Horses for Courses: Tests of a psychic claimant

Nicholas Rose and Susan Blackmore

Journal of the Society for Psychical Research, **66,** 29-40, 2002

Department of Psychology
University of the West of England
Bristol

With thanks to the Perrott-Warrick Fund, Trinity College, Cambridge, for financial support

Abstract

Eight ESP experiments were carried out to test the psychic claimant David Spark, between October 1998 and July 2000. DS's main claim was predicting the winners of horse races. Experiments 1 and 2 tested clairvoyance for hidden playing cards and words, but with only a small number of trials. Experiment 3 used a simple computer run 'horse race'. DS made his guesses from home. Experiments 5 to 8 took place in the laboratory and used a computer displayed 'horse race' with 10 coloured counters for 'horses'. DS made predictions in advance and, in later experiments, could bet with toy money on the 'horses'. None of these experiments independently produced a significant number of hits (i.e. the chosen horse won). Overall 210 trials were run in these five experiments, with 21 hits (exactly chance expectation). In one experiment DS correctly predicted the distribution of places but this was not replicated in a second attempt. In the experiments with toy money he did make a small profit. DS was interviewed after each of the later experiments. He was convinced that the results confirmed his psychic powers.

Introduction

In June 1998 a man left a note at our laboratory asking us to test his psychic powers, and in October of that year he came to see us. David Spark was in his late thirties, unemployed and lived locally in Bristol. He said that he spent several hours a day in the bookmakers and could predict the winners of horse races, not by knowing the form of the horses, but by using his psychic powers.

Claims of using psychic powers for gambling are fairly common, though have not often been tested. Among famous cases are Lord Kilbracken who, in 1946 began dreaming the names of winning horses and became racing correspondent of the Daily Mirror, and Peter Fairley, a television science correspondent who had winners' names come to him through coincidences and who subsequently helped set up the well known premonitions bureaux in London and New York. The premonitions bureaux failed to find impressive evidence of the ability to predict winners (Fairley & Welfare 1984), or indeed other events, and the striking cases of Kilbracken and Fairley might be dismissed as inevitable chance runs of luck. Indeed many sceptics argue that if the ability to predict winners were real then race tracks and casinos would not be able to make a living. Radin and Rebman (1998) have studied fluctuations in gambling payout percentages in a casino and provide evidence that average psi ability in the casino may vary with lunar cycle and gravitational tidal forces. Nevertheless, in general, casinos and racetracks do make a living and overall success rates of gamblers are what would be expected by chance. If a psychic claimant really could predict winners by using psi this would be of great interest to psychical research.

Testing psychic claimants is rarely a straightforward undertaking (Wiseman and Morris 1995) and is always time consuming. In deciding whether to agree to test DS we had to take several factors into consideration.

First there is the question of motivation. There is always a chance that any psychic claimant may be a fraud attempting to gain money or fame, or have a desire to trick experimenters for fun or some other personal reason. We could not expect to find out DS's motivation immediately but we could, and did, make an initial assessment. We have previously been approached by several claimants, some of whom immediately ask for money or start talking about how they want to get rich and famous through their abilities. David was not like this. He appeared very open about his claims and ready to answer all the questions we put to him. His motivations appeared to be: first to confirm that he had the abilities he believed he had, and second to prove to the scientific world that psi ability is real.

Second we considered the nature of his claims. We would probably not have agreed to testing him had he claimed macro-PK ability. Macro-PK, such as metal bending or moving objects, is notoriously difficult to test and susceptible to fraud. For example, in the well-known 'project alpha' case (Randi 1983a,b) two young magicians, with the knowledge of the sceptical magician James Randi, tricked the staff at the McDonnell laboratory into believing they had psychic powers, and the discovery of this fraud was blamed in part for the loss of funding to that laboratory. In 1987, Delanoy tested a young man who claimed PK ability and who subsequently turned out to be fraudulent. Detecting these kinds of frauds requires special abilities (such as knowledge of magic) which we do not have. DS, however, claimed only ESP ability which is easier to test and to guard against fraud, and with which we have both had some experience. One of us had previously tested several ESP claimants including a Japanese television personality who claimed ESP ability in the ganzfeld, and the well-known English psychic Chris Robinson (Blackmore 1995).

