

EXPERIMENTAL TESTS FOR TELEPHONE TELEPATHY

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ABSTRACT

Many people claim to have known who was calling before they picked up the telephone, or to have thought for no apparent reason about someone, who then called. We carried out a series of experiments to test whether or not people really could tell who was telephoning. Each participant had four potential callers, and when the telephone rang had to guess who was calling before the other person spoke. By chance the success rate would have been 25%. In a total of 571 trials, involving 63 participants, the overall success rate was 40%, with 95%-confidence limits from 36% to 45%. This effect is hugely significant statistically ($p = 4 \times 10^{-16}$). We obtained similar significant positive effects both when the calls were made at randomly chosen times and when the calls were made at fixed times known to the subject in advance. With 37 participants, we compared the success rates with familiar and unfamiliar callers and found a very striking difference. With familiar callers, 53% of the guesses were correct ($n = 190$; $p = 1 \times 10^{-16}$). With unfamiliar callers, only 25% of the guesses were correct, exactly at the chance level. This difference between the responses with familiar and unfamiliar callers is highly significant ($p = 3 \times 10^{-7}$). We also investigated the effects of distance between the callers and participants. With overseas callers, at least 1,000 miles away, the success rate was 65% ($n = 43$; $p = 3 \times 10^{-8}$). With callers in the UK, the success rate was lower (35%). In most cases, the overseas callers were people to whom the participants were closely bonded. For the successful identification of callers, emotional closeness seemed to be more important than physical proximity.

INTRODUCTION

Seemingly telepathic experiences with telephones are common. Many people have found that for no apparent reason they start thinking about a particular person, then the phone rings and that person is on the line. Or else, when the telephone starts ringing, they have an intuition about who is calling, and turn out to be correct. Usually such calls are from people whom the person knows well.

Such experiences seem to be the commonest kind of apparent telepathy in the modern world (Sheldrake, 2001, 2003; Brown & Sheldrake, 2002). Surprisingly, psychic researchers and parapsychologists seem to have ignored the phenomenon.

Could apparent telephone telepathy merely be a matter of chance coincidence? Perhaps people often have thoughts about others for no particular reason. By chance, these thoughts may sometimes be followed by a telephone call from that person. If people only remember the times they are right and forget the times they are wrong, an illusion of telepathy may be created by a combination of chance coincidence and selective memory.

Alternatively, a person may be expecting a call around a particular time from a particular person, but may be unconscious of this expectation. So when the call comes there is no need to invoke telepathy because an unconscious expectation could explain it instead. The trouble is that unconscious expectations

are elusive. This may be an untestable hypothesis, because if the expectation of a telephone call is unconscious, how can anyone prove that it is really there? And if it is really there, then might this expectation be a *result* of telepathy, rather than an alternative to it?

The best way to resolve these questions is by means of experimental tests that can be evaluated statistically. We have developed a simple procedure in which participants receive a call from one of four different callers. They know who the potential callers are, but do not know which one will be calling in any given test, because the caller has been picked at random by the experimenter. They have to guess who the caller is before the caller says anything. By chance they would be right about one time in four, or 25 per cent of the time. Are they right significantly more often than would be expected on the basis of random guessing? In this paper we describe the results of 571 such tests. The scores were very significantly above chance levels.

We also compared the participants' responses to calls from people they knew well with those from strangers. And we explored the effects of distance, with callers up to 11,000 miles away.

METHODS

Recruiting Participants

In a preliminary experiment, one of us (PS) served as participant and the other (RS) as experimenter. For subsequent experiments, we recruited participants through advertisements in the Part-Time Work section of newspapers or through a recruitment website 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 1-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. Because it was the responsibility of the participants to ensure that their callers would be available, and they did not get paid for a trial if the callers were not, in most cases the callers were indeed available. If the randomly-selected caller was not available, the trial was cancelled.

Some participants were unable to complete the ten-trial series for a variety of reasons, including changes in their personal circumstances, such as starting a full-time job, or because one or more of their callers was unable to continue taking part. Ideally, all participants would have completed all 10 trials, as they had agreed, to avoid the possibility of optional stopping, whereby participants who were not scoring above chance levels might have declined to do more tests. But if this happened at all, it was rare. Most participants who did not complete all 10 trials failed to do so because one or more of their callers was unable or unwilling to continue taking part.

