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PRELIMINARY STUDIES OF A
VAUDEVILLE TELEPATHIST

By S. G. SOAL, M.A., B.Sc.

With 13 Illustrations

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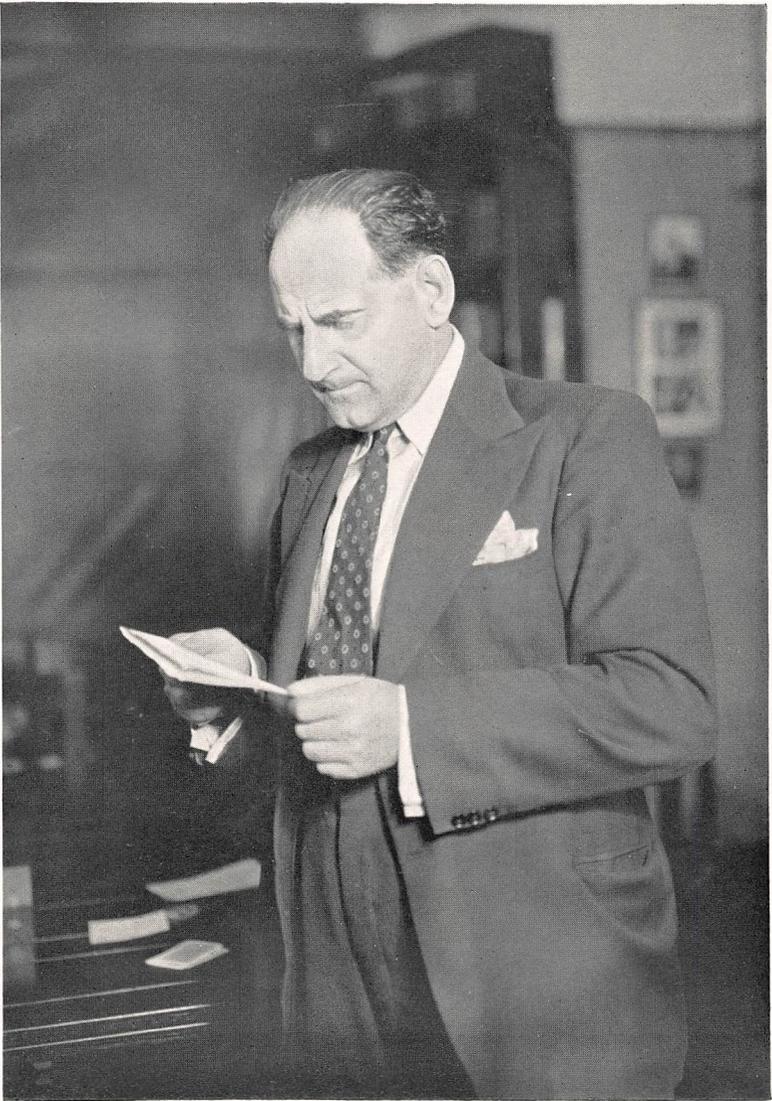
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Marion psychometrizing a letter.

Frontispiece]

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INTRODUCTION

JOSEF KRAUS ("Marion") the subject of this study was born at Prague on 15th October, 1892 and was educated at the Commercial Academy in the same town, where he remained till he was eighteen years of age. While still at school, he claimed to be the possessor of uncanny gifts, a claim which was inevitably derided by his teachers. After leaving school in 1910, he seems to have spent a good deal of the next two years in practising and perfecting himself in his mysterious arts, for two years later he attracted public attention in Prague by undertaking to discover the whereabouts of an object that had been hidden somewhere in the town by a committee of journalists and police. Marion succeeded in finding the object and on the strength of this public success, he was offered an engagement to appear at a concert hall in Prague, where he mystified his audiences by finding objects hidden by them in various parts of the room, by guessing numbers and colours chosen by members of the audience, and by describing events in persons' lives by scrutinising specimens of their handwriting.

So successful were these performances, that Marion was soon inundated with offers of engagements, and during the years 1912-1914 he appeared in various continental towns, such as Vienna, Budapest, Krakow, Berlin, Cologne, etc. The advent of the Great War temporarily eclipsed Marion's meteoric career and the stage telepathist was turned into a soldier who fought for a short time on both the Italian and Russian fronts and also endured a long spell of active service in Albania. Marion was wounded once and finally discharged from the army in June, 1918, owing to ill-health.

Before the Armistice was declared, he had taken up the broken thread of his professional career, giving performances at first in Vienna and other Austrian towns. At the end of the War, Marion visited Germany, and then returned to Czechoslovakia. In the years that followed, he visited France, Italy, Spain, Portugal, Switzerland, Latvia, Esthonia, Turkey, Greece, Roumania, Bulgaria, Holland, Denmark, Norway, Sweden, Lithuania, Belgium and Finland. His first visit to England was in October, 1933, on which occasion he stayed for a few days only, and gave no public performances. In January, 1934, Marion returned to this country to accept a number of public and private engagements, and also to be investigated by the National Laboratory of Psychical Research. At the time of writing this report [August, 1934], Marion is still in England.

The National Laboratory of Psychical Research, which has since become the University of London Council for Psychical Investigation, is in the position of being able to present the first scientific report on the faculties of this remarkable man. It is a little surprising that such an investigation has

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been delayed so long, but the importance of the case can be estimated by the long list of scientific men who have interested themselves in Marion's performance. This list includes such well-known names as Dr. Driesch, Professor Messer, Schrenck-Notzing, Professor Thirring of Vienna, Dr. Fischer of Prague, Bleuler, Winterstein, Sommer-Giessen, Simsa and Professor Julian Huxley. Marion's work in England has excited great interest and a number of societies interested in psychical phenomena have invited him to appear before them. It is worth while mentioning that Marion himself steadfastly discountenances the view that he receives any assistance from the spirits of the dead and insists that all he does is attributable solely to his own powers. Besides being a public entertainer, Marion claims to have aided the police of various towns in the successful tracking down of criminals. In the *London Forum* of June, 1934 (pp. 387-394), there is an interesting account of the way in which Marion's powers led to the conviction of a man who was suspected by the police in the town of Ulm (Württemberg) of the murder of his brother. According to this account, Marion was called in and described how the murder was committed, identifying the arrested man as the criminal. Marion pictured all the circumstances of the crime, and finally described how the victim was attacked from behind with an axe which was afterwards thrown into a pond. The police found the weapon in the spot indicated, and the suspected man then made a full confession.

On this story I shall make no comments. Obviously any serious attempt to discover the truth about it would involve a personal visit to Ulm, and this I am not prepared, at present, to undertake. I merely cite it as a specimen of the many tales that Marion tells in support of his claim to unusual powers.

Marion states that his faculties have improved with practice, but that he had to work for five or six years, before he felt any confidence in his public performances. He assisted the development of his powers by exercises in "thought concentration" and in deep breathing. Marion told me that he possessed no relative who exhibited similar gifts. Further, he has had no experiences that could be classed as "spiritualistic". He has never seen apparitions or psychic "lights", or produced "raps", or conversed with the spirits of the dead by automatic writing or other means. He is sceptical in regard to the spiritualistic hypothesis, but preserves an open mind.

I said just now that it seemed surprising that, hitherto, no scientific report on Marion had been issued. But it is probable that a prohibitive factor was the expense that such an investigation would involve. Performers of the calibre of Marion do not allow themselves to be investigated at the rate of a guinea an hour! Such an investigation as the one recorded in these pages would have been impossible, but for the generosity of Mr. Harry Price. But our hearty thanks are also due to Marion himself who, in the interests of science, has given us many free sittings in the intervals between his public engagements.

Our first impression of Marion was that of a dark-haired, attractive man of early middle age, clean shaven and of sturdy build. His English is good and quite adequate for ordinary conversation, though, perhaps, scarcely sufficient for the expression of abstract ideas and the more delicate nuances of thought. When he is "psychometrising" a letter, he will commence in English, will suddenly flounder in trying to find a word to express his meaning, and will then have recourse to German. In order, therefore, not to

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impede the free flow of his thought, we found it best to allow him to complete a sentence or two in German, which would be immediately translated into English by Mr. Dribbel, who dictated it to Miss Beenham, the note-taker. We found this method quite satisfactory, as Marion's comments on the letters seldom, or never, exceeded 150-200 words. I should explain that, with one or two exceptions, all the notes of our proceedings were taken down in shorthand by Miss Ethel Beenham, who afterwards typed her notes in duplicate, one copy being sent to me, and the other retained in the archives of the Laboratory. For the first three sittings, these notes were perhaps not quite so full as I could have wished, but I hasten to add that immediately she had grasped my exact requirements, Miss Beenham's notes became all that could be desired as regards both precision and completeness. Indeed, from the fourth sitting onwards, Miss Beenham proved herself to be an ideal note-taker for psychical research. That is to say, she fully grasped the object of each experiment and seized on the essential points to be noted. For example, in the card-guessing experiments, she noted the most minute details in the manipulation of the cards by both Marion and myself, and did this not for one guess only, but for every separate guess. But evidence of this painstaking work will appear later in the report. If any specially important detail had to be recorded, I always drew her attention to it.

