

## ESP AND THOUGHT CONCORDANCE IN TWINS: A METHOD OF COMPARISON

by SUSAN J. BLACKMORE and FRANCES CHAMBERLAIN

### ABSTRACT

A method is described for comparing the ability of twins, siblings or unrelated pairs of subjects to use either ESP or similarities in their thinking and choice of targets to obtain hits. In one condition (the thought-concordance condition) similarity of thought can yield above-chance scoring, in a second condition (the ESP condition) it cannot. Preliminary results, reported here, suggest a strong effect of thought concordance but not of ESP. The implications for claims of psychic experiences between twins are discussed.

### INTRODUCTION

It is frequently claimed that twins can pick up each other's thoughts, know what each other is doing when separated and even experience simultaneous pains, emotions or other feelings (Newman, 1949; Sommer et al., 1961; Watson, 1981; Zorab, 1978). It has been suggested that the strong emotional bond between twins is conducive to ESP (Sommer et al., 1961) and that identical (monozygotic or MZ) twins might be more prone to ESP than fraternal (dizygotic or DZ) twins (Nash & Buzby, 1965). The claims of psychic experiences between twins could be explained in at least three ways:—

1 There are no effects at all; the claims are based on expectation, errors of memory or misinterpretation of coincidences.

2 The effects are due to thought concordance. For example, twins might tend to think more similarly than other people, make more similar choices when presented with a set of alternatives or respond more similarly to stimuli or events. This could be either because of their genetic similarity or because they have been brought up together, treated similarly or had more experiences in common than other pairs of people. In this case there are effects but not paranormal ones.

3 The effects are paranormal. For example, twins might be able to communicate by telepathy more easily than siblings or unrelated people.

The present method aims to investigate both of the last two possibilities.

Research on ESP in twins has been limited and sporadic. There have been two main kinds of experiments. Physiological studies have looked for corresponding reactions in pairs of twins. For example, Duane and Behrendt (1965) attempted to drive the EEG of one of a pair of twins by inducing alpha rhythm in the other. Two out of 15 pairs of identical twins showed corresponding alpha while none of the unrelated pairs did. However, it was not stated how many unrelated pairs were tested nor were baseline alpha rates or control conditions described. Similar studies measuring skin conductance, heart rate and respiration (Barron & Mordkoff, 1968) and plethysmograph responses (Esser, Etter & Chamberlain, 1967) did not provide evidence of simultaneous responses in twins.

Other studies have used more conventional tests of psi. In 1937 Kubis and Rouke tested six sets of twins calling ESP cards simultaneously while an experimenter looked at a target card. There were no significant correspondences between the subjects' calls (implying no similarity in choices) but two subjects did score highly on cards looked at by the experimenter. The largest study involved 85 pairs of identical twins brought together for the *Frost Programme* on British Independent Television on 17th January 1968. However, the tests used the same targets for all pairs and there were plenty of opportunities for sensory leakage. Even so, null results were obtained (Medhurst, 1968).

In a clairvoyance test Nash and Buzby (1965) compared 11 pairs of identical and 14 pairs of fraternal twins. Overall scores were not significant but they did find (by *post hoc* analysis) a greater similarity in scoring direction between identical twins. This led them to speculate on a genetic basis for the effect, but other studies have not confirmed this suggestion. France and Hogan (1973) tested 10 pairs of siblings, 9 pairs of identical and 7 pairs of fraternal twins for clairvoyance using ESP cards. They looked for thought concordance, in terms of like responses, as well as ESP hits. For like responses a significant difference was found between identical and fraternal twins but not between identical twins and siblings. However, none of the groups scored significantly for ESP and there were no significant differences between groups in ESP scores. Thus thought similarity but not ESP was found. Finally Charlesworth (1975) tested 10 pairs of identical twins and 10 pairs of fraternal twins in a free-response GESP experiment using relaxation and the induction of an imaginary dream. He found that fraternal twins scored significantly higher than both chance and identical twins; in other words, the opposite of what would be expected on the heredity argument. To explain this he speculated that identical twins need to put up barriers from each other to aid individualization.

Generally there seems to be little evidence of either a special ESP relationship between twins or a closer one between identical twins. Only two studies, with opposing results, have looked at thought concordance. Watson (1981) concludes that there is no evidence to support the idea of any parapsychological phenomena involved in the twin bond, and Palmer (1978), after reviewing the literature, concludes "There is no evidence that twins have any special aptitude for 'telepathic' exchange" (p. 149).