Participants in the first series of experiments were recruited mainly through local newspapers in the north of England. For the second series, most were recruited through *www.hotrecruit.co.uk*. When we wanted to find participants with callers overseas, we advertised in free newspapers aimed at young Australians, New Zealanders and South Africans living in England (*TNT* and *Southern Cross*).

Callers

In our first series of experiments, we asked participants to nominate all four callers. This restricted the number of applicants who were able to participate, because most were unable to find four people to whom they thought they might respond telepathically and who were able and willing to take part.

In our second series, we asked participants to nominate a minimum of two callers, and we supplied the others, who were strangers to the participants. This procedure had the advantage of enabling us to recruit more participants, and it also enabled us to compare their responses to familiar and unfamiliar callers. Most people nominated only two callers, but some nominated three; hence the total number of trials with familiar callers was larger than with unfamiliar callers.

Test Procedures

In all tests, participants used land-line telephones, and of course we required them to use phones without caller identification systems. We avoided the use of mobile phones because all models have built-in caller identification displays.

For each trial, there were four potential callers. The participants knew who they were 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. Each of the potential callers was assigned a number from 1 to 4, and was selected by the thrown die showing one of these numbers. If the die showed 5 or 6, it was thrown again until a number between 1 and 4 came up.

We used three different procedures, involving progressive simplifications. In all cases, when a trial was taking place, the participant picked up the telephone and immediately indicated the person guessed by saying that person's name. The caller then revealed his or her identity, so the participants received immediate feedback.

1 In Method 1, participants took part in 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 because we wanted to test the idea that people can tell who is calling even if the calls are at random times. Participants were not told at what time the calls would be made, although of course they knew that they would occur within the test session.

Test sessions were usually an hour long, beginning and ending at times agreed in advance with participants and their callers. To pick the call times at random, the session was divided 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 10–11 am, the six periods began at 10-minute intervals, starting at 10.10. Thus if the die showed 4, then the test would be at 10.40. The die was then thrown again to select the time for the test with the other caller. If a 1 came up, this was 10.10 am. If the same number came up twice, the die was thrown again.

The experimenter (either RS or PS) telephoned the randomly selected callers in advance, usually an hour or two beforehand, and asked them to call at the time selected. We asked callers to think about the participant for about a minute before calling. We also rang the callers who had not been selected to tell them that they were not involved in this test session.

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. In no cases did callers and participants disagree. The experimenter recorded the result, noting down the date and time of each trial, the caller and the guess.

This method was used in our preliminary experiment and in our first series with 17 participants, for a total of 198 trials.

2 In Method 2, we simplified this procedure by using fixed times for the two trials in a session, for example at 10.15 and 10.30 am. The first caller to be selected was asked to call at 10.15, and the second (with a 1 in 4 chance that it would be the same person again) to call at 10.30. These people were called in advance of the test session and told they had been selected and when to call. Those 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. We used this method for the last 5 participants in our first series of experiments and the first 3 in the second series, who took part in a total of 87 trials.

3 In Method 3, there was only one trial per session. The experimenter (PS) selected the caller at random less than 15 minutes before the prearranged test time. Say, for example, the test time was 2.30 p.m., then the caller was selected at random at 2.15, and notified before 2.20. We used this method with 37 participants in our second series of experiments.

To start with (Method 3A) the experimenter (PS) also called the three people not selected to tell them so. Starting on 15.11.01, this step was eliminated (Method 3B) by telling the callers that if they had not been notified at least 5 minutes 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-minute intervals. The experimenter found out and recorded what the guess had been as in Method 1.

In the second series of experiments, we tested 34 participants using this method, in a total of 268 trials.

Statistics

For the testing of the hypothesis that the proportion of correct guesses would be above the chance level of 0.25, or 25%, we used the exact binomial test (Siegel & Castellan, 1988). The null hypothesis was that the probability of a correct guess is 0.25 or 25%.

For combining the results of different experiments we used the Stouffer method (Rosenthal, 1991).

For the comparison of results with familiar or unfamiliar callers, and the results in first and second trials, we used the Fisher exact test (Siegel & Castellan, 1988).

We calculated exact 95%-confidence limits for the true probability of a correct response as described by Hahn & Meeker (1991).

