she said she was not very confident, and was right in 3 (23%), practically at the chance level. In one she said she was just guessing, and was wrong. Thus her confident or fairly confident guesses were in fact more

correct than those when she was not very confident or just guessing, but these differences were not statistically significant.

Trials With Thomas Marcovici

Thomas Marcovici, who lives in London, had previously taken part in a series of 10 nonvideotaped trials, in which he was right 7 times (70%; $p = .004$) (Sheldrake & Smart, in press, Table 5). In this series of videotaped trials, following Method 3B, he had three familiar callers, Gabriel, Luke, and Sam, all close friends whom he had known since childhood. His unfamiliar caller was PS.

His overall success rate of 16 out of 28 (57%) was statistically significant at the $p = .0003$ level. (Two of the 30 trials were disqualified, 1 because of an unrelated phone call and 1 because Thomas went off camera during the test session, so there were only 28 rather than 30 valid trials.)

With his familiar callers his success rate was 14 out of 18 (78%; $p = .000004$), and with the unfamiliar caller, 2 out of 10 (20%; *ns*). The difference between the familiar and unfamiliar callers was significant at the $p = .005$ level. He had 100% success rates with both Luke and Sam (see Table 8).

He said "Luke" 6 times, and was right on 5 of these occasions, and said "Sam" 12 times, and was right 7 times. He said "Pam" only 3 times, but was right on 2 of these occasions (Table 8).

TABLE 8
TELEPHONE TELEPATHY EXPERIMENTS WITH THOMAS MARCOVICI, SHOWING HIS RESPONSES TO DIFFERENT CALLERS

Caller	Trials	"Gabriel"	"Luke"	"Pam"	"Sam"	% right	*p*
Gabriel	6	2	1	1	2	33	.47
Luke	5	0	5	0	0	100	.001
Pam	10	5	0	2	3	20	.76
Sam	7	0	0	0	7	100	.0001
Total	28	7	6	3	12	57	.0003

Note. Correct guesses are underlined.

Unfortunately, in most cases Thomas did not give a clear indication of his confidence, instead making remarks like "I think it's Gabriel" or "I'm going to say Sam." However, in 5 trials he said he was confident, and he was right in 4 of these (80%). In the other trials he did not say he was confident, and the success rate was 12 out of 23 (52%).

Summary of Results

The results from all series of trials with all participants are summarized in Table 9. Altogether we conducted 292 videotaped telephone telepathy trials, of which 21 were disqualified because the participants went off camera briefly or received unscheduled calls during the experimental period. Of the 271 remaining trials, participants were correct in 122 (45%), far above the chance level of 25%. The statistical significance of this result is

enormous ($p = 1 \times 10^{-12}$). The 95% confidence limits of this success rate are from 39% to 51%

TABLE 9
SUMMARY OF ALL SERIES OF TRIALS WITH ALL PARTICIPANTS

Participant	Trials	Right	% right	*p*
Series 1 & 2				
SH Series 1	56	28	50	.00005
SH Series 2	40	18	45	.005
Total	96	46	48	1×10^{-6}
Series 3 & 4				
SH Series 3	70	30	43	.0008
SH Series 4	17	8	47	.04
SR	30	12	40	.05
CM	30	10	33	.20
TM	28	16	57	.0003
Total	175	76	43	1×10^{-7}
Grand total	271	122	45	1×10^{-12}

Note. SH = Sue Hawksley; SR = Scott Reeves; CM = Claire Morsman; TM = Thomas Marcovici.

The methods used in Series 1 and 2 were much less rigorous than in Series 3 and 4. Nevertheless, the results were similar under less and more strictly controlled conditions: The average success rates were 48% for Series 1 + 2 and 43% for Series 3 + 4. These success rates were not significantly different statistically ($p = .52$ by Fisher's exact test, two-tailed).

DISCUSSION

The Possibility of Cheating

The average success rate in nonvideotaped trials, described elsewhere (Sheldrake & Smart, in press), was 40%, with 95% confidence limits from 36% to 45%. If the highly significant scores in the unfilmed trials were due to cheating, then scores should have declined dramatically in videotaped trials, in which cheating would have been much more difficult, if not impossible. In fact under the more strictly controlled conditions reported here, the average score was 45% (i.e., higher). This strongly argues against the cheating hypothesis.

The data for the successive series of trials with Sue Hawksley also go against the cheating hypothesis. The first 30 trials were unfilmed and relied on taking her word for what happened, and the word of her callers. Her score was 47%. In the first series of 60 videotaped trials, the telephone was filmed continuously, hence this ruled out any cheating by the false reporting of guesses or by unscheduled calls from potential callers. Under these conditions, her success rate was 50%. Nevertheless, during

these trials she was off camera most of the time during the experimental periods, and hence could conceivably have been receiving messages from potential callers by e-mail or by cell phone.

In the second series of 40 trials, Sue was on camera continuously throughout the experimental period and could not have received telephone or e-mail messages without being observed. On the videotapes we saw no signs of her receiving any such messages. Her score was 45%.