If this is the correct conclusion it still leaves open the possible explanations for the claims of psychic experiences between twins. The aim of the method described here was not only to test for ESP but also to see whether thought concordance between twins was greater than between siblings or other pairs of people. If it were it could provide a basis for the claims of psychic experiences between them. The method uses two conditions, (1) in which similarity of thinking can produce hits, and (2) in which only ESP can produce hits. To explore similarities more widely several types of targets were used; pictures, numbers and drawings made by the subjects. The main problem in comparing the two conditions, especially for the free-drawing test, is that different baselines of hits are expected in the two conditions. This is solved by using an internal control.

## PILOT STUDY

A pilot study was carried out for a national Sunday magazine using three pairs of identical twins selected by them. Each twin acted as both sender and receiver in both of two conditions. Targets were pictures, numbers and drawings. Pictures were taken from magazines and duplicate sets were used for the sender and receiver, with a choice of four (MCE 25%). In Condition 1 senders could choose which picture was target; in Condition 2 it was randomly selected for them. The order of tests was randomized. Numbers were the digits 1-10; again freely chosen or randomly assigned. Drawings were made by the senders: either (in Condition 1) they were asked to draw "the first thing that comes to mind" or (in Condition 2) they were told what to draw (taken randomly from a selection of 20 possible items).

The numbers are too small for statistical analysis. However, the results may be worth reporting. For the pictures more hits were scored in the free-choice condition (7 out of 12 or 58%) than the ESP condition (3 out of 12 or 25%; MCE = 25%). For numbers with free choice there were 2 out of 30 hits (7%) and more hits (5 out of 30 or 17%; MCE = 10%) in the ESP condition. In the free-choice drawing test, where the sender could draw anything that came to mind, the number of hits cannot be counted. However, in 3 instances (out of 12) the same object was obviously being drawn and the correspondences were impressive. A complete set of drawings for one pair of twins is shown in Figure 1. By contrast, in the ESP condition 1 hit out of 12 attempts was obtained (8%). It is difficult to assess the success of such drawings. Nevertheless, from this pilot it seemed that the problems of using free-choice drawing may be worth trying to solve in view of the impressive similarities. On the basis of this pilot the main experiment was designed.

## MAIN EXPERIMENT

### *Method*

There were 24 subjects, consisting of 6 pairs of twins (3 monozygotic; 3 dizygotic) and 6 pairs of siblings. They were all students, both male and female, aged between 11 and 20 years. All the subjects except one pair of MZ twins were pupils at Bristol Grammar School. All subjects acted as both sender and receiver, swapping roles half-way through their session. So there were 12 twin pairings and 12 sibling pairings.

The experiment was carried out in classrooms provided by Bristol Grammar School. Two rooms were used at a time, usually adjacent or a short distance apart. Subjects were tested one pair at a time. They were first asked to fill in a questionnaire and the procedure was explained to them. They were then given forms on which to record their guesses and asked to sit in different rooms to ensure sensory isolation. The experimenter stayed in the room with the sender twin or sibling. The subjects then carried out the following three tests. The order of the three tests was systematically varied and targets for the ESP conditions were randomized using random-number tables. There were two conditions for each test and these were done in reverse order for the second subject of the pair. The receiver did not know which condition was being used.