RESULTS

A Preliminary Experiment

In a preliminary experiment, started in April 1999, PS was the participant and RS the experimenter. PS did not claim to have any special psychic powers, but she had noticed that she sometimes seemed to know who was ringing before she answered the telephone.

There were 5 potential callers, of whom only 4 took part in any given trial, depending on their availability. PS was informed before each trial which 4 callers would be taking part. The potential callers were Angie and Cathie (her sisters), Muriel (her mother), her close friend Polly, and RS. Apart from RS, who was in London, 250 miles away, the others lived within a 10-mile radius of PS's home in Ramsbottom, Greater Manchester.

We conducted 30 trials according to Method 1. In each trial there was a 1 in 4 chance of PS naming the caller correctly by chance. In other words, if PS were just guessing without the help of telepathy, she would have been right about 25% of the time, an average of 7.5 correct guesses in 30 trials. In fact 13 out of 30 of her guesses were correct (43%), significantly above chance ($p = 0.02$).

The results with individual callers are shown in Table 1. The highest proportion of PS's correct guesses (67%) was with RS as caller ($p = 0.01$), who was furthest away.

Table 1

Pam Smart's Responses to Calls from 5 Different Callers (her sisters Angie and Cathie, her mother Muriel, her friend Polly and RS, Rupert). Only 4 callers took part in any given trial, and PS was told in advance which 4 callers were involved (Method 1).

Caller	Calls	Right	% right
Angie	4	1	25
Cathie	3	1	33
Muriel	6	1	17
Polly	8	4	50
Rupert	9	6	67
Total	30	13	43

The First Experimental Series

To find out if these results were replicable, we carried out a series of experiments with 21 participants recruited through local newspapers in the north of England (in Greater Manchester, Lancashire and Yorkshire). We asked all of them to take part in 10 trials, and we then asked some who had

completed 10 trials to do a further 10 or 20 trials. All the experiments in this series involved two trials per session. Most followed Method 1, as in the experiment described above. With 5 of the participants we used Method 2, which involved fixed times for the calls, known to the participants in advance, rather than randomly selected times not known to the participants in advance, as in Method 1.

Nine participants completed the prearranged number of trials, and some agreed to do a second series of 10 trials. Two did a third series as well. As shown in Table 2, these participants took part in a total of 146 trials. In 59 (40%), their guesses were correct. This result is highly significant statistically ($p = 0.00003$).

Out of these 9 participants, all but one made more than 25% correct guesses. The p values for all the participants' results are shown in Table 2. As an alternative way of calculating the significance of the overall result, the individual results were combined by the Stouffer method. By this more conservative procedure, the result was still very significant ($p = 0.001$).

Table 2

Scores of 9 Participants Who Completed At Least 10 Telephone Telepathy Trials Each, Following Method 1. One participant was male (m) and the others female (f).

Participant	Begun	Trials	Right	% right	p
PD <i>m</i>	12.11.99	11	4	36	0.28
JB <i>f</i>	30.11.99	10	5	50	0.08
LP <i>f</i>	18. 1.00	30	14	47	0.008
LE <i>f</i>	9. 2.00	10	3	30	0.47
JP <i>f</i>	6. 3.00	19	7	37	0.18
SH <i>f</i>	9. 3.00	30	14	47	0.008
MJo <i>f</i>	4. 9.00	10	6	60	0.02
MJa <i>f</i>	1.11.00	10	3	30	0.47
GB <i>f</i>	27. 3.01	16	3	19	0.80
Total		146	59	40	0.00003

Twelve of the original 21 participants did not complete the initial 10 trials. They withdrew for a variety of reasons, most commonly because they could not persuade all 4 potential callers to agree to be available at the same times. Some completed only 2 trials. Altogether, these 12 participants took part in 55 trials, and 16 out of 55 guesses were correct (29%). This result is not statistically significant at the $p = 0.05$ level.

It could be argued that the results from all 21 participants should be combined. In this case, the total score was 75 correct guesses out of 201 (37%), a highly significant result ($p = 0.00007$). The 95%-confidence limits of this success rate are from 31% to 44%.