However, as discussed above, in the first two series of trials with Sue, we ourselves inadvertently created a way in which information leakage, if not deliberate cheating, could have occurred. To speed up the progress of our research, we conducted two trials per session. We notified the randomly selected callers before the experimental period began. A flaw in this design was that if the same person had been selected for both calls, when making the first call she could have let Sue know that she would soon be calling again. Or if she let Sue know that she would *not* be calling again, then in the second trial Sue would have had to choose only among three potential callers instead of four. Her chance of success by random guessing would rise from 25% to 33%. For both these reasons, the success rate in the second calls should have been higher than in the first if there had been a leakage of information. In fact there was no significant difference. With first calls the success rate was 47% and with second calls 49%.

There was a further potential problem with Methods 1 and 2. The callers were selected at random before the experimental period began and were notified in advance. They could therefore have communicated with Sue before the camera was switched on. In addition, in the trials conducted by Methods 1 and 2, the videotapes were not evaluated blind, and hence there could conceivably have been recording errors, owing to an unconscious bias.

To avoid these problems, in Method 3, there was only one trial per session, and the random selection of the caller took place only after the camera had been switched on at the beginning of the experimental period. The participant was therefore under continuous observation, and unscheduled communication from the potential callers could be ruled out. All videotapes were evaluated blind by an independent evaluator, Dr. Amanda Jacks, who knew no details about the trials. Any trials in which the participant received unscheduled telephone calls or went off camera were disqualified.

In the third series of trials, carried out with these additional safeguards, Sue's score was 43%. In the fourth series of trials, not only Sue but all four callers were both under continuous direct observation and were videotaped throughout all experimental sessions. Her success rate was 47%.

The remarkable consistency and repeatability of Sue's performance under ever more rigorous conditions weighs very strongly against the cheating hypothesis. So does the fact that all the other participants scored at levels above chance under the rigorous conditions of Method 3, with all videos evaluated blind.

There is, however, one further possibility of cheating that we need to consider. What if the participant had an accomplice not visible on the camera, who gave silent visual signals? This accomplice could have

received secret messages from callers, for example, as text messages on a cell phone, to say whether or not they had been chosen. In fact, an examination of the videotapes showed no signs of participants looking towards a possible accomplice and receiving signals. But a persistent critic could argue that this showed how skillfully the participant, the caller, and the hidden accomplice had devised the deception.

We worked with 4 different participants in these videotaped trials. It would seem very unlikely that all 4 had independently invented and put into practice this same elaborate deception. None of the participants knew each other, and all lived in different parts of England. Nevertheless, it is not impossible.

The only way to be sure would be to have an independent witness observing the participant, in addition to the video camera. This is what we did in our fourth series of tests with Sue Hawksley, in which an independent cameraman was continuously present in Sue's house (see Table 5). He saw no accomplice; there was no one else present except Sue and the cameraman himself. Sue's success rate of 47% was similar to that in her other series. This evidence refutes the accomplice hypothesis.

Of course, what is really needed to settle the question is independent replication by other researchers. By definition that is something we cannot do ourselves.

Comparison of Familiar and Unfamiliar Callers

As in the nonvideotaped trials (Sheldrake & Smart, in press), there was a very striking difference between the participants' success rates with familiar and unfamiliar callers. Taking all the results together (from Tables 3, 5, 6, 7, and 8), with familiar callers there was a success rate of 61 out of 100 (61%), and with unfamiliar callers, 15 out of 75 (20%). With familiar callers this success rate was extremely significant statistically ($p = 1 \times 10^{-13}$); with unfamiliar callers it was not significantly different from the chance level of 25%. The difference between the results with familiar and unfamiliar callers was highly significant (by Fisher's exact test, $p = 8 \times 10^{-8}$). The overall pattern of results and the data for the individual participants are shown in Figure 1.

The remarkably consistent difference between success rates with familiar and unfamiliar callers supports an interpretation in terms of telepathy, which typically takes place between people who share social and emotional bonds (Gurney, Myers, & Podmore, 1886; Schouten, 1982; Sheldrake, 1999, 2003; Stevenson, 1970). It also agrees with the fact that people who experience apparent telephone telepathy mainly do so with familiar people such as best friends, partners, and mothers (Sheldrake, 2003).

There was, however, an inbuilt bias in the participants' responses in that they tended more often to guess that familiar people were calling than that unfamiliar ones were. This effect was most extreme with Sue Hawksley in Series 3, where she never guessed "Carole" at all. All participants showed this tendency to some extent (see Table 10). Nevertheless, this guessing bias could have no effect on the overall results, because all callers had an equal probability of being chosen of 25%.

Table 10
Number of Times Participants Guessed Familiar (F) and Unfamiliar (UF) People Were Calling, Compared With Expected (Exp) Number of Guesses in Accordance With the Probability of Calls From Familiar or Unfamiliar Callers

Participant	F: actual	F: exp	UF: actual	UF: exp
SH Series 3	60	35	10	35
SH Series 4	14	12.7	3	4.3
SR	18	15	12	15
CM	17	15	13	15
TM	27	22.5	3	7.5
Total	136	100.2	41	76.8

Note. The data for Sue Hawksley in Series 3 (SH Series 3) are shown separately from the data for the 1-day trial with filmed callers (SH Series 4). SH = Sue Hawksley; SR = Scott Reeves; CM = Claire Morsman; TM = Thomas Marcovici.