In this report, I propose to study Marion's work in four sections. Section I deals with "*The Hide and Seek Game*"; Section II with "*The Recognition of Playing Cards*". In Section III, I shall describe "*Other Experiments in Paranormal Perception*", while Section IV will be devoted to "*The Psychometry of Handwriting and Objects*".

ARRANGEMENT OF SITTINGS.

Our original plan was to hold two sittings each week, one on Wednesday afternoons for the purposes of investigation by a group consisting of members of the Council of the National Laboratory and myself, and one on Thursday evenings in order to demonstrate established results to carefully selected "outside" persons, who were interested in psychical research. As a matter of fact, there were only four of these Thursday evening "demonstration" *séances*. The first was held on Thursday, 18th January, 1934, and the last on Thursday, 8th February, 1934. Our chief reason for discontinuing them was that we felt the time for actual investigation under controlled conditions was all too short, and we therefore decided to substitute for the Thursday "demonstration" *séance*, another experimental *séance* with our regular group, to be held on Friday afternoons. Nevertheless, a few controlled experiments were carried out on these Thursday evenings, when persons outside the regular group were present.

Most of the time, however, was devoted to the "psychometrising" of letters and objects brought without any warning by the sitters themselves, and under conditions that were far from ideal. I shall describe these uncontrolled experiments in Section IV, and I shall offer one or two criticisms of the conditions in which they took place.

These additional Friday *séances* for experimental work commenced on 16th February, 1934. Between Wednesday, 17th January, 1934, and Friday, 9th March, 1934, we held two sittings per week, but after the last mentioned

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date, Marion found that pressure of other engagements prevented him from sparing us so much time, and our sittings were reduced to one a week, held usually, on a Friday. After Easter we still continued our sittings, but at irregular intervals. In all, we have had twenty-five sittings, the first of these being held on 17th January, 1934, and the last on 28th July, 1934.

The average duration of sittings 1-16 was from 2-2½ hours, but after sitting No. 16, the sittings seldom lasted longer than an hour.

THE REGULAR SITTERS.

The regular group for experimental work comprised, originally, the following: Mr. Harry Price, Mr. Alex. L. Dribbel, Mrs. A. Peel Goldney, Mrs. Henry Richards, Mr. H. G. Bois, Mr. J. Van Lier; Miss Ethel Beenham (note-taker) and S. G. Soal. At sitting No. 5, on Wednesday, 31st January, 1934, Mr. H. S. Collins was added to the group. He had, however, previously attended one of the demonstration sittings (sitting No. 2 on Thursday, 18th January, 1934). However, by the time we had reached sitting No. 12 (Friday, 23rd February, 1934), Mrs. Henry Richards, Mr. H. G. Bois and Mr. J. Van Lier had permanently disappeared from the group. We may consider, therefore, the permanent nucleus to consist of Mr. Harry Price, Mr. Alex. L. Dribbel, Mr. H. S. Collins, Mrs. Peel Goldney, Miss Ethel Beenham, and myself. The names of every person who attended one or more sittings, and the dates of attendance are given on page 95, as well as the number of sittings attended by each. It will be seen that Mr. Price, or Mr. Collins, or Mr. Dribbel, or Mrs. Goldney occasionally introduced a visitor who took part in a sitting and, on one occasion, I did the same.

I should like to add a few words bearing on the personalities of the members of the regular group. Mr. Harry Price, the founder of the Laboratory and now Hon. Secretary to the University of London Council for Psychical Investigation needs, of course, no introduction. Mr. H. G. Bois, Mr. Alex. L. Dribbel, Mrs. A. Peel Goldney and Mrs. Henry Richards were all members of the Council of the National Laboratory of Psychical Research. Miss Ethel Beenham was Secretary to the Council, and is now Secretary to the University of London Council for Psychical Investigation. Mr. H. S. Collins is a member of the Society for Psychical Research. Mr. J. Van Lier is a well-known artist who is a personal friend of Marion. He attended eight sittings. There was, of course, no secret about the friendship of Mr. Van Lier and Marion, and Mr. Van Lier readily consented to be controlled in experiments in which there was any possibility of his giving any voluntary assistance to Marion. In the experiments of Section I, for instance, Mr. Van Lier was sent out of the room with Marion, except in a small minority of cases which I have discarded or considered separately. Mr. Van Lier is, however, no very considerable factor in the personal equation since he disappears entirely from the scene after sitting No. 11. Finally, there remains myself. Mr. Price very kindly asked me to take charge of this investigation, because I had had a certain amount of experience in the subjects of experimental telepathy and clairvoyance and because, being a mathematician, I could easily acquire any statistical knowledge that might be required. I need only add that I have enjoyed testing the genuine gifts of Marion, and have found him far better worth studying than many of the so-called spiritualistic "mediums".

SECTION I

“THE HIDE AND SEEK GAME”

Marion's most spectacular performance is undoubtedly his demonstration of ability to find objects that have been hidden by his audience. This performance, at first sight, would seem to be a variation of Cumberlandism, or the old "willing game". But Marion's feats are a step in advance of those of Stuart Cumberland, who required to take his agent by the hand. In Marion's case, there is no physical contact whatever between himself and any member of the audience, so that the ordinary theory of unconscious muscular impulsion cannot apply. Even so eminent an authority as M. René Sudre, when discussing Cumberlandism,¹ asks pertinently: "But how are we to explain the case in which the guide has no contact with the guesser, but merely follows him at a distance of a metre?" Sudre goes on to suggest that, in such cases, there may be an element of true telepathy. He also sees in ordinary Cumberlandism the commencement of mental dissociation both in the agent and the guesser, since both are unconscious of the small muscular impulsions given and received. In support of this theory of a slight mental dissociation, he notes the fact that some persons quickly lead the performer to the hiding place, while others entirely fail. In view of M. Sudre's remarks, therefore, it seemed well worth while to endeavour to throw some light on such a performance as that of Marion.

The first theory that naturally suggests itself to anyone who has seen Marion at work with a public audience, is the theory that there is a confederate in the audience who, by means of a "silent" code, indicates to Marion the position of the hidden object. I have no hesitation in rejecting this theory of a confederate as untenable. Quite apart from the results of the present inquiry, I have watched Marion succeed brilliantly before a carefully selected audience comprised of well-known members of the Society for Psychical Research. On one particular occasion which I have in mind, every person present was known to me at least by name and reputation, and most of them were personally known to me. Yet, on this occasion, Marion rapidly located objects hidden in the most difficult places and did it with a precision that precluded mere guessing and without any systematic searching of the room.

At this stage it may be as well to give a general idea of Marion's procedure when he is working with a large public audience. Facing the audience. Marion requests that some lady or gentleman will provide him with a small object, such as a cigarette lighter, or a fountain pen. He holds the object in his hand for a few seconds in order, as he explains, to "sense" it and then hands it back to the owner, with instructions to hide it when he, Marion, has left the room. Before he goes outside the room, Marion explains to the audience that he wants everyone to think hard of where the object is hidden, and of the movements that he, Marion, must make in order to reach the

¹ *Introduction à la Métapsychique Humaine*, pp. 120-121.

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required spot. Marion then asks someone to volunteer to accompany him outside the room to testify that he does not listen at the door, or spy through the keyhole. Marion leaves the room with his guardian, and when the door is closed, the owner of the object hides it usually in some place where it is invisible, e.g., in a lady's handbag, or a gentleman's pocket, or behind the radiator, etc.

Marion is then recalled to the room. He enters the room with his eyes half-closed and his right hand held out in front of his head, the fingers apparently groping in the air. He appears lost in concentration, and oblivious of his audience. Keeping his eyes still half-closed, he walks fairly rapidly round the room. Suddenly, he stops, turns round, puts his hand on his forehead for a second or two, and then walks towards some particular part of the room, or towards some member of the audience. Silently, he will catch hold of a person by the sleeve and make him stand up. Still, apparently, taking no notice of the audience, he will feel over this person's pockets and perhaps produce the object amid applause. Sometimes, however, he will not produce it, but will exclaim: "It is no use my going on for I am certain it is on this gentleman, perhaps in his right boot. Whereupon, the audience will gasp with astonishment, and the gentleman will unlace his boot and reveal the object. If the audience is a fair-sized one, and Marion is in good form, he will often find the hidden object within a minute or two of entering the room, or even within half a minute. Generally, one or two experiments have to be done before he gets into his stride, and this is especially true when he faces a fresh audience. Marion's first experiment savoured more of the systematic search of our *séance*-room by a police-officer, than of the divination of a magician.