Of the two participants who completed 30 trials, one, LP, had 8 potential callers altogether, of whom only 4 took part in a given trial, depending on their availability (she was, of course, informed in advance which 4 would be participating in each trial). This did not permit a meaningful comparison of her success rates with different callers. But SH had the same 4 callers throughout, and her results with these callers are shown in Table 3. She was much more successful with some callers than with others, which was also the case with PS (Table 1).

Table 3

SH's Responses to Calls from her Friends Gayle, Jayne and Kay, and her Mother Emma (Method 1)

Caller	Calls	Right	% right
Emma	8	5	63
Gayle	8	2	25
Jayne	7	5	71
Kay	7	2	29
Total	30	14	47

Sam Bloomfield's Data

In November and December 1999, at RS's request, Sam Bloomfield, a student at University College, London, carried out some telephone telepathy tests following Method 1. Through an advertisement in a local newspaper in North London (the *Camden New Journal*) he recruited four participants, who nominated 4 callers each. Unfortunately none of the participants was able to complete the prearranged series of 10 trials. Altogether, they carried out 18 trials, and made 9 correct guesses (50%). This positive result is statistically significant ($p = 0.02$).

The Second Experimental Series

In March 2001, we started a second series of experiments, in which the participants were asked to name only two or three out of the four potential callers. We did this for two reasons. First, many people could not find four familiar people able to take part in the trials. Hence it was easier to recruit participants when they had to find only two or three familiar people.

Second, spontaneous telepathic experiences with telephone calls are usually with very familiar people, such as mothers, best friends and spouses. Our hypothesis was that if participants were able to identify callers telepathically, this effect would show up with familiar callers but not with unfamiliar callers.

The unfamiliar callers were PS and CM, who lives in London, or in some cases RS. Although the participants had not met the unfamiliar callers, they knew their names, and of course knew which 4 potential callers would be taking part in a given trial.

With the first three participants in this series, we used Method 2, in which

there were two trials per session at fixed times. With all the other participants we used Method 3, in which there was only 1 trial per session at a fixed time, and the caller was selected at random only 15 minutes before the trial.

As in the first series of experiments, some participants were unable to complete the 10 trials they had originally agreed to do. Sixteen participants did complete 10 trials, and some went on to take part in further trials (Table 4). All 16 of these participants made more than 25% correct guesses. In total, they were right 98 times out of 232 trials (42%), with a very high statistical significance ($p = 7 \times 10^{-9}$).

As shown in Table 4, with these 16 participants, the success rate with familiar callers was 75 out of 138 (54%), and with unfamiliar callers 23 out of 94 (24%), a highly significant difference ($p = 4 \times 10^{-6}$).

Table 4

Scores of 16 Participants Who Completed At Least 10 Telephone Telepathy Trials in Series 2. There were 9 female (f) and 7 male (m) participants. The figures for the total numbers (T) of right (rt) guesses are shown first, together with the p values. Then the figures for right and wrong (wr) guesses are shown separately for familiar (F) and unfamiliar (UF) callers. The first 2 participants in this list were tested by Method 2 and all others by Method 3.

Participant	Begun	Trials	T/rt	p	F/rt	F/wr	UF/rt	UF/wr
EK f	12. 3.01	36	15	0.02	10	10	5	11
AP m	2. 4.01	10	4	0.22	4	2	0	4
FL m	14. 5.01	17	7	0.11	3	6	4	4
SR m	16. 5.01	11	5	0.12	4	2	1	4
YC f	14.11.01	10	3	0.47	3	4	0	3
EL f	19.12.01	11	6	0.03	6	4	0	1
AC m	26.11.01	10	4	0.22	3	2	1	4
DL m	28.11.01	14	6	0.11	6	1	0	7
CM f	11.12.01	16	8	0.03	5	5	3	3
LH f	20. 1.02	30	11	0.11	8	8	3	11
TA f	20. 1.02	17	8	0.04	6	4	2	5
SA f	5. 2.02	10	3	0.47	3	4	0	3
GC f	11. 2.02	10	3	0.47	3	7	0	0
EB f	19. 2.02	10	5	0.08	4	1	1	4
TM m	4. 3.02	10	7	0.004	6	1	1	2
HH m	5. 3.02	10	3	0.47	1	2	2	5
TOTAL		232	98	7×10^{-9}	75	63	23	71
% right			42		54		24	

There were 21 participants who did not complete 10 trials. Altogether, they were correct in 36 out of 90 trials (40%), again a very significant result ($p = 0.001$). Again scores were higher with familiar people: 26 out of 52 correct (50%). With unfamiliar people only 10 out of 38 (26%) were correct. This difference is statistically significant ($p = 0.02$).