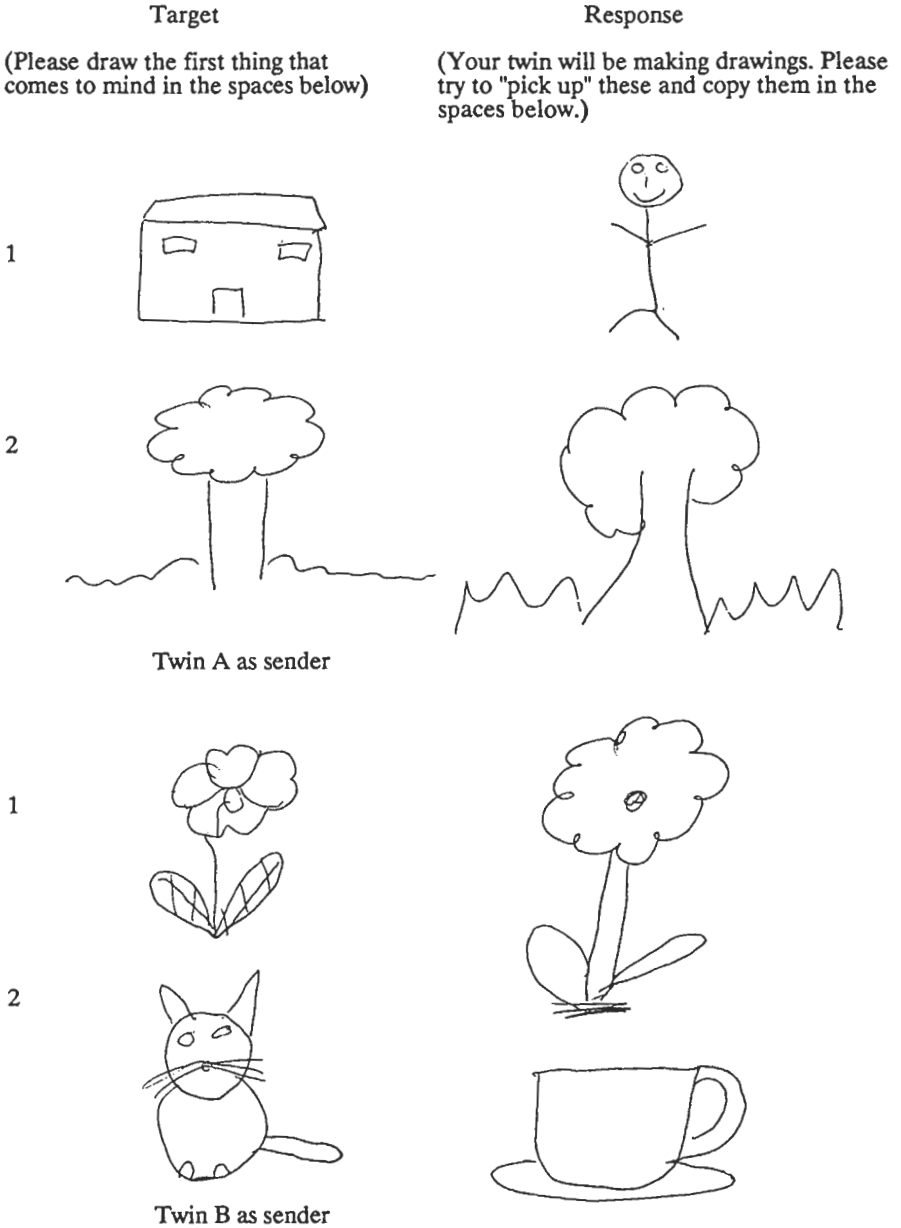


Figure 1. Drawings from the free-response condition: Pilot Study. Complete set of four trials for one pair of identical twins.

### 1. Numbers Test

The numbers 1-10 were used as targets. In Condition 1 (thought concordance) the sender was asked to write down and concentrate on the first number between 1 and 10 that came to mind. The receiver at the same time tried to pick up what number was being thought about and write it down. This was repeated five times. In Condition 2 (ESP) the procedure was exactly the same except that the experimenter selected the number using random-number tables and told the sender which number to concentrate on.

### 2. Drawing Test

This test used drawings that the senders and receivers made. In Condition 1 senders were asked to draw whatever came to mind. They therefore effectively had an infinite number of possible choices. In Condition 2, a list of ten commonly-drawn objects (chosen by consulting drawings made in previous free-response ESP experiments) was used as the target pool and the target picked from these using random-number tables. Afterwards the drawings were judged by an experimenter blind to the condition.

For Condition 1, a hit was scored if the same object was obviously being drawn. Such a crude method could not be used to make a comparison with a theoretical chance baseline, but in this case the most important comparison was between the two conditions and the judge was blind to the condition. In addition an empirical baseline was obtained for the number of hits expected. Pairs of subjects were chosen at random from the data pool and the hits scored as before. This internal control group could then be used for comparison. This method was also used for the numbers test (where it would be expected to be the same as MCE) but was not applicable for the pictures test because of the way the pictures were grouped into sets.

### 3. Pictures Test

Each partner was given four sets of four photographs. The four sets were necessary so that no subject would see the same picture twice. The order of the sets was the same for sender and receiver and was randomly chosen for each pair. In Condition 1 the sender chose which picture out of each set of four to concentrate on. In Condition 2 the sender was given one randomly-chosen picture by the experimenter to concentrate on. In each condition the receiver looked at the set of four pictures and tried to pick out which one the sender had. The procedure was carried out four times in each condition (once for each of the four sets). Randomization was carried out by an assistant, not the experimenter.