Third, we had to decide whether working with him would be easy and whether he would be cooperative. A very few special subjects have worked cooperatively over long periods and produced consistently positive results, such as Pavel Stepanek (Pratt 1973) or Malcolm Bessent (Ullman, Krippner & Vaughn 1973). Several special subjects were tested during the SRI remote viewing work, including Ingo Swann, Pat Price and Hella Hammid (Targ & Puthoff 1977), though there is some dispute now about the results of the SRI research (Hyman, 1995; Utts, 1995). However, many psychic claimants turn out to be uncooperative and demanding. For example, Geller made working with him extremely difficult and was frequently found to be using misdirection and conjuring tricks (Marks & Kammann 1980; Randi 1975). Less dramatically, we have previously been approached by claimants who asked to be tested but, when we set up tests for them, did not do what was asked of them or failed to turn up for the testing.

We therefore decided to begin with a very simple distance ESP test which would be easy for us to carry out and would give us some preliminary idea not only of whether DS had any ability but whether he would carry out his side of any tasks we set him. Experiment 1, below, is the first very simple pilot study we carried out with him. We have not divided the experiments into pilots and formal studies since this would be an artificial post hoc distinction. In fact we began with a very simple test, moved onto a slightly more complex one, and then worked through six more experiments in which we tried to optimise the conditions to match his requirements and give him the best possible chance of success if indeed he did have psi ability. We report the results of all these experiments below. During the process of testing and devising the experiments it became clear that DS had many interesting things to say both about the experiments and about his own interpretations of the results. After experiment 4 we decided that we should record these discussions. SB therefore interviewed DS after the completion of each subsequent experiment. These interviews were recorded and transcribed.

DS told us that his first odd experience concerned Hungerford, where he had an odd 'black' experience a couple of months before the multiple shootings there in August 1987. He thought this might be a coincidence and dismissed it as a curiosity. A while later he went to a greyhound track and found that when he looked at the race card one of the dog's names zoomed into focus while the others became dark or blurred, and the dog in question won. In betting shops he had tended to bet on horses according to form, or with his favourite trainer or jockey, but then decided to try just looking at the names, not bothering about anything, and just pick one. This began to work, and by 1993 he was convinced that he had real ability.

SB tried to find out whether this ability meant consistent winnings in the betting shop but he never answered unambiguously. For example, he said "I don't think I've been wrong yet. I don't win in the betting shops, because as I say it's a business and I don't see that my future is taking money off the betting shops, so I'm not actually interested in doing that." "So you don't end up getting a lot of money from it?" (SB). "No, no, no. What normally happens is that I just go in a day and put down £5, £10, £20 whatever, and I lose a hundred pound, and then I just bet £1 each bet and then I come out with a £5 profit that day, or just £1.50 profit." Nevertheless he was convinced that he had real ability to see the winning horses.

The most direct way to test his claims, and arguably the fairest, would be to use actual horse races. This was not viable for two (related) reasons. First, the outcome of real races is not random; it depends on the form and fitness of the horse, the ability of the jockey and so on. Second, the probabilities of each horse winning are all different, vary from race to race, and are unmeasurable, making any statistical test meaningless. Put simply, if DS successfully predicted winners we could never know whether this was because of psychic powers or because of his knowledge of the horses, jockeys, races and weather conditions. However, DS claimed that he could also correctly guess the suits of hidden playing cards, so we agreed to begin with a simple ESP card-guessing task. In testing psychic claimants it is always important to be sure that the test is fair; it must test abilities that the person claims to have and under conditions in which he or she claims to be able to perform.

Otherwise if the claimant fails, he may quite reasonably blame the test or the experimenter. DS said that he could not guess more than one card a day and even then may have some days when he did not feel well enough or in the right frame of mind. We therefore agreed to doing just one guess per week. We discussed where and when to hide the card and agreed on how he would tell us of his guesses.

Experiment 1.