Taking the overall results for the second series of experiments, including 16 participants who completed 10 or more trials (Table 4) and the 21 who did not, 37 participants took part in 322 trials and made 134 correct guesses (42%). This overall result is extremely significant statistically ($p = 5 \times 10^{-11}$). The 95%-confidence limits of this success rate are from 36% to 47%. Altogether, 101 out of 190 (53%) guesses with familiar callers were correct ($p = 1 \times 10^{-16}$). With unfamiliar callers, only 33 out of 132 (25%) guesses were correct, exactly at the chance level (Figure 1). This difference between the responses with familiar and unfamiliar callers is highly significant ($p = 3 \times 10^{-7}$).

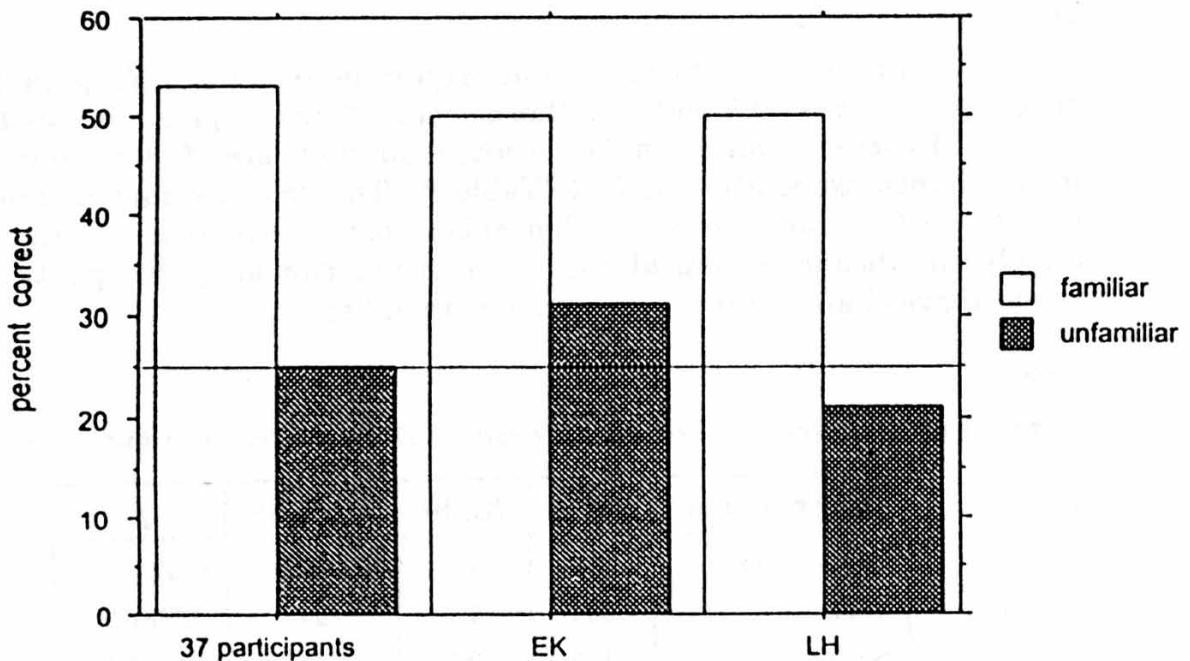


Figure 1. The percentage of correct guesses in telephone telepathy trials with familiar and unfamiliar callers. The data for all 37 participants involved a total of 190 trials. The results for two participants, EK and LH, who took part in 30 or more trials each, are also shown separately. The horizontal line shows the level expected by chance, namely 25%.