We commenced at 2.35 p.m. on 17th January, 1934, and there were present: Marion and his artist friend, Mr. J. Van Lier, Mr. Harry Price, Mr. Alex. L. Dribbel, Mrs. Henry Richards, Mrs. A. Peel Goldney, S. G. Soal, and Miss Ethel Beenham, who took notes. Mr. Price and I sat at the head and foot of the large table shown in fig. 1, while the other sitters were seated round the table. Miss Beenham sat a little away from the table, near the settee, with her note-book on her lap.

Mr. Dribbel gave Marion a cigarette lighter, which the medium held in his hand and then passed to Mrs. Richards, with the request that she was to hide it when he, Marion, had left the room. Mrs. Goldney and Mr. Van Lier then went out of the room with Marion, closing the door, which has no keyhole. Mrs. Richards then hid the lighter under one of the cushions on the settee, everyone in the room, of course, knowing where it was hidden. I then clapped my hands and called "Come in", whereupon Marion and his two guardians entered the room. His eyes seemed half closed and one hand was held in front of him at the level of his head, the fingers seeming to grope in the air. All the sitters, except Miss Beenham, were now seated round the large table.

I will state at once, that it took Marion exactly twenty minutes to find that cigarette lighter. This was Miss Beenham's first record, and it does not profess to describe every minute movement of Marion, but, as it was taken down in shorthand, it gives, I am certain, an essentially accurate account of what happened:

"Marion came in and walked up and down the room once or twice.

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He made Mr. Soal stand up and felt in his pockets; walked to the end of the room (*i.e.*, the end opposite to the window) and felt the bookcases; went to Mr. Soal again and passed his hands over him; Marion then went to other bookcases (*i.e.*, bookcase B, in Fig. 1), and started pulling out one or two books, but he was told (by Mr. Price) that the lighter was not there. He wandered round and round the room, but kept mostly to the top of the room (*i.e.*, the window end). Marion asked Mrs. Richards to think methodically where the object was hidden. Marion went to the settee, and pulled the cushions aside, but did not see the lighter. He again went to Mr Soal, and asked him to stand up. Marion said he had an urge always to go to him (*i.e.*, Mr. Soal). He went to the bookcases on the right-hand side of the room (*i.e.*, bookcases K), and then asked Mr. Dribbel to think of where the object was hidden. Mrs. Richards was then asked to stand up, but Marion left her, and again went to Mr. Soal. Marion suggested that Mr. Dribbel should follow him round the room. Mr. Dribbel did this, and, at length, Marion went to the settee and found the lighter after twenty minutes from the commencement of the test."

Hardly a promising performance! Most of us felt that it was simply a question of perseverance on Marion's part, but Marion told us that his first attempts were always failures, and that he had to get accustomed to the audience.

We now repeated the experiment, using, this time, a pencil belonging to myself. Marion found it after a fifteen minutes' search; that is to say, he had reduced his time by five minutes.

I will quote Miss Beenham's notes:

"17th Jan., 3 p.m.

"Mr. Soal gave Marion a pencil which the medium held in his hand for two or three seconds, and then gave back to Mr. Soal. Mrs. Richards and Mr. Van Lier accompanied Marion out of the room, and Mr. Soal then hid the pencil. The pencil was hidden under the lid of the gramophone (invisible to the audience or anyone inside the room). Marion was called in, and he walked round the room, tapping various objects. He went to Mr. Dribbel and felt his pockets. He walked to the top of the room, then came back to the end near the door. He felt bookcase (D) and then walked round the gramophone. He went back to bookcase (D) again and then walked round the room. He asked the note-taker to move out of her chair, and then took a bag containing pamphlets (standing near the note-taker's table) and searched through it. He said that he was sure the pencil was there, but he stood still for a moment or two and then wandered round the room. He then asked Mr. Soal to follow him round, and went to the bookcases (B) again and felt several books. Apparently not satisfied, he walked to the gramophone, took a book off the lid, opened the lid, and found the pencil inside. This took him fifteen minutes (from the start)."

We then abandoned this particular experiment, and tried some tests with playing cards, and cards with geometrical figures. The results of these card experiments seemed more promising and I shall describe them in Section II. This was fortunate, since had it not been for this success with the cards, I should scarcely have felt inclined to continue the investigation of the hide-and-seek game. As it was, Marion always insisted on beginning every afternoon's work with one or two hide-and-seek experiments, and through

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this, I soon discovered that there was much more in this game than met the eye at a first inspection. It is interesting to note that the first two experiments described above did not succeed till one of the audience began to follow Marion round the room.

Our next *séance* was held the following day (Thursday, 18th January, 1934), at 8.10 p.m. It was our first "demonstration" *séance* and there were present: Mr. Ben Allsop, Lord Bective, Lady Bective, Mr. H. S. Collins, Dr. J. Edgley Curnock, Mr. W. J. Gwyn, Mr. E. Giglio, Mr. Peter Doulton, Mrs. G. Mallous, Dr. Sylvia M. Payne, Mrs. A. Peel Goldney, Mr. J. Van Lier, Major W. Rampling-Rose, Miss Hankey, Miss M. A. Stewart, Mr. Barry Richards, Mr. Harry Price, and Mr. S. G. Soal. Miss Beenham took the notes.

The large table had been removed from the *séance*-room to make room for the larger audience who were seated in rows facing the window, with the exception of Mr. Harry Price, Lord Bective and Miss Beenham who sat on the settee. I stood at a small table facing the audience.

We tried two hide-and-seek experiments on this evening. Marion took ten minutes over the first test and only one and a half minutes over the next. I must expressly state that, in these two experiments, Mr. Van Lier was *not* controlled, but remained in the room with the rest of the audience.

I quote Miss Beenham's notes:

8.10 p.m. Sitting commenced. Mrs. Goldney gave her powder-box to Marion, who held it in his hands for a second or two. He then went out of the room, accompanied by Mrs. Richards. The powder-box was given to Major Rampling-Rose who hid it on top of bookcase B. Marion was then called in, and he asked Major Rampling-Rose to concentrate on the motions he had made in hiding the object, stage by stage. Marion was told that Major Rampling-Rose had hidden the box. Marion then asked Major Rampling-Rose to follow him wherever he went. Marion touched the bookcase on which the box was hidden and then the one next to it. He remarked that the box must be there somewhere. He left the bookcase and went to Mrs. Goldney, and made her stand up. He looked in her bag. He went back to the same bookcase again, and passed his hand over the books. He then asked Mr. Doulton to stand up, and felt over his pockets.

8.17 p.m. Marion now asked if he might try again with Mr. Collins following him round, as he was unsuccessful with Major Rampling-Rose. Mr. Collins followed Marion round. Marion made Mr. Soal get out of his chair [I was then sitting in the front row of the audience, and did not go to the small table till the card experiments began. S.G.S.]. Marion took the chair, stood on it, and found the powder-box on top of the bookcase. This was at 8.20 p.m.

8.21 p.m. For this test Lord Bective gave Marion his cigarette-case to hold for a second or two. Marion then went out of the room with Major Rampling-Rose. The case was then hidden by Lord Bective in Mr. Soal's pocket. At 8.25 p.m., Marion was called in. He asked Lord Bective to think hard of what he did in hiding the case, and to follow him round. Marion walked up and down the front row of sitters, pulled Dr. Edgley Curnock out of his chair, then went to Mr. Soal, felt over him, and found the case. This took only one and a half minutes.

A point of interest in connection with the first of these two experiments

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is that while Marion failed when he was being followed by Major Rampling-Rose, he succeeded very quickly as soon as Mr. Collins began to follow him.

Sitting No. 3 was devoted entirely to experiments with playing cards. At sitting No. 4 (a "demonstration" *séance*) on Thursday, 25th January, 1934, we did only one hide-and-seek test, as I wished to devote the time to the trying-out of a new technique which I shall presently describe. The one test we did is of no particular interest. I will merely add that there were seventeen persons present, excluding Marion. Mr. Van Lier was absent. Mr. R. S. Lambert (Editor of *The Listener*) hid his fountain-pen in his wife's handbag. Mr. Lambert was sitting next to his wife on the settee. Marion, on being called in, found the pen in one and a quarter minutes, with no one following him round the room.

At our fifth sitting on Wednesday, 31st January, 1934, a rather interesting incident occurred. We did two experiments only on this afternoon, as we were engaged on the new technique. There were present Mr. Harry Price, Mr. H. G. Bois, Mrs. Henry Richards, Mrs. A. Peel Goldney, Mr. H. S. Collins, Mr. Alex. L. Dribbel, Mr. J. Van Lier, Mr. S. G. Soal, and Marion. Miss Beenham was taking notes.