Method

Once a week SB selected a card at random (by shuffling), placed it in the drawer of a filing cabinet in the university and made a record of the selection. The room was always kept locked when no one was working there. During the week DS rang in and told his guess to NR who did not know the identity of the card. NR recorded the guess before finding out the target and informing DS whether the guess was correct or not. DS only claimed to be able to guess the suit (1 in 4 chance) but was encouraged to guess the number as well if he felt like it (1 in 13 chance). 6 trials were run during October and November 1998.

Results

DS correctly guessed the suit 3 times (50% success rate). He guessed the number 4 times but was not correct.

Results

We were all pleased with the outcome of this test, but obviously it was not a good method for further testing, partly because of the time it took (a whole week per trial), and partly because each guess had

a 1 in 4 probability of being correct by chance. The experiment would be more powerful if the probability of a chance hit were lower. In discussing this with DS, he did not think he could manage with card numbers (1 in 13) but suggested using a 1 in 7 probability. He also thought he would do even better if he had something more like what he was used to; a list of names of dogs or horses on which he could concentrate. We designed the next experiment accordingly. By using three separate lists we could run three trials per week, each with a 1 in 7 probability.

Experiment 2

Method

DS selected 7 names of buildings (e.g. flat, maisonette), 7 types of horse (e.g. foal, mare) and 7 kitchen items (e.g. kettle, cooker) to make up three lists of possible targets with a 1 in 7 probability. DS took the lists home with him and then, on a day and time of his own choosing, took them into the betting shop to concentrate on them and make his guesses there, in a familiar environment. Each week SB randomly selected one name from each list (using random number tables) and placed a large printed version of each target word in a prominent place in her house (but invisible from any window). As before DS telephoned in to the university and gave his guesses to NR who did not know the targets. Eighteen trials were conducted over 6 weeks during February and March 1999. DS made guesses for 14 of the trials.

Results

Of the 14 guesses made none was correct.

Discussion

The results of this experiment were disappointing. When asked what he thought went wrong, DS said “I just made a straightforward misjudgement on how I do things.” He explained that doing it once a week and focusing so much on it was too difficult “My ability is there, but because picking the right answer is a very specific thing, I’m not picking it as I should be doing it, therefore I’m always being wrong.” Nevertheless, he said that he did seem to see the answers. “I could see something like ‘maisonette’ very clearly ... just totally clearly and the others blurred and everything like that. It’s got to be ‘maisonette’ and then it’s completely wrong.” We discussed what to try next and DS explained “I need to put it much more as in the bookmaker’s framework, where I’ve got lots of options and I just do whatever else when I’m happy and take that particular choice at that time.” We suggested trying a computer-controlled horse race which might be more similar to his usual betting situation, and DS thought this might work. We therefore decided to incorporate a form of horse race into subsequent experiments.

Experiment 3.

Method

NR wrote the software for a computer based psi prediction task. This presented a simulated horse race with 5 coloured counters representing the horses. Every 100th of a second one horse was picked by a pseudo random number generator. A second pseudo-RNG then moved the chosen horse forward by a random number of pixels. The race took about 2 minutes to run.

Once a week DS telephoned in with his guess at about 11 a.m. NR then ran the race at around 10.30 a.m. the next day. There were 10 trials.

Results

DS obtained 1 hit (2 hits expected by chance)

Discussion

The results of this experiment were also disappointing. In discussion afterwards, DS was concerned that the outcome of the race was determined at the very moment the race was initiated, which he thought would prevent him from guessing correctly. After having the way the program worked explained to him he was happy to continue with the computer tests. However, he said that he would prefer to come into the university to do the tests. By now we were sure that he would cooperate with us fully, that we could easily work with him, and that he really did want to do his best in the tests, so we readily agreed to this. NR wrote an improved version of the program with 10 horses instead of five, and this was used for all the subsequent experiments.

Experiment 4.

Method

Materials. User friendly software was written by NR using a commercial program designed for the construction of simple games. The final program required about 5 minutes training to use. The 'horses' were 10 different coloured counters which could move across the screen. Each was given a name picked by NR from real horses listed in a newspaper. After a brief delay, the 'horse race' was displayed. As before, every one hundredth of a second one of the counters was selected at random and moved a few pixels across the screen. The process was then repeated making the outcome of the race random and unpredictable. DS could record his prediction, or change it, any time up to 30 seconds before the race began. After that it could not be changed.