Comparisons of Tests with Calls at Randomly-Selected and at Fixed Times

In the trials conducted by Method 1, the times at which the calls were made were selected at random, and the participants did not know when the calls would come. This procedure was designed to simulate the real-life situation, in which people do not usually receive calls at prearranged times. In the other trials, following Methods 2 and 3, the calls were made at fixed times, known to the participants in advance. The use of fixed times simplified the experimental procedure, although it was more artificial. In order to find out what effect this difference in procedure had on the results, we compared the overall results

from Method 1 with those from Methods 2 and 3 (Table 5). There was no significant difference. The success rate was almost identical with both methods: 39.9% correct with random times, and 40.3% correct with fixed times known to the participants in advance. Thus there appears to be no disadvantage in using fixed times.

Table 5

Comparison of Participants' Success in Trials with Calls at Randomly-Selected Times (Method 1) with Calls at Fixed Times Known to the Participants in Advance (Methods 2 and 3)

Method	Right	Wrong	Totals	% right
Random times	79	119	198	39.9
Fixed times	143	212	355	40.3
Totals	222	331	553	40.1

Comparison of Results in First and Second Trials in Two-Trial Sessions

In Methods 1 and 2, participants received two calls during each experimental session, and the callers were notified before the session began. Hence the first caller could conceivably have given the participant some clue as to the identity of the next caller, even though we had specifically requested callers not to do so. For example, when the same caller had been picked for both calls, he or she might have indicated that he or she would be ringing again soon. Or perhaps the first caller might have consciously or unconsciously indicated that someone else would be doing the next call. If so, participants would have been choosing from among 3 potential callers, rather than 4, and thus the chances of success by random guessing would have been higher.

We compared results with the first and second callers in all experiments that involved Methods 1 and 2. The data are shown in Table 6. If for any reason there had been a leakage of information from the first callers, the success rate on the second calls should have been higher than with the first. It was, indeed, slightly higher, 43% as opposed to 35%. However this difference is not statistically significant (by the Fisher exact test, $p = 0.10$)

Table 6

Comparison of Participants' Scores in the First and Second Trials, Following Methods 1 and 2. The data represent totals from 24 participants (including the preliminary experiment with PS). In a few cases the second trial did not take place, and hence there were more first than second trials.

Trials	Right	Wrong	Totals	% right
First	51	94	145	35
Second	60	78	138	43
Totals	111	172	283	39

Only in the case of one participant, LP, was there a striking and statistically significant difference ($p = 0.005$) between the success rate with first and second calls. With the first calls she was right 3 times out of 15, slightly below the chance level; with the second calls she was right 11 times out of 15, a 73% success rate. This raises the possibility of leakage of information in this particular case. But if this participant's data are excluded from the results summarized in Table 2, the overall result is hardly affected: the success rate is 39% rather than 40%, and the result is still very significant statistically ($p = 0.0007$).

In any case, a possible leakage of information from first callers cannot possibly explain the success rates on first calls themselves (Table 6). A total of 51 out of 145 guesses with first calls were correct (35%), significantly above the chance level ($p = 0.003$).

This possible problem did not arise with Method 3, when there was only one call per session. The great majority of the data in Table 4 were obtained with Method 3; only 2 participants were tested according to Method 2 (EK and AP). If the data from these participants are excluded, the results from the other participants show the same percentage success as before (42%), and the effects are still highly significant statistically ($p = 1 \times 10^{-7}$).

Table 7

Comparison of Participants' Scores in Telephone Telepathy Trials with Familiar Callers Overseas and in Britain. Ten of these participants were female (f) and one male (m).

Participant	Overseas callers in:	Overseas		Britain	
		right	wrong	right	wrong
TA f	Nigeria	4	1	2	3
DA f	Yemen	4	2	0	1
HH m	Iceland	1	1	0	1
RH f	South Africa	1	1	1	1
EL f	Greece	2	2	4	1
MM f	South Africa	4	0	0	0
CM f	Australia	4	3	1	3
KM f	South Africa	3	1	0	4
KP f	South Africa	1	1	0	0
MT f	South Africa	2	0	0	1
JW f	South Africa	2	3	0	0
TOTALS		28	15	8	15
% right		65		35	

The Effects of Distance

In order to find out if the distance had any effect on the participants' ability to identify callers, we recruited participants with friends or family members overseas. Table 7 compares their success rates with overseas callers and with familiar callers living in Britain. The overseas callers were at least 1,000 miles away, and in one case the caller was in Australia, 11,000 miles away.