2.40 p.m. Mr. Bois gives a cigar cutter to Marion, who holds it for a moment. Marion goes out of the room, accompanied by Mr. Van Lier. The cigar cutter is hidden in Mr. Dribbel's left sock [under his spat]. Marion is called in, and he asks Mr. Bois to think hard of the movements he made when hiding the object. Marion walks up and down, and then goes to Mr. Soal. He makes him stand up, and feels in his pockets. Marion then goes to Mr. Dribbel and makes him stand up. He feels over his pockets. He then stands in Mr. Dribbel's place. He makes Mr. Van Lier stand up. He again goes to Mr. Dribbel, and stands in the place he was occupying a moment ago. Marion then goes to Mr. Bois and feels through his pockets very rapidly. He again goes to Mr. Dribbel, and says that he knows that the object must be hidden on Mr. Dribbel's *left* side, and that it is a waste of time to go on. Mr. Dribbel then undoes his spat, and takes out the cigar cutter from his left sock. Marion took four minutes to find this."

I should add that, when the cigar cutter had been hidden inside Mr. Dribbel's sock and the spat buttoned up, I was satisfied before Marion entered the room, that there were no external signs that any object was secreted under the spat. This experiment made a considerable impression on us. Marion had seemed so sure that the cigar cutter was somewhere on Mr. Dribbel's left side, though he had not actually felt the spat at all.

The next experiment, though successful, was not nearly so interesting:

"2.47 p.m. Mr. Price gives Marion his knife. Marion holds it for a second or two, and then goes out of the room with Mr. Van Lier. Mr. Price then hides the pocket-knife behind a picture which is leaning against the glass doors of bookcase B (its lower edge resting on the horizontal projection at the base of the doors). Marion is called in at 2.48 p.m. He goes to a bookcase (K) on the opposite side of the room, and then walks away again. But he goes back to the same bookcase (K). He then looks under the cushions of the settee. He walks round the room, goes to the gramophone and passes his hands over it. He then goes to bookcase B. He makes Mr. Bois stand up, and quickly passes his hands over him, then goes to Mr. Price and makes him stand up. He again goes to Mr. Bois and feels quickly over his pockets.

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Marion pulls Mr. Dribbel out of his chair, but is not satisfied, goes to Mr. Soal, makes him stand up and feels over his pockets. He then goes to bookcase B and suddenly takes the picture away and finds the knife. This took him five minutes (from the moment of entering the room)."

Marion was then asked why it is he takes longer at one time than another to find a hidden object. He replied that in a big audience it is much easier because everyone thinks hard and is anxious for him to find it. He said that we subconsciously held back.

In addition to the experiments I have described in detail, we did eight similar tests. Of these, two were carried out on 1st February, both being successful in times four minutes and three minutes, respectively. Two more were done on 7th February, and in the first of these Marion gave up the attempt after four minutes; the second was successful in four minutes nineteen seconds. On 8th February, three experiments were carried out. In the first experiment, Marion gave up after five minutes; in the second he did not actually succeed in finding the object, but located very accurately the corner of the room in which it was hidden; the third experiment was entirely successful and occupied one minute thirty seconds. The last of these eight experiments was done on 16th February, and succeeded in one minute twenty-four seconds from the instant of entering the room.

It will be seen, therefore, that there has been a considerable reduction in the time required to locate the object from the twenty minutes and fifteen minutes taken by the first two experiments.

It was obvious that such crude experiments as the above were of little use for any serious investigation. The definitions of success and failure for example, were quite arbitrary. If Marion succeeded in finding the object within, say, a couple of minutes, it might merely mean that he was lucky enough to hit on the right spot fairly early in his search, and that if he took eight minutes, he was unlucky. In order, therefore, to put the experiments on a statistical basis, I purchased of Messrs. Kettle, of New Oxford Street, six rectangular, rigid boxes of polished tin, provided with lids of the same material. These boxes measured 5.3 inches long by 3 inches broad by 1.6 inches deep and the lids had an overlap of half-inch. The weight of each combined tin and lid was just over $3\frac{3}{4}$ ozs. We first used these tins at the fourth sitting on Thursday, 25th January, 1934. As, however, our procedure was not completely standardised till sitting No. 7 on Wednesday, 7th February, I propose to ignore the fourteen preliminary experiments which were carried out previous to 7th February. My reasons for this are as follows. On the three dates on which the preliminary tests with the tins were carried out, we frequently varied the object that was hidden in the tins and, further, we did not always distribute the six tins in precisely the same parts of the room. Actually we obtained eight first-try successes in these fourteen experiments, but I ignore them altogether, since from sitting No. 7 onwards our procedure never varied.

This standard procedure in the case of what I shall call Series A was as follows:—The six positions were numbered 1 to 6 in clock-wise order round the room. No actual numbers, however, were marked on the tins or positions. These positions are shown in the plan of the room given in Fig. 1. No. 1 position was located anywhere on the left-hand half of the settee. No. 2 was at the window end of the large table immediately facing my seat, and easily

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within reach of my hand when seated. No. 3 was on the *floor* close to the centre of bookcase B. No. 4 was on the ledge in the centre of bookcases F, G, at a height of 35 inches from the floor. No. 5 was on the top of the gramophone lid at a height of 47 inches from the floor. No. 6 was on the small note-taker's table (not at present in use) at a height of 27 inches above the floor.

The approximate bee-line distances between the consecutive positions are shown in Fig. 2. It will be seen that the six positions form the vertices 1, 2, 3, 4, 5, 6 of an irregular hexagon of which the shortest side is 3 feet 7 inches and the longest 10 feet 10 inches.

The rules of this new "hide and seek" game which were impressed upon Marion and the sitters were as follows: The object that was hidden was a lady's *unscented* small white handkerchief. I bought several of these handkerchiefs at Woolworth's stores, but sometimes Mrs. Goldney or another sitter provided the handkerchief. I always carefully tested this handkerchief for scent, both before and after Marion had handled it. The six tins with lids on were placed in their respective positions. The handkerchief was given to Marion to hold for a few seconds, and he then handed it back to me. Meanwhile the sitters were seated around the large table as shown in Fig. 1, Mr. Price and I always occupying the positions marked P and S. Marion now left the room. If Mr. Van Lier was present, he left the room with Marion, except on one or two occasions that have been carefully noted. The door was carefully closed. I then took from my pocket a die and shook it in the tin box (closed) that was immediately in front of me. I showed the number recorded by the die to Miss Beenham, who recorded it in her notebook. I never spoke aloud this number, but merely pointed with my finger to the position in which the handkerchief was to be hidden—this position of course corresponding to the number shown by the die. I then walked round the room, with the handkerchief in my hand, now and then stopping at a tin, taking off the lid and putting it on again. When I arrived at the tin into which the handkerchief was to be put, I carried the tin to the middle of the floor, put in the handkerchief, and closed the lid, being careful to see that no portion of handkerchief was visible. I then carried the tin back and laid it down gently in its position. I then took the lids off another tin or two, and replaced them. Assisted sometimes by Mr. Price or another sitter, I next gave every tin a *random* push of a few inches. I put the die in my waistcoat pocket or sometimes held it in my clenched hand, but never let it lie exposed on the table. We next took our seats, and I clapped and shouted "Come in". Now, as regards the sitters, it was understood that they were to follow Marion with their eyes in all his movements round the room, willing him to go to the right tin, but that they were not to give any obvious indications, such as a nod of the head, or other sign. Complete silence was to be preserved by the sitters while Marion was in the room. As regards Marion himself, he was told that he was not to touch any tin unless he meant to lift it and open it. If the tin which he opened contained the handkerchief, the experiment was, of course, finished, but if the tin did not contain the handkerchief, he was to open one of the five remaining tins. After he had opened the second tin, the experiment was finished whether this tin contained the handkerchief or not. As soon as Marion entered the room, or usually before his entry, Miss Beenham laid her stop-watch on the number shown in her note-book, or else turned the page.

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She was, in this respect, extremely careful, as I verified constantly. Miss Beenham sat, usually, in the position R at the large table shown in Fig. 1, or sometimes a little back from the table in a position R₁. The same handkerchief was used for the next experiment and was again held by Marion for a few seconds. The lids of the tins that had been opened by Marion or ourselves were not replaced till Marion had again left the room. The tins were always replaced in their *original* positions; *i.e.*, the tin that had been on the gramophone in experiment 1 was replaced on the gramophone in experiment 2 and so on with the other tins. The tins whose lids had been removed as well as the tin in which the handkerchief was to be hidden afresh, were carried to the centre of room, and the lids then replaced. One or two other lids were taken off and replaced, and when all the lids were on and the handkerchief hidden, each tin was given a random push of a few inches. This last item was "*de rigueur*" and never on any single occasion omitted. It was not considered necessary for Marion to be accompanied outside the room in this series, since the door has no keyhole, and the number thrown by the die was never spoken aloud. In subsequent series, I have accompanied Marion scores of times outside the room, and I can say without hesitation that nothing whatever could be learned of any use by listening at the door.