## Results

### 1. Numbers Test

Mean chance expectation is 10%. In Condition 1 (thought concordance) the internal control gives a value of 7%. The twins scored higher (13% MZ, 20% DZ, 17% all twins) than this or than MCE and higher than the siblings (5%).

In Condition 2 (ESP) the internal control gives 9% (very close to MCE). The DZ twins scored 13% and the MZ twins scored exactly at chance, i.e. 10% (all twins 12%). Siblings scored 5%.

## 2. Drawing Test

In Condition 1 the internal control group provides a chance expectation of 8%. The siblings scored at exactly this level (8%) while the twins made well over twice as many hits as expected (21% for all twins; MZ 8% and DZ 33%).

In Condition 2 no such difference was seen (MCE 10%; all twins 4%, MZ 0%, DZ 8%, siblings 12.5% and internal control 2%).

The drawing test and numbers test have the same MCE, so the results can be combined for illustrative purposes and are shown in Figures 2 and 3. This shows that results in the thought-concordance conditions are far better for twins (17.9% hits) than other pairs (siblings 5.9%, internal control 7.1%). In the ESP condition, however, there is no such difference (twins 9.5%, siblings 7.1%, internal control 7.1%).

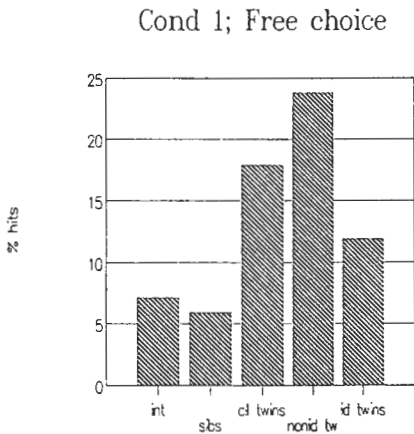


Figure 2. Percentage hits for the five groups: Numbers and Drawing Tests combined. Mean chance expectation is 10%. Condition 1: Free Choice.

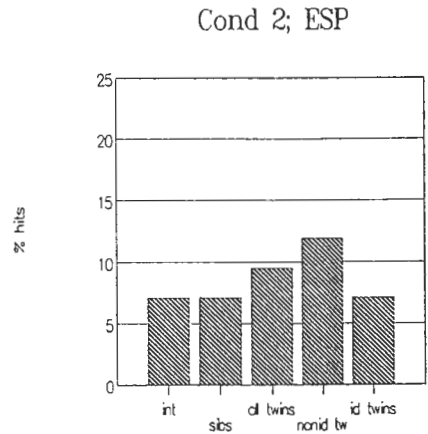


Figure 3. Percentage hits for the five groups: Numbers and Drawing Tests combined. Mean chance expectation is 10%. Condition 2: ESP.

## 3. Picture Test

In Condition 1 (thought concordance) the twins scored nearly twice the number of hits expected by chance (MCE 25%; all twins 42%, MZ 58%, DZ 25%) while the siblings scored just below chance expectation (21%).

In Condition 2 (ESP) none of the groups scored far from chance expectation (all twins 29%, MZ 25%, DZ 33% and siblings 33%). These results are shown in Figures 4 and 5.

The numbers used in this experiment were too small to apply significance tests for the individual tests. However, a simple method for combining all results and comparing pairs of twins with siblings was used which does not depend on the MCE for each condition or test. Each pair for each test was simply scored as obtaining some hits or none. This result reveals that in the thought-concordance condition twins scored significantly more hits than siblings ( $\chi^2 = 4.8$ ; 1 df;  $p < 0.05$ ) while in the ESP condition there is no difference ( $\chi^2 = 0$ ; 1 df).

## Free choice; pics test

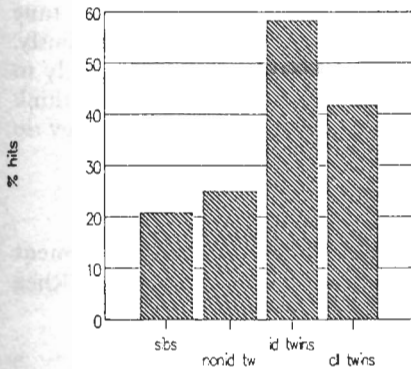


Figure 4. Percentage hits, Pictures Test. Mean chance expectation is 25%. Condition 1: Free Choice.