A consent form was prepared for DS to sign, describing the conditions of the experiment and assuring him confidentiality if he wished (he later said he was happy for his name to be used). Ethical approval was obtained from the UWE Faculty of Applied Sciences Ethical Committee.

Procedure. On the morning of each session DS telephoned at 10.30 to confirm that he was coming in. Generally he arrived at about 11.30 and continued testing, with regular breaks, until about 3.00 or 4.00 p.m. When he arrived the computer program was set up waiting for him. He also brought with him a 'screen' ; a large sheet of card with the names of the horses written many times in columns across the page. DS set this up for himself next to the computer. He then looked at this screen until one of the horses' names went 'black', indicating that it might be the winner, and made his prediction. The race was then observed by DS and NR and the result recorded by the computer program, on a spreadsheet by NR, and on paper by DS. 10 trials were run in each session, with 10 sessions altogether, i.e. a total of 100 trials, between July and November 1999.

Results

DS obtained 6 hits (with 10 expected by chance), and a sum of ranks of 578 (550 expected by chance).

Discussion

The results of this experiment, after many weeks of testing, were again disappointing. However, DS was quite happy with them. In the subsequent interview with SB he explained why. We give his entire comment verbatim because it provides a good idea of the way he thinks about his work and about the probabilities involved.

Well I was very happy with the results that I got, I was totally pleased with them, because one of the things I said was sort of linking some of the numbers up, because the variation, if I was not going to be relaxed as I

can be in the bookmakers, is linking like one, two and ten together; three, four and nine together and five, six, seven and eight together. So you only end up with sort of like three results, but looking at them as a block of how they should be. That's one of the things I did, I mean you can look at them in lots of different ways, but looking at them that way, one two and ten, come up with 39 answers out of a hundred, there was only three horses to that and yet you come up with 39 answers, 39 first places and the five, six, seven and eight horses come up with about 26 I think results, yet those four, of those horses, they only come up with 26, might be 28, certainly less than 30 results. So I was totally happy when I saw the results, the second last session I did, there was still ten more to do and at the end of that I added all the results and come up with a graph and everything and I looked at that and I saw a few things there, and I thought, I'm really pleased with that.

Clearly DS was convinced that the results showed signs of his psi ability and we were not. This was not because of any lack of understanding of probabilities on his part (see e.g. Blackmore and Troscianko 1985, French 1992, for the theory that belief in psi may be due to misunderstandings of probability). DS did indeed make charts and graphs of his results and had a very good understanding of probabilities. We explained that if he thought he was able to predict places other than first place, he should make such predictions in advance. We could then incorporate this into the design of future experiments, but it was no good if he - after the fact - came up with explanations based on patterns observed in the results.

We also discussed the design of the experiment. DS said, "Yes, that's much better." However, he identified various problems. "The ten is, I think, quite a strain. Doing ten each time ... every 15 minutes ... it was, I thought, a bit of a strain. ... I felt it was all disjointed." He also mentioned that he had been sleeping badly and had difficulty relaxing. We discussed both the number of horses in each race and the number of trials. He said that 10 horses is about right, since the average real race has 7 horses. We decided for the next experiment to allow DS to work in his own time, doing as many trials as he liked in a session, and passing on any race if he wished to. The computer only recorded the results of those trials for which he made his prediction in advance. We decided on 20 trials to reduce the pressure on DS.

Experiment 5

Method

The same materials were used as in Experiment 4 but with the following modifications. At the start of each potential trial the program set a random delay between 5 and 30 minutes until the next race, during which DS could rest, walk about outside and eventually make his prediction. He could, if he wished, allow the race to run without making any prediction. There was also a delete button so that he could delete his predictions any time up to 30 seconds before the race started if he decided against making a prediction after all. The computer recorded the results only for races for which he did make a prediction beforehand.