These participants were very successful with overseas callers, with 28 correct guesses out of 43 (65%), an extremely significant result ($p = 3 \times 10^{-8}$). With callers in the UK, the success rate was lower (35%). In most cases, the overseas callers were people to whom the participants were closely bonded, such as mothers and boyfriends, whereas this was not the case with most of the British callers. This result implies that for the successful identification of callers, emotional closeness was more important than physical proximity.

DISCUSSION

Combining the results of all our experiments, and adding in the trials conducted by Sam Bloomfield, there were 63 participants altogether. They made 231 correct guesses in 571 trials, a success rate of 40%, well above the mean chance expectation of 25% (Table 8). The 95%-confidence limits of this result are from 36% to 45%. This effect was robust and repeatable and is hugely significant statistically ($p = 4 \times 10^{-16}$). Not all participants scored at levels above chance, but the great majority did so.

Table 8

Summary of Data from All Telephone Telepathy Trails Described in this Paper

Experiments	Calls	Right	% right	<i>p</i>
Preliminary	30	13	43	0.02
Series 1	201	75	37	0.00007
Series 2	322	134	42	5×10^{-11}
S. Bloomfield	18	9	50	0.02
Totals	571	231	40	4×10^{-16}

These results rule out the hypothesis that apparent telephone telepathy is merely a matter of chance coincidence and selective memory. They rule out the hypothesis that it depends on unconscious expectations about the times at which familiar people are likely to call. They also rule out normal sensory cues: in most cases the callers were miles from the participants, sometimes thousands of miles away.

Possible Artefacts

One possible objection to the data presented in this paper is that some of the participants failed to complete the 10 trials they undertook to do. This raises the possibility of 'optional stopping', whereby participants might stop if their results were poor, and continue if they were good, thus creating artefactual

positive results. In fact most participants who stopped did so because their callers were unable or unwilling to continue. Nevertheless, there could have been an element of optional stopping in some cases. In the first series, the fact that the 12 participants who did not complete all 10 trials (and were thus excluded from the summary of data in Table 2) scored on average only 29% might support this view. But in the second series, the 21 participants who completed fewer than 10 trials had an average success rate of 40%, which does not fit with the idea of optional stopping. Nor do Sam Bloomfield's data, where the 4 participants had a success rate of 50%. Even if there was some optional stopping by some of the participants in the 55 trials excluded from the first series of experiments, this could not explain the highly significant positive results from the remaining 516 trials described in this paper.

The most serious objection to the positive results we obtained is that there might have been a leakage of information from callers to participants through telephone calls themselves, or even by e-mail.

One opportunity for a deliberate or unintentional leakage was present in the trials conducted by Methods 1 and 2. The experimental sessions involved two trials, and the callers knew in advance whether they would be involved in both or only one of these trials. Hence callers in the first trials could have wittingly or unwittingly conveyed hints as to whether they would or would not be calling in the second trial. In this case, the success rate in the second trials should have been significantly higher than in first trials. This was not the case, as discussed above. Only with one participant was there a strikingly higher success rate in the second trials. In any case, in the first trials, where no such leakage of information could have occurred, the participants' success rates were well above chance.

What about deliberate cheating? Perhaps participants and their callers simply lied about the guesses, falsely reporting incorrect guesses as correct. Or perhaps after potential callers had been informed that they had been picked, they rang or e-mailed the participant to pass on this information. Even if callers who knew they had not been selected told this to the participant, the choice would have been narrowed, and hence the chance of successful guessing increased.

The cheating hypothesis is implausible for three main reasons. First, it is very improbable that a large majority of the participants would have cheated. It is perhaps conceivable that a few might have done so, but a few cheats could not have produced the pattern of results we observed in which most participants scored above chance levels.

Second, we know that we ourselves did not cheat, and that the unfamiliar callers involved in Series 2 did not cheat. If some of the familiar callers had cheated by informing participants that they had *not* been selected, the chance of guessing an unfamiliar caller would have been increased. Yet the scores with unfamiliar callers were not above chance levels (Table 4).