When Marion enters the room, his eyes seem half-closed and often his left hand is on his fore-head, and his right held out in front at the level of his head. He walks rapidly round the room, sometimes in a clockwise, but usually in a counter-clockwise direction. As he comes to each tin, he pauses slightly and waves his right hand once or twice above the tin, bringing it as a rule (in this series) to within two inches of the lid, but without touching the lid. He passes on doing the same at each tin. All the time he does not appear to look at his audience. When he has completed the circuit of the tins, he will stride across to one particular part of the room, say, towards the gramophone. Then, perhaps, he will hesitate with his right hand waving slightly above the tin (No. 6) on the note-taker's table, and his left hand above (No. 5) on the gramophone. Suddenly, he seizes the tin, say, on the gramophone, and opens it. The handkerchief is not there. He immediately seizes the tin (No. 6) on the note-taker's table, opens it and pulls out the handkerchief. This hesitation between two tins which are in the same part of the room, *e.g.*, Nos. 5 and 6, Nos. 4 and 5, or Nos. 2 and 3, was a constantly recurring feature of the performance. It was especially noticeable in the case of Nos. 5 and 6, the two positions that were nearest together, and it suggested strongly that what Marion succeeded in getting first was the general *direction* of his objective. Sometimes, for example, he would remain almost the whole time at one end of the room (say round about Nos. 4, 5, 6) and finally choose one of these three. At other times, it would soon be clear that he had made up his mind that the handkerchief was to be chosen from Nos. 1, 2, and 3.

Sometimes, however, he would make up his mind that the choice lay between two tins that were far apart, for instance, between Nos. 2 and 4. He would walk across the room from one to the other waving a hand gently over each. Then suddenly, without hesitation, he would walk over to one of the two and open it. In such cases, he generally found the handkerchief. If the reader will turn to Plate 1, he will see Marion in a typical posture of hesitation between Nos. 5 and 6.

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ANALYSIS OF SERIES A.

In all, 104 experiments were done in this series. In every one of these experiments, a die was used to decide into which tin the sitters were to put the handkerchief, or to concentrate their minds upon in the event of no handkerchief being used. This use of the die, of course, obviates the possibility of our preferences for certain positions coinciding with those of Marion. I must explain here that eight experiments (the series 10c) are included in these 104 experiments in which the general conditions being the same, no handkerchief was used, but the die being cast as usual, the sitters were simply asked to think of the empty tin and will Marion to open it. There are also included in this series, three experiments (Sitting 10b) in which the handkerchief was hidden in a tin, but in such a way that no one in the room was consciously aware of the particular tin in which it was hidden. In these three experiments, the die was cast and the sitters asked to think of the corresponding tin and will Marion to open it. These sub-series 10b and 10c are discussed separately in due course. In 10a [Table I] the conditions were the ordinary conditions prevailing throughout the series.

TABLE I. SERIES A.

No. of Sitting	No. of Experiments	No. Correct First Try	No. Correct Second Try	Sitters Present (abbreviations)
7	6	4	1	b, c, d, g (m), p, s, v.
8	7	4	2	b, r, P, S (m), M, s, v.
9	6	4	1	b, c, d, B, g (m), r, s, v, p
10 (a)	5	5	0	b, C, C ¹ , d, g (m), s, p.
(b)	3	1	0	ditto
(c)	8	4	2	ditto.
11	10	4	3	b, c, d, g (m), r, p, s, v.
12 (a)	8	5	1	T, b, p (m), s.
(b)	6	1	0	b, s (only), (m).
13	14	7	3	b, *d, d ¹ , g, p, s (m).
14	11	2	4	b, c, F, F ¹ , p, s (m).
15 (a)	8	1	0	b, c, D, J, g, p, s (m).
(b)	10	2	5	b, c, g, p, s (m).
20	2	2	0	b, c, B ¹ , H, g, p, s (m), d.
TOTALS ...	104	46	22	

*d, d¹. In Sitting 13, Mr. Dribbel and Mrs. Dribbel joined us after the *third* experiment.

Abbreviations: (b) = Miss Beenham, (c) = Mr. Collins, (d) = Mr. Dribbel, (d¹) = Mrs. Dribbel, (g) = Mrs. Goldney, (m) = Marion, (s) = S. G. Soal, (p) = Mr. Harry Price, M = Marion's secretary, (r) = Mrs. Henry Richards, (v) = Mr. Van Lier, D = Dr. Dingwall, C = Mr. Chance, C¹ = Mrs. Chance, J = C. E. M. Joad, B = Mr. Bois, P = Miss Paul, S = Lord Sands, B¹ = Herr Beiber, H = Mr. Ellic Howe, F = Dr. Gordon Fleming, F¹ = Mr. S. W. Fleming, T = Mr. Grant Taylor.

STATISTICS OF TABLE I (SERIES A).

In N trials the most probable number of guesses which are correct *first try* is N/6 and since whenever the experiment failed on the first try we insisted upon a second try, the most probable number of guesses correct second try is also N/6, assuming only chance to operate.

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The most probable number of first tries correct and second tries correct taken together is, therefore, $N/3$.

In order to estimate what are the odds against getting a given number r or more successes in a given number of trials N , where p is the chance of success in a single trial and $q = 1 - p$ is the chance of failure in a single trial, we have only to use the elementary statistical formula that the chance of getting r or more successes in N trials is:

$$\frac{N!}{r!(N-r)!} p^r q^{N-r} \left[1 + \frac{N-r}{r+1} \left(\frac{p}{q}\right) + \frac{(N-r)(N-r-1)}{(r+1)(r+2)} \left(\frac{p}{q}\right)^2 + \text{etc.} \right]$$

In our experiments $p = \frac{1}{6}$; $q = 1 - \frac{1}{6} = \frac{5}{6}$, so that $\frac{p}{q} = \frac{1}{5}$ when we are considering only first try successes.

But if we lump the first and second tries together, we must take $p = \frac{1}{3}$, $q = \frac{2}{3}$. Referring to table I, we see that Marion's friend (v) took part in twenty-nine experiments and reference to Miss Beenham's notes shows that Mr. Van Lier went outside the room with Marion at all experiments except those in sittings No. 7 and No. 8, *i.e.*, except in thirteen experiments. Further it appears that in Sitting 8, Marion's secretary was allowed to remain in the room. This was the only occasion on which Marion brought his secretary to the *séance*, and I allowed him to remain because I was under a misapprehension as to his identity. To be on the safe side, therefore, we must discard the thirteen experiments of Sittings 7 and 8.

This leaves us with a total of ninety-one experiments of which thirty-eight were successful at first try, and nineteen at the second try. Considering only first tries, we put $N = 91$, $r = 38$; $p = \frac{1}{6}$, $q = \frac{5}{6}$ in our formula and find after some laborious computation, that the chance of getting thirty-eight or more successes in ninety-one trials is 1.41×10^{-8} , *i.e.*, about one in seventy-one millions nearly.

It is, therefore, incontestable that, under the conditions of Series A, Marion succeeds definitely in finding the handkerchief.

An inspection of Table I shows some rather remarkable runs of success in short series of trials at individual sittings. For example in the series 10a, Marion finds the handkerchief first try five times in succession. The chance* of getting such a run is, of course, 1×6^{-5} , *i.e.*, 1 in 7,776. On the other hand, it will be seen that in the series 12b in which all the sitters had departed except Miss Beenham and myself (b and s), there is only one success in six trials.

SERIES B.

Our next step was to discover whether Marion was able to locate the handkerchief in the case where no person present was consciously able to identify the particular tin in which it was hidden.

The procedure was as follows:

Marion held the handkerchief for a few seconds, and then left the room, the door of which was carefully closed behind him. The six tins with their lids on were placed on the sitters' table. The light proof blind having been drawn, the electric light was switched out. I then thoroughly shuffled the tins in the dark and opened one at random, put the handkerchief in this tin loosely so that it would not shake about, and replaced the lid. I next dropped

* *i.e.* Chance for an isolated group of five trials.

PLATE I



Marion making a "trial" of a tin box as to whether it contains a hidden object.