DS usually ran one or two races without making a prediction. He appeared to do this to gauge how well he might be doing during the day, and to relax into the experiment. During the session he often ran further blank trials, either to informally check whether he was making good predictions or to give himself a break from the pressure of making predictions. When he was ready to make a prediction he selected one of the counters on the computer screen and informed NR, who remained in the room with him all the time during the experiment. Sometimes he made a prediction, say, 5 minutes before the race and then changed it, according to his feelings, one minute before the race. Sometimes he cancelled his predictions. 20 trials were run over 3 sessions from January to March 2000.

Results

DS obtained 1 hit (2 expected by chance) and a sum of ranks of 106 (110 expected by chance). The

tables given in Solfvin, Kelly and Burdick (1978) can be used to find the p value, in this case $p > 0.1$.

Discussion

The results were again very poor, but DS was quite content with them. He told SB

"I was sure, doing it in the betting shop, and coming in here I've actually confirmed that there is definitely something there. So I've actually got extra from coming in here to prove that I definitely can do something." Asked what convinced him, he said it was largely the number of last places he got, and added "The first places weren't there, I thought the second places would also be there, if the first places weren't, and there was, there were 14 out of a hundred goes, with twos. Nineteen were tens, what I thought about the five, six, seven and eight, that they would be pushed down because they are simply of no interest to me, you know, there is no stimulus to me to get five, six, seven, eight. I thought those would be pushed down and those were pushed down."

SB then put it to him that he was convinced by results that would not convince a sceptic.

"Well I think it hasn't been proved this century, it hasn't been proved that it's possible to do such a thing, so I think if it is possible to do such a thing, then it is going to be difficult ... but I'm so certain, so positive that I definitely can do it, that it's only a matter of time - that it will be there."

We also discussed the design of the experiment. DS said that he liked the improvements, especially the freedom not to make predictions and to cancel them if he wished. Note that these modifications gave DS more freedom but did not affect the safeguards of the experiment. The experiment was set at 20 trials in advance, and only those races for which he had recorded his prediction in advance (even if he changed it several times before the time was up) were counted as trials. He said that his main problem was not being able to relax properly.

NR suggested that it might help if we gave him either real money or toy money with which to place bets on the horses. DS responded as follows (again we provide his comments verbatim to give some flavour of the way he thinks).

I thought about doing real money, but I couldn't think of any way of doing it with real money, but I don't think, even in the betting shop. I mean I'm not that bothered about the money, so it doesn't have that effect on it, I don't think. But it is something else to think about, because I looked at the odds, the odds from ten are seven to one, so you put on £1 and you get £8 back, and you can actually also do each way. While I am selecting, trying to move them to the ones, but also five to ones as well, trying to keep away from the six to tens, so try and move them closer to the ones as well which, doing each way, you can actually make a selection of being first to fifth as a separate bet, as a place bet, so you can actually do that as well. As well as doing the win bet, you also do a place bet. Then there's also deciding not to do a bet at all, or just do a win bet. And there's also to increase the bet, instead of just doing a £1 win bet, you can also do a £2 win bet. If you start off in the morning and you have a go, but you're not too sure, then you just do a £1 bet, but once I'm into it, then I'm a bit more relaxed and then I can do - if I'm fairly sure that there's a winner there - then move it up to £2, do a £2 bet on that one.

In view of these discussion we decided, in the next experiment, to give DS toy money (Pound notes) to bet on the races. On each race he could bet anything from £1 upwards, allowing us to detect whether his confidence in winning (as measured by the size of the bet) was related to his success in predicting the outcome.

Experiment 6

Method

The same method as before was used but with the following modifications. At the start of the experiment DS was given £40 of toy money and told he could place bets of any amount on each race. If the horse he selected won the race, NR returned the original stake and gave DS prize money at 7:1

(i.e. £7 for each £1 bet). It was hypothesised that DS might feel more confident about some predictions than others and would vary the bets accordingly. NR suggested he might bet £1 when he was not certain, £2 on average, and more if he felt especially confident.

The pace of the testing was also reduced. 20 trials were completed over a total of 6 sessions, with one or more sessions taking place during a week. The experiment lasted for about a month.