To take an extreme case of guessing bias, imagine a situation in which a participant always said the name of one particular caller. All guesses when this person was actually calling would be right, but all guesses with the other three callers would be wrong, giving an overall success rate at the chance level of 25%. In trials in which there were two familiar callers, if the participant always said the names of these familiar callers, and never said the names of the unfamiliar callers, the success rate with familiar callers would be about 1 in 2, or 50%, if these two names were said at random. The scores with unfamiliar callers would be 0%. Again, if no telepathy were taking place, the overall average would be 25%. In our experiments, this is not what happened. In most cases the success rates with unfamiliar callers were only slightly below the chance level (see Figure 1), and the differences from chance were not statistically significant.

As in our nonvideotaped experiments on telephone telepathy (Sheldrake & Smart, in press), some participants were more successful than others. This is not surprising. People differ in ability in mathematics, music, visual acuity, and all other respects, so individual differences in telepathic sensitivity would seem likely. Also, participants were more successful with some familiar callers than with others; but the bonds between participants and their callers probably differed in quality and strength, and some callers may be more effective than others as telepathic "transmitters."

Effects of Distance

In some of these trials, the callers and participants were hundreds or even thousands of miles apart. The results confirmed our observation in nonvideotaped trials that success seems unrelated to the distance between the caller and the participant (Sheldrake & Smart, in press). In particular, Scott Reeves was most successful with his parents, who were his most distant callers, and Claire Morsman was most successful with her friend Eddie, who was thousands of miles away in most of the trials (see

Table 7). These findings agree with previous research, which has shown that telepathy both under spontaneous and experimental conditions does not seem to fall off with distance (e.g., Braude, 1979; Gurney et al., 1886; Sheldrake, 1999, 2003; Stevenson, 1970).

Participants' Confidence in Their Guesses

In cases in which the participants gave an estimate of their confidence, it turned out that they were indeed more successful when they felt more confident. This effect was clearest with Sue Hawksley (see Table 4) but was also apparent with Claire Morsman and Thomas Marcovici. This suggests the participants were aware when the guessing was being influenced telepathically and when it was not. In some previous ESP research, participants' estimate of their confidence was correlated with success, in other studies it was not (Palmer, 1978).

One way in which success rates in telephone telepathy experiments could be enhanced would be to allow participants to pass if they felt they were just guessing, and only to make guesses when they felt fairly confident. This procedure would also approximate more closely to the real-life situation, in which people do not feel they have to guess who is calling every time the telephone rings.

Conclusions

Our telephone telepathy experiments have given highly significant, repeatable positive results. If other researchers can replicate these findings, tests of this kind could provide strong evidence for the existence of psi, and also open up new possibilities for research into the processes through which it operates.

References

Agresti, A. (2002). *Categorical data analysis.* Hoboken, NJ: Wiley.

Braude, S. (1979). *ESP and psychokinesis: A philosophical examination.* Philadelphia: Temple University Press.

Brown, D., & Sheldrake, R. (2001). The anticipation of telephone calls: A survey in California. *Journal of Parapsychology,* **65**, 145–156.

Gurney, E., Myers, F. W. H., & Podmore, F. (1886). *Phantasms of the living.* London: Kegan Paul, Trench, Trubner.

Hahn, G. J., & Meeker, W. Q. (1991). *Statistical intervals: A guide for practitioners.* New York: Wiley.

Palmer, J. (1978). Extrasensory perception: Research findings. In S. Krippner (Ed.), *Advances in parapsychological research 2* (pp. 59–243). New York: Plenum Press.

Schouten, S. A. (1982). Analysing spontaneous cases: A replication based on the Rhine collection. *European Journal of Parapsychology,* **4**, 113–158.

SHELDRAKE, R. (1999). *Dogs that know when their owners are coming home, and other unexplained powers of animals.* London: Hutchinson.

SHELDRAKE, R. (2000). Telepathic telephone calls: Two surveys. *Journal of the Society for Psychical Research,* **64**, 224–232.

SHELDRAKE, R. (2003). *The sense of being stared at, and other aspects of the extended mind.* New York: Crown.

SHELDRAKE, R., & SMART, P. (in press). Experimental tests for telephone telepathy. *Journal of the Society for Psychical Research.*

SIEGEL, S., & CASTELLAN, N. J. (1988). *Nonparametric statistics for the behavioral sciences.* New York: McGraw-Hill.

STEVENSON, I. (1970). *Telepathic impressions.* Charlottesville: University Press of Virginia.

20 Willow Road
London NW3 1TJ, UK
ars@dircon.co.uk

173 Kay Brow
Ramsbottom
Bury BL0 9AY, UK
pam@telepet.demon.co.uk