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the tins into a large linen bag, turned on the light and shook up the bag. I then rapidly went round the room quickly withdrawing a tin, and placing it in one of the six positions. At the end of this operation, I can say without hesitation that *consciously* I had not the least idea where the handkerchief lay. Still less could the other sitters have known where it was. We then seated ourselves round the table in the usual way, and recalled Marion to the room. I should explain that in this series Marion was taken into our confidence as to the changed nature of the experiment, and told exactly what the conditions were. Throughout our investigation, I have as far as possible avoided practising petty deceptions upon Marion, as being likely to alienate his sympathies from us. I felt it was much better for him to know exactly what we were attempting to discover, and I told him that if we found his gift failed under certain conditions, that was quite as valuable to us, from a scientific standpoint, as were the successful experiments and no discredit whatever to him. Marion cheerfully accepted the new conditions, though I soon found that failure bewildered and depressed him. When Marion entered the room, it was soon obvious that he had lost much of his former confidence. He hesitated longer over the individual tins, and sometimes took as long as $2\frac{1}{4}$ minutes instead of the customary 30-60 seconds before he opened a tin. On several occasions, he confessed that the experiment was now very difficult and that the "feeling" he got was "very faint". Sometimes after opening the wrong tin, he would say "I was only guessing; I got no real feeling at all". It was a difficult ordeal for Marion, and he preserved an admirable good humour that impressed us all very favourably.

This series of experiments was carried out at Sittings 9 and 10. The names of the sitters present can be seen by a reference to Table I (Series A). In this series there was, of course, no need for Mr. Van Lier to leave the room in Sitting 9, as he had done in the previous (Series A) experiments on the same date. A reference to Table I, Sittings 9 and 10 (a) shows also that Marion's faculty under "Series A" conditions was working particularly well on these two days. It can therefore hardly be urged that his total inability to find the handkerchief was due to a temporary lack of form. We did nine experiments at Sitting 9 and ten experiments at Sitting 10. I have only recorded here "first-try" guesses for the reason that on several occasions, Marion was so discouraged that he would not open a second tin after the first had been found empty. At Sitting No. 10 the conditions were the same as in Sitting No. 9 with the slight variations that instead of using the linen bag, I put the tins in a large sack provided by Mr. Price, and that Mr. Chance assisted me in distributing the tins in their places round the room, in order to save time.

The results of the experiments are as follows:

TABLE II. SERIES B.

<i>No. Sitting</i>	<i>No. of Experiments</i>	<i>No. Correct First Try</i>
9	9	1
10	10	1
TOTALS	19	2

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Marion, therefore, is correct only two times out of nineteen guesses which is, of course, no better than a chance result.

It was quite unnecessary to continue this series as my subsequent experiments showed that Marion was unable to succeed under much less stringent conditions than these.

SERIES C.

We next performed three short series of experiments in order to show that Marion's holding of the handkerchief was not a necessary condition of success.

In the first series C (i) the conditions were the same as in Series A with one innovation. I had purchased six small white ladies' handkerchiefs at Woolworth's which I kept in various pockets. I handed one of these to Marion to hold as usual, but when he had left the room, instead of putting this handkerchief in the tin indicated by the die, I stowed it away in an *empty* pocket and then placed the first of the remaining five handkerchiefs in the tin. This was done unknown to Marion and in the first ten experiments, unknown to the other sitters. When Marion opened the tin and perhaps found a handkerchief inside, I removed it from the tin and put it back in a pocket which I specially noted. I then handed Marion for the next experiment the *same* handkerchief that he had held before and again returned it to the empty pocket. I then put handkerchief No. 3 in the tin indicated by the die, and proceeded in this way until my five handkerchiefs were run through. The point is that Marion always held the *same* handkerchief, but that this handkerchief was never put into a tin. For the remaining five experiments on this date I ran through the five handkerchiefs again, always letting Marion hold the original handkerchief and never putting this into a tin. As a guarantee of my good faith, I had, previous to this series of experiments, prepared a statement describing what I intended to do, and when the ten experiments were finished, I showed this statement to the other sitters. The reason why I practised this innocent deception upon the sitters was that I was afraid that if any of them believed strongly in the virtue of the "sensing" of the handkerchief, they might themselves lose confidence if they were aware that another handkerchief had been substituted and so, by their demeanour, betray to Marion that a little trick had been played upon him. At the end of this series of ten, I told Marion also what I had done. He did not appear at all perturbed.

At Sitting No. 12, I did an additional five experiments under the same conditions, the only variation being that this time I took the sitters into my confidence and told Marion after the series was finished.

The results were as follows:

TABLE III. SERIES C (i)

No. of Sitting	No. of Experiments	No. Correct First Try	No. Correct Second Try
11	10	4	3
12	5	2	1
TOTALS ...	15	6	4

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If we lump first and second tries together, we have ten successes as against the five predicted by chance.

The chance of getting ten *or more* successes in fifteen trials is about 1 in 117. This is not a high significance, but when we consider it in conjunction with the results of Series C (ii) and C (iii), it assumes its true importance. Series C (ii) and C (iii) are essentially the same experiment except for a slight difference in procedure.

In Series C (ii) the conditions were the same as in Series A, except that no object was hidden in the tin. When Marion had left the room, I shook the die and directed the sitters to concentrate their minds on the particular tin that corresponded with the number shown by the die. Marion was then recalled and tried to pick out the tin we had chosen. This series was carried out at Sitting No. 10 and the list of sitters can be found in Table I, 10 (c).

In Series C (iii) the six tins were shaken up in a bag exactly as in Sitting No. 9 [*Series B*], so that the sitters were ignorant as to which tin contained the handkerchief. However, when Marion had left the room, I directed the sitters to concentrate their minds on a particular tin and to will that Marion should open that tin. In the first six of this series (Sitting 9), I did not actually throw the die, but merely chose any tin that I fancied. In the remaining three experiments (Sitting 10), I chose the tin by a throw of the die, this being, of course, the more correct procedure. Marion was let into the secret after the first experiment of the series (Sitting 9).

We may conveniently consider the two series C (ii) and C (iii) together.

TABLE IV. SERIES C (ii) AND C (iii).

<i>Series</i>	<i>No. of Sitting</i>	<i>No. of Experiments</i>	<i>No. Correct First Try</i>	<i>No. Correct Second Try</i>
C (ii.)	10	8	4	2
C (iii.)	9	6	4	1
	10	3	1	0
TOTALS	...	17	9	3

Taking into account only "first-try" successes, the chance of getting nine *or more* correct guesses in seventeen trials is nearly 1 in 1511, which is quite a significant result.

We may reasonably conclude that the "sensing" of the handkerchief is not a necessary condition for success.

SERIES D.

We had now to enquire into the part played by the audience in Marion's performance. For my preliminary experiments, I procured a number of thick blankets. I first left the room with Marion and led him into the office, where I engaged him in conversation. While I was outside the room, Mr. Price shook the die and hid the handkerchief (which Marion had previously held for a few seconds) in the tin indicated by the die. He then put the die in his pocket and took his usual place at the table with the other sitters. For the list of sitters, see Table I, Sittings 11 and 13. Each sitter, including Mr.

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Price, then put a blanket over his head and shoulders, so that his hands, arms, head, shoulders, chest and trunk were completely covered. In each experiment the sitters, unless instructed otherwise, pressed a finger upon the meatus of each ear so as to close the passage of the outer ear. Marion and I were then called in and, on entering the room, Marion exclaimed in a loud voice "Now I commence!" I remained uncovered, moving about in such a way that I could see all Marion's movements, and standing so that he should never get his back between myself and a tin box. This required unremitting vigilance on my part. Once or twice Marion's hand appeared to graze the lid of a box, and I had to warn him to be careful.

After the first few experiments, the sitters told me that they were generally conscious of the particular part of the room where Marion happened to be by the vibration of the floor under his feet. The stopping of the ears, therefore, was not really effective. We did, in all, twenty-eight experiments: nineteen at Sitting No. 11 and nine at Sitting No. 13. A reference to Table I will show that at both these sittings, Marion was in quite good form when working under Series A conditions. But the blankets seemed on both occasions to stop the run of success immediately. On both occasions we began with "Series A" work. Of the twenty-eight experiments, there were eight in which I asked the sitters *not* to stop their ears, but still to keep hands and arms covered. The results of the whole series are given below.

TABLE V. SERIES D.

<i>No. of Sitting</i>	<i>No. of Experiments</i>	<i>No. Correct First Try</i>	<i>No. Correct Second Try</i>
11	19	3	4
13	9	1	3
TOTALS ...	28	4	7

This result is obviously what chance might produce. In the eight experiments (last eight in Sitting 13) in which the sitters' ears were unstopped, there was one success at first try and three guesses right at second try—a result which again could easily be the work of chance.

I was not, however, satisfied with this experiment, since it seemed quite possible that the sitters were able to follow roughly Marion's movements about the room and that, on the other hand, Marion was perhaps able to notice twitchings, etc. of the blankets from which he might draw certain conclusions.