Results

DS scored 3 hits (2 expected by chance, $p = 0.323$) and obtained a sum of ranks of 99 (110 expected, $p > 0.1$). He bet £1 on each trial (£20 total stake). At the end of the experiment he had £44; a profit of £4.

Discussion

Since DS only bet £1 on each race it was impossible to determine whether he has been more confident with the predictions that did well. NR suspected that DS was nervous about losing all the money early on, so it was decided to increase the amount available in later experiments.

Experiment 7

Method

The same method was used as before with the following modifications. DS was given £100 of toy money, enough to put a bet of £5 on every prediction if he wished. This way it was hoped to find out whether DS had more confidence for horses that actually won. In addition we asked him to explicitly state any other predictions he might have about his performance, such as getting more last places, or fewer horses coming in places 5, 6, 7, or 8.

The pace of this experiment was slightly faster, with 20 trials runs over one week in 3 sessions.

Results

DS stated that he expected to obtain a minimum of 1 in 5 hits (i.e. 4 hits out of 20 trials), and a maximum of 1 in 3 hits. He predicted that positions 1, 2, 3, 9, and 10 would be above average, with only a few of his predicted horses coming in positions 4, 5, 6, 7 and 8. He expected to obtain a profit of at least 20% of his stake, with a minimum profit of £20.

In fact he scored 3 hits (2 expected, $p = 0.323$) and a sum of ranks of 111 (110 expected, ns). Places 1, 2, 3, 9 and 10 made up 16 of the 20 results (10 expected, $p = 0.012$). DS staked £46 and made a profit of £26. He also varied the amount of money he bet on each race, so it was possible to determine whether he had bet more on the horses that did well. A significant correlation was found between the amount bet and the finishing position of the horse chosen ($r_s = 0.49$, $n = 20$, $p = 0.015$).

Discussion

DS did not obtain a significant number of hits but he did get the distribution of positions that he had predicted. In addition he appeared to bet more money on the horses that did well. This latter result is interesting because it suggests that whilst DS might not be able to pick the winner every time (or even at a level above chance) he might sense when a horse was going to do well and therefore bet more

money on that horse.

In discussion with DS he said that he thought his ability was improving because he was getting used to the set up and the tests. He said he wanted to try to do the same thing again. Given there were two significant findings we decided to try to replicate the experiment (with more trials) to see whether they would be confirmed. We told DS that this would have to be the last experiment because our grant was coming to an end and we would be leaving the university in September 2000.

Experiment 8

Method

The method was the same as for Experiment 7. 50 trials were completed in 8 sessions over a period of 3 weeks in July 2000.

Results

DS made similar predictions. He expected to obtain at least 10 hits, and at most 20 hits out of the 50 trials. He expected positions 1, 2, 3, 9 and 10 to be much higher than the intervening positions. He also predicted that he would make a profit of 50% on his stake, with a minimum profit of £50. He was uncertain whether he would get a significant correlation between the money bet and the position of the chosen horse.

He obtained 8 hits (5 expected, $p = 0.12$) and a sum of ranks of 221 (275 expected). The numbers are too large to use the Solfvin et al tables. A single sample t-test comparing obtained ranks with the expected mean rank of 5.5 gives a significant difference ($t = 2.87$, 49 df, $p = 0.006$).

Positions 1, 2, 3, 9 and 10 only made up 26 of the results (25 expected). However, once again DS made money, finishing the experiment with a profit of £65, from a total stake of £159. There was no correlation between the amount bet and the finishing position of the horse predicted to win ($rs = 0.006$, $n = 50$, $p = 0.97$).

Discussion

Once again DS failed to predict a significant number of winners, but he did get a significantly low sum of ranks, and he made money. His other predictions did not hold up, and there was no correlation between success and the amount of money bet. These results make it hard to be sure whether anything other than chance is operating. After completion of this experiment SB interviewed DS for the last time. She explained that we were not convinced that he had any psychic ability. He remained convinced that he did, although he was disappointed that the results obtained had not matched his own predictions. We thanked him for all his hard work and cooperation over such a long period.