Third, as we describe in a separate paper (Sheldrake & Smart, 2003), we carried out further series of experiments in which the participants were filmed continuously on time-coded videotape, starting 15 minutes before each trial. We selected the caller at random only after the filming had started. Hence if the participant had received any other telephone calls or e-mails before the

test call, this would have been observed. The videotapes were evaluated blind by an independent observer, and any trials in which the participant received an unrelated call or was off camera, however briefly, were disqualified. Also, the participants spoke their guess to the camera before picking up the telephone and hence could not lie about the results. The data from these videotaped trials gave extremely significant positive results. The overall success rate was 133 correct guesses out of 292 trials (46%; $p = 1 \times 10^{-12}$). The 95%-confidence limits of this success rate are from 39% to 51%.

One final possibility for a leakage of information remains. In all trials described in the present paper, the participants picked up the telephone before making their guesses. It is therefore possible that they heard characteristic background noises, electronic hisses or other sounds that enabled them to identify the caller. But in our filmed experiments this possibility was eliminated because the participants made their guesses before they picked up the telephone. If background noises and hisses could explain the results in the unfilmed trials, the positive effect we observed should have disappeared in the filmed trials, but it did not.

The videotaped trials show the same patterns of response as the experiments reported in this paper, with scores well above chance with familiar callers, with a success rate of 60% ($N = 102$; $p = 1 \times 10^{-13}$). With unfamiliar callers the success rate was not significantly different from chance.

Telepathy

The results of the experiments reported in this paper do not seem to be explicable in terms of artefacts, information leakage or sensory clues. These findings support the hypothesis of telepathy. The positive scores with familiar callers and chance-level scores with unfamiliar callers (Figure 1) also support this explanation, since telepathy typically takes place between people who share social and emotional bonds, and not with strangers (Gurney, Myers & Podmore, 1886; Stevenson, 1970; Schouten, 1982; Sheldrake, 1999, 2003).

Some people might want to argue that these results support ESP or psi in general, but not telepathy in particular. Perhaps the anticipation of who is calling before picking up the phone is more a matter of precognition or clairvoyance than telepathy. But in this case it would be hard to explain why precognition or clairvoyance did not work with unfamiliar callers, but only with familiar ones. As far as we know, precognition and clairvoyance do not depend on social bonds, whereas telepathy seems to, and hence the difference in results with familiar and unfamiliar callers appears to provide a means of distinguishing between these different kinds of ESP.

An explanation in terms of telepathy would be consistent with the fact that the caller is almost inevitably focusing his or her intention on the recipient of the call. Typically, when A decides to call B, first he or she thinks about B, often in response to some need; then A may need to look up B's telephone number; then A picks up the phone and dials the number. All this time A's intention is directed towards B. Meanwhile, B may start thinking about A, or may have an intuition that A is calling when the telephone rings.

Spontaneous cases of telepathy can occur over distances of hundreds or even thousands of miles (e.g. Gurney, Myers & Podmore, 1886; Stevenson, 1970;

Sheldrake, 1999, 2003), suggesting that telepathic influences do not fall off with distance. However, most experimental research on telepathy has been conducted over relatively short distances, often within the same building or in adjacent buildings, as in the classic card-guessing studies at Duke University, and in most dream telepathy experiments and ganzfeld experiments (for an excellent review, see Radin, 1997). One exception was a telepathy experiment conducted in Russia by L. L. Vasiliev with trials at distances up to 1,700 km (Braude, 1979).

In experimental research on dogs that know when their owners are coming home, we have done tests at distances from 5 to 45 miles, with no indication of any decline with distance in telepathic influence of the owners' intentions on the dogs (Sheldrake & Smart, 1998, 2000a, 2000b).

Using telephones, it is relatively easy to carry out telepathy experiments over any distance up to a maximum of 12,500 miles, at the antipodes. In our trials with overseas callers from 1,000 to 11,000 miles away, there was no suggestion that the telepathic effect fell off with distance (Table 7), in agreement with previous observations and research.

If telephone telepathy occurs, then why are people not right every time? In the experiments described in this paper, the average failure rate was 60%. Participants responded more to some familiar callers than others (Tables 1 and 3). Some participants were more sensitive, others less so (Tables 2 and 4). But even the most sensitive participants with the most effective callers were not always right.

The artificial nature of these tests may have weakened the influence of telepathy. In real life, telepathy does not involve a conscious choice between four equally probable callers, who have no emotional need to call. Nor does it happen on demand. Nevertheless, despite the unnatural conditions imposed by this experimental design, telepathic communication still seems to have taken place to a very significant extent.

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