My next plan was to have an opaque white curtain rigged up across the window end of the *séance*-room. This curtain was suspended from a line at a height of 7 feet 3 inches from the floor and the trace of which is marked in Fig. 1. Dr. E. J. Dingwall happened to be present on the first day on which this curtain was in position, and he verified that when the light-proof shutter of the window was down, the movements of legs, arms, etc. of a person standing behind the curtain were invisible to anyone inside the room. The curtain was made in two sections and at intervals there were tiny peep holes, $\frac{1}{4}$ -inch in diameter, so that a person behind the curtain could watch Marion's

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movements inside the room, without any part of his own body being visible to Marion. The light was, of course, switched on in the room, but there was no electric light behind the curtains. My idea was that the sitters should stand behind the curtain and watch Marion through the chink holes as he perambulated the room, willing him to open the tin which contained the handkerchief.

We began this new series (Series E) on 7th March (Sitting 15) at 5.8½ p.m. Mr. Price who had taken part in the earlier experiments, had gone home and there remained only Mrs. Goldney, Mr. Collins, and Miss Beenham, who was taking notes. I will quote one of Miss Beenham's records—that of the second experiment:

"5.13 p.m. Marion and Mr. Soal go out of the room. The die is shaken, and two turns up. The handkerchief is put in the tin on the table. We all go behind the curtains again, and call Marion and Mr. Soal in. This time we watch through the various chink holes in the curtains, and will Marion to go to the right tin. Marion holds his hand above each tin for some seconds. He then takes the tin from the gramophone, and then the tin from the floor. Both wrong. Time 1 min. 35 secs."

When I entered the room, I moved about so that I always had a clear view of the tin over which Marion was passing his hand. The records show that in the eighth experiment on this date, Marion slightly touched one of the tins, but this experiment as well as experiment No. 4 has to be discarded on other grounds owing to a mistake which it is of value to record. After entering the room at experiment No. 4, I noticed, on reaching the end of the table just behind Marion, that the die had been left on the table by either Mrs. Goldney or Mr. Collins, and further, that the die was recording 4. Marion passed round the window end of the sitters' table, passed his hand above tins 1, 6, and 5, and then proceeded to the tin, No. 4, on the bookcase, opened it and found the handkerchief. Now, there is not the slightest doubt that Marion knew the order in which the tins were numbered round the room, because at the previous sitting, after we had finished our afternoon's work in order to create a diversion, I undertook to play the *rôle* of Marion who remained in the room with the other sitters. Whether Marion had consciously or unconsciously observed the number 4 on the die is, of course, immaterial; it must be assumed that he was guided to the right tin. This was an unfortunate lapse on the part of my fellow-experimenters: Mr. Price and I had never failed to conceal the die as a matter of routine. The incident was repeated at experiment 8, when I again found the die on the table and again registering the number of the tin which contained the handkerchief. Marion, who must have seen the die before I could pick it up, again opened the correct tin, No. 4. My only course was to discard these two experiments altogether. The unpleasant shock of these mishaps taught me two things. First, I had been foolish to go on with the experiments after Mr. Price's departure, especially after an afternoon's work which had probably tired my co-operators. In the second place, it showed me the cleverness of Marion who, consciously or unconsciously, would instantly avail himself of the slightest lack of vigilance on our part. In the succeeding experiments, Mr. Price took charge of the die, putting it invariably in his pocket.

We continued this series at Sitting No. 16, on Friday, 9th March, 2.39 p.m. On this occasion, there were present: Mr. Harry Price; Mrs. A. Peel

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Goldney; Mr. H. S. Collins; Mr. Maitland-Woolf; Mr. Rathmell Wilson; Mr. S. G. Soal, Marion, and Miss Ethel Beenham, who took notes.

The procedure was as follows: After each experiment, the six tins were taken from their places, opened, and carried to the central table where they were placed beside their corresponding lids. The light-proof shutter of the window was drawn, and the light switched on in the *séance*-room.

The curtain with its chink holes was rigged up as in the preceding sitting. Marion held the handkerchief for a few seconds and then accompanied me outside the room. I took him into the office and engaged him in conversation. Mr. Price shook the die and Miss Beenham registered the number in her note-book. The handkerchief was allowed to cool for a minute or a minute and a half. It was then placed in the tin which belonged to the number shown by the die, and allowed to cool again. The lids were then placed on the tins and they were conveyed to their respective positions. Mr. Price put the die in his pocket and all the sitters, including, of course, Miss Beenham who was provided with a seat, took their places behind the curtain. They then shouted and clapped loudly as a signal for Marion and myself to enter the room. We entered, and as Marion moved, so I changed my own position in such wise as always to have the tin in view over which he was holding his hand. The sitters meanwhile were also watching Marion through the chink holes and willing him to open the right tin.

Under the new conditions Marion's tactics were observed to have considerably changed. Instead of walking rapidly round the room with a slight downward wave of the hand over each tin as he passed it, Marion stopped at every tin and spent sometimes 20-30 seconds waving his open palm up and down above the lids. I stood near and watched him carefully. Sometimes he brought his hand down gently till it was almost grazing the lid. I had to warn him to be careful not to touch the tin. Marion said that unless he was allowed to put his hand close to the lid (though not touching) he would be unable to succeed. He said he had lost all confidence in himself. When I accompanied him outside the room after each experiment, he seemed anxious and worried. He was keeping an independent record of his successes and failures on a piece of paper, and I did my best to encourage him by praising him whenever he got a "second try" right and by telling him that he would soon get used to the new conditions. He would anxiously count up his successes and ask me if the result were beyond chance yet.

At the ninth experiment, as Marion passed the tin (No. 2) on the table, he was observed to touch it, and on stooping over the tin on the floor, he was seen to touch this tin (No. 3) also. He then went back to the table, and opened the tin (No. 2) and found the handkerchief. I was, of course, unable to prevent this and had no option but to neglect the experiment altogether. At the end of experiment No. 9, Mr. Price came out from behind the curtain and talked very gravely but calmly to Marion, telling him that if he were allowed to touch the tins, he, Mr. Price, would also be able to succeed in locating the handkerchief. In order to demonstrate this to Marion, Mr. Price went behind the curtains with Miss Beenham, while I put the handkerchief in one of the six tins and replacing the lids, shuffled the tins on the table.

Mr. Price then came out from behind the curtain, and *lifted* each tin from the table in turn. The first did *not* contain the handkerchief, but the

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second did. After this warning, Marion kept his hand at a distance of two or three inches from the lids, but in experiment No. 15, he seemed to graze lid of No. 2, but as this tin did not contain the handkerchief, I have retained the experiment, counting it as a "second-try" success since when Marion arrived at the tin on the floor, he opened it and found the handkerchief. At Sitting 17, we continued this series (E) and there were present on this occasion (Friday, 16th March), Mr. Harry Price; Dr. Cossar of Queen Mary College, Mr. Alex. L. Dribbel, Mr. H. S. Collins, Mr. Ellic Howe, Marion, Mr. S. G. Soal, and Miss Ethel Beenham, taking notes.

The manipulation of the tins was the same as in Sitting 16, and time was again allowed for the handkerchief to cool. The arrangements of the curtains, etc., were also the same. After experiment No. 13, on this date, I stood on a chair from which I could see all the tins from above, since Marion said that my movements were disturbing to him. At experiment 11, I had to warn Marion again to be careful as his hand was going near the lids. In fact, in passing his hand over the tin (No. 2) on the table, he appeared to graze the lid. As, however, this experiment was a total failure, I retain it. From my position on the chair, I was at some little distance from No. 1 on the settee, but this tin was under the direct observation of the sitters behind the curtain and I instructed them to watch it carefully. Marion again kept a private record of his successes and failures and appeared anxious. At Sitting No. 18 (Friday, 23rd March, 2.30 p.m.), we did six more experiments of Series E. There were present Mr. Harry Price; Mr. H. S. Collins; Mr. Ellic Howe; Mrs. A. Peel Goldney; Mr. S. G. Soal; Marion, and Miss Beenham, taking notes. The results of Series E are given in Table VI.

TABLE VI. SERIES E. (SITTERS BEHIND CURTAINS).

No. of Sitting	No. of Experiments	No. Correct First Try	No. Correct Second Try	Sitters Present (abbreviations)
15	9	3	2	b, g, c, s (m).
16 (a)	24	4	4	b, g, c, p (m), s, W, W ¹ .
(b)*	5	1	2	ditto.
17	20	4	4	b, d, c, p, s (m), H, C ¹¹ .
18	6	1	1	b, c, g, p, s, H.
TOTALS ...	64	13	13	

The abbreviations are the same as those appended to Table I (p. 15), but W = Mr. Maitland-Woolf, W¹ = Mr. Rathmell Wilson; C¹¹ = Dr. Cossar; H = Mr. Ellic Howe.