Conclusions

Since Experiments 4-8 all used the same method, the results for the number of direct hits can be pooled for a larger sample. Overall there were 210 trials with a 1 in 10 probability of a hit. DS obtained 21 hits which is exactly the number expected by chance. The overall effect size is therefore zero. However, the sum of ranks is lower than expected; 1115 (mean rank of 5.31) compared with an expected sum of ranks of 1155 (mean 5.5). Unfortunately a p-value cannot be calculated for the overall results because the program used in Experiment 4 only recorded the winning horse and not the final positions of the chosen horses. The sum of ranks was recorded by hand, but not the individual ranks. This was remedied for Experiment 5 onwards.

On the basis of his overall number of hits we should conclude that DS has no psi ability. It appears

that, in spite of his great confidence in his abilities, he was unable successfully to guess the identity of hidden cards or words, or to predict the winner of simulated horse races. We have shown some of the various ways in which he convinced himself that he had demonstrated real abilities in experiments where the results suggested that he had not. This was clearly not because he lacked any understanding of the probabilities involved. Indeed he had an extremely good grasp of odds and probabilities. Rather, he tended to look for, and find, interesting patterns in everything he did, and was convinced that his mood, state of mind, sleep patterns, diet and other conditions all related to these patterns and explained the results he obtained. On the other hand, he did make a little money in all three experiments that used the toy money. So, arguably, there was something other than chance in operation and this may be worthy of further investigation.

At the end of our tests we asked DS whether he would like to do more testing and he said he would. We presented the results at the SPR conference in September 2000 and urged other psychical researchers to continue our work. We would add that DS was extremely cooperative throughout and was very easy to work with. He has expressed a strong interest in continuing to work with psychical researchers and we hope that others may take up the challenge.

References

Blackmore,S.J. 1995 What's in the box? An ESP test with Chris Robinson.*Journal of the Society for Psychical Research*, **60**, 322-324

Blackmore, S.J. & Troscianko, T. (1985). Belief in the paranormal: Probability judgements, illusory control, and the chance baseline shift. *British Journal of Psychology*, **76**, 459-468.

Delanoy, D.L. (1987) Work with a fraudulent PK metal-bending subject.*Journal of the Society for Psychical Research*, **54**, 247-256

Fairley,J and Welfare,S. (1984) *Arthur C. Clarke's World of Strange Powers*, London, Collins

French,C.C. (1992). Factors underlying belief in the paranormal: Do sheep and goats think differently? *The Psychologist*, **5**, 295-299.

Hyman,R. (1995) Evaluation of the program on anomalous mental phenomena. *Journal of Parapsychology*, **59**, 321-351

Marks, D. & Kammann, R. (1980). *The Psychology of the Psychic*, New York, Prometheus Books.

Pratt, J.G. (1973) A decade of research with a selected ESP subject: An overview and reappraisal of the work with Pavel Stepanek.*Proceedings of the American Society for Psychical Research*, **30**, 1-78

Radin,D.I. and Rebman, J.M. (1998) Seeking psi in the casino. *Journal of the Society for Psychical Research*, **62**, 193-219

Randi,J. (1975) *The Truth about Uri Geller*. Buffalo, NY, Prometheus

Randi,J. (1983a) The Project Alpha Experiment: Part 1. The first two years.*Skeptical Inquirer*, **7**:4, 24-33

Randi,J. (1983b) The Project Alpha Experiment: Part 2. Beyond the laboratory. *Skeptical Inquirer*, **8**:1, 36-45

Solfvin,G.F., Kelly,E.F. and Burdick,D.S. (1978) Some new methods for preferential-ranking data. *Journal of the American Society for Psychical Research*, **72**, 93-109

Targ, R and Puthoff, H (1977) *Mind-Reach: Positive proof that ESP exists*. London, Paladin.

Ullman,M, Krippner,S. and Vaughan,A. (1973) *Dream Telepathy, London*, Turnstone.

Utts,J. (1995) An assessment of the evidence for psychic functioning.*Journal of Parapsychology*, **59**, 289-320

Wiseman,R. and Morris,R.L. (1995) *Guidelines for Testing Psychic Claimants*, Hatfield, University of Hertfordshire Press.

Page created 13 October 2003