## ESP cond; pics test

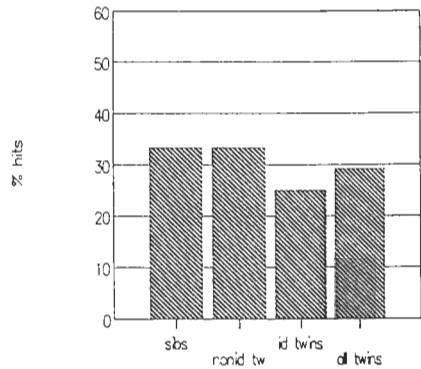


Figure 5. Percentage hits, Pictures Test. Mean chance expectation is 25%. Condition 2: ESP.

If the drawing test results are removed from this comparison (because no theoretical baseline or MCE is available for Condition 1), the conclusion remains the same. Pooling numbers and pictures only, for Condition 1 twins scored higher than siblings ( $\chi^2 = 4.15$ ; 1 df;  $p < 0.05$ ) but for Condition 2 they did not ( $\chi^2 = 0.34$ ; 1 df; n.s.). Numbers of subjects are too small for more detailed statistical testing but the fact that a crude test of low power provides a significant result suggests that the difference is real. In other words, twins do better than siblings when thought concordance can be used but not when they can only use ESP.

## DISCUSSION

This experiment suffers from several shortcomings, including the small numbers of subjects and use of only one experimenter for running the tests. The fact that subjects took part in both roles made the tests more interesting but might mean that expectancies confused the results. The method could be greatly improved by remedying these in future experiments. The method is time-consuming but these preliminary results suggest that it is worth the investment of time to use free-response methods in comparing the effectiveness of thought concordance and ESP.

These results may also give an indication of the size of effect to be expected when inadequate methods in ESP experiments allow thought concordance to produce hits.

Although the numbers of subjects used here are too small for any firm conclusions to be drawn, the method appears to be effective for exploring and comparing ESP and thought concordance in twins. The results suggest that twins can obtain more hits than siblings when thought concordance is a possibility but not when only ESP can be used. This leads to the possibility that thought concordance, rather than ESP, is at work in creating coincidences in twins' lives.

In many everyday situations thought concordance might easily be misinterpreted as a meaningful coincidence, as telepathy or some other form of ESP; for example, when two people suddenly find they are humming the same tune or say the same thing at the same time, or telephone each other simultaneously. If twins have greater thought concordance than others then they are likely to have these experiences more often. This in turn may encourage them to think they have experienced the paranormal or have psychic ability whether they do or not.

#### ACKNOWLEDGEMENTS

We wish to thank the Society for Psychical Research (Research Endowment Fund) for their contribution towards the expenses of this project, and Rhea White for help with the literature search.

*Department of Psychology*  
*University of Bristol*  
*8 Woodland Road*  
*Bristol. BS8 1TN*

#### REFERENCES

- Barron, F. and Mordkoff, A. M. (1968) An attempt to relate creativity to possible extrasensory empathy as measured by physiological arousal in identical twins. *JASPR* 62, 73-79.
- Charlesworth, E. A. (1975) Psi and the imaginary dream. *RIP* 1974, 85-89.
- Duane, T. D. and Behrendt, R. (1965) Extrasensory electroencephalographic induction between identical twins. *Science* 150, 367.
- Esser, A. H., Etter, T. L. and Chamberlain, W. B. (1967) Preliminary report: physiological concomitants of 'communication' between isolated subjects. *IJP* 9, 53-56.
- France, G. A. and Hogan, R. A. (1973) Thought concordance in twins and siblings and associated personality variables. *Psychological Reports* 32, 707-710.
- Kubis, J. F. and Rouke, F. L. (1937) An experimental investigation of telepathic phenomena in twins. *JP* 1, 163-171.
- Medhurst, R. G. (1968) A telepathy test with eighty-five pairs of identical twins. *JSPR* 44, 317-319.
- Nash, C. B. and Buzby, D. E. (1965) Extrasensory perception of identical and fraternal twins: comparison of clairvoyance test scores. *Journal of Heredity* 56, 52-54.
- Newman, H. H. (1949) Telepathy between twins. *JASPR* 43, 108-111.
- Palmer, J. (1978) Extrasensory perception: research findings. In Krippner, S. (ed.) *Advances in Parapsychological Research. 2. Extrasensory Perception*. New York: Plenum Press.
- Sommer, R., Osmond, H. and Pancyr, L. (1961) Selection of twins for ESP experimentation. *IJP* 3, 55-73.
- Watson, P. (1981) *Twins: An Investigation into the Strange Coincidences in the Lives of Separated Twins*.
- Zorab, G. (1978) Reports from other countries. *JSPR* 49, 742-752.