It will be seen that in sixty-four trials, we obtain thirteen first-try successes as compared with an expectation of 10.66. The excess is without significance. In fact, the chance of getting thirteen *or more* successes in sixty-four trials, is nearly 100 in 382, *i.e.*, greater than 1 in 4.

If, on the other hand, we take into consideration "second-try" successes, we see that Marion has scored twenty-six successes with $p = 1$ in 3. The

* Series 16 (b) was done on the same afternoon as 16 (a), but at an interval of forty-seven minutes after the end of 16 (a).

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chance of obtaining twenty-six *or more* successes out of sixty-four trials is about .1352, *i.e.*, about 1 in 7.4, a result which again has no significance.

The total failure of the curtain and blanket experiments, in comparison with the high percentage of successes obtained in Series A, made it fairly probable that for Marion to succeed, it was vitally necessary that he should be able to see some part of the body of a person who knew in which tin the handkerchief was hidden, or be able to observe his bodily movements in some way. But this failure also settled another important question. It showed that Marion, when carefully watched, was quite unable to obtain any significant degree of success from the tins themselves. It had occurred to some of us that Marion, who has a very sensitive touch, might be able to distinguish small differences in the intensity of radiant heat emitted by an empty tin compared with the tin which contained the handkerchief. This seemed to me improbable in view of the fact that polished tins are such bad radiators and that, therefore, the intensity of heat radiated would be very low in either case. But in view of the failure of Series B, D, and E, it seemed very unlikely that Marion was getting any significant indications from the tins themselves. Later on, I took special precautions to protect the tins by completely covering them with the inverted bottoms of larger tins.

TRIALS WITH INDIVIDUAL SITTERS.

An inspection of Table I (Series A) seemed to suggest that the results were particularly successful on those occasions when Mr. Alex. Dribbel was in the audience. Thus Marion got 58.8 per cent of first-try successes in the fifty-one experiments at which Mr. Dribbel was present and only 30 per cent in the fifty-three experiments at which he was absent. These figures, of course, are not cited as furnishing any satisfactory proof that Mr. Dribbel really favoured success more than the other sitters, but they suggested that it might be worth while to commence observing him apart from the rest of the sitters.

We began our first trials with Mr. Dribbel at Sitting No. 20, on Friday, 18th May. There were present: Mr. Harry Price, Mr. H. S. Collins, Mrs. A. Peel Goldney, Mr. Ellic Howe, Herr Fritz Bieber, Mr. S. G. Soal, and Miss Ethel Beenham, taking notes.

Mr. Dribbel arrived at 2.46 p.m., a little later than the others, and immediately on his arrival we commenced. Mr. Dribbel struck me as being a trifle self-conscious and very much on his guard as though he were well aware of being under observation. We began by doing two ordinary Series A experiments with all the sitters seated round the table in the usual way. [See Table I, Sitting No. 20] Both these were successful at first try. The sitters then all stood behind the curtain watching through the chink holes, the light proof blind having been drawn—that is, all with the exception of Mr. Dribbel and myself. I gave Marion the small handkerchief to hold for a few seconds and he then left the room, the door being closed behind him. The six tins were placed open on the table, their lids beside them. I shook the die in a tin after replacing the lid and showed the throw to Miss Beenham who was behind the curtain, and who recorded it. I put the handkerchief in the corresponding tin and placed the six tins in their usual positions. I then put the die in my pocket. Mr. Dribbel had now seated himself at the window

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end of the table facing bookcase B. (See Fig. 1). I sat down on the other side of the table directly facing him. I then clapped for Marion to come in. While Marion walked round the room, I covered my face with my left hand and looked through my fingers, keeping my features as passive as possible and my breathing even. I kept glancing from Marion to Mr. Dribbel, always keeping my face covered. Mr. Dribbel's face was like a mask, and he seemed determined not to give anything away. I tried to observe if there was any change in his expression when Marion approached the correct tin, but remarked nothing. Marion opened two tins, one after the other, but both were wrong. [Time = forty-five seconds.]

For the next experiment, Mr. Dribbel stood up at the table and I observed him through my fingers as before. Again both Marion's guesses were wrong and Mr. Dribbel's face seemed to me impassive as before. [Time = one minute thirty-five seconds].

For the third experiment, Mr. Dribbel again stood up at the table, facing my seat. Again I noticed nothing. Marion was correct at the *second* guess. [Time = one minute thirty-five seconds.]

It now seemed clear to me that Mr. Dribbel was concentrating his mind on the control of his muscles and in order to try to make him forget himself, I suggested that from now onwards, he should follow Marion round the room, with his hands clasped behind his back and will him to open the correct tin. I sat at the table as before, carefully keeping my breathing even and my face calm. We did thirteen experiments of this kind, seven before the tea interval, and six after tea. In this series, Marion scored seven successes at first try and five at second try, and one complete failure. To estimate the true significance of this result, it is best to consider it as giving twelve successes out of thirteen trials on a 1 in 3 chance. The chance of getting twelve or more first and second-try successes combined is 1 in 59,049. But if we ignore "second-try" successes, the chance of getting seven or more "first-try" successes in thirteen trials is 1 in 417. We may reasonably conclude that Marion has definitely succeeded with Mr. Dribbel following him round the room. But I certainly noticed no changes in expression in Mr. Dribbel's face, or anything special about his movements when he approached the tin containing the handkerchief. The only thing that struck me at all forcibly was that as he was passing me, he seemed to be breathing very hard as though he had been holding his breath recently and had now relaxed. Mrs. Goldney had noticed in the Series A experiments that Mr. Dribbel had appeared to hold his breath on several occasions. If Mr. Dribbel began to hold his breath as Marion approached the right tin, and relaxed when he started to move away from it, Marion would be given a valuable clue.

I had intended at our next sitting (No. 21), on Friday, 15th June, to try out some further tests with Mr. Dribbel, but he was unavoidably prevented from reaching the laboratory until the sitting was half over. And so, not to waste time, I suggested to Mr. Collins that he should follow Marion round the room. There were present: Mr. Harry Price, Mr. H. S. Collins, Mr. S. G. Soal and Miss Beenham (taking notes). The sitting commenced at 1.41 p.m. The procedure was as follows: I left the room with Marion and took him into the office. Mr. Price then shook the die, and Miss Beenham recorded the number thrown. The handkerchief was put into one of the tins and the tins were then distributed in the usual places and the lids replaced. Mr. Price

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and Miss Beenham then went behind the curtains and watched through the chink-holes, the light proof shutter being drawn. Mr. Price put the die in his pocket. Meanwhile, Mr. Collins, who, of course, knew which tin contained the handkerchief, stood near the door ready to walk behind Marion as soon as he entered the room. Marion and I were recalled and Mr. Collins immediately began to follow Marion wherever he went, always keeping about a yard behind Marion and holding his hands clasped behind his back. When Marion stopped, Mr. Collins stopped, and so on. In the meantime, I remained in the room acting as umpire, watching to see that Marion did not touch any of the tins, and also glancing at Mr. Collins' face and movements. Marion passed rather quickly round the room as in the Series A. experiments, the time for each experiment varying between twenty and thirty-nine seconds only. He did not on any occasion touch or graze a tin. During the whole time, Mr. Collins' face seemed to me as impassive as a mask. Nor could I notice any peculiarity in his breathing as he passed me.

We did eight experiments after this fashion, and Marion obtained six guesses correct at first try and one guess correct at second try. The chance of getting six or more guesses correct at first try in eight trials is 1 in 2240, a result which is pretty conclusive.

I then made Mr. Collins wear a domino linen half mask provided with a pair of eye-holes. Over these eye-holes, I had carefully stitched pieces of black stockinette so that Mr. Collins could see quite clearly through the holes. It was impossible, however, for his own eyes to be seen or any movements of his eyes or eyelids, owing to the stockinette. His mouth, on the other hand, was uncovered. The domino was held in position by a rubber band which passed over his ears and round the back of his head.

Under precisely the same conditions as before, Mr. Collins followed Marion round the room with hands clasped behind him. I acted as umpire, and the other sitters were behind the curtain.

We did three experiments with Mr. Collins wearing this domino, and Marion was successful at first try in all three. [Chance = 1 in 216.] It was, therefore, clear that blinking or eye movements were not the cause of Marion's success. [The times for these three experiments, respectively, were seventeen seconds, forty seconds, thirty-three seconds.]

I next caused Mr. Collins to wear over his head a thin tea-cosy of coarse linen, discarding the domino. This tea-cosy closely fitted his head and covered his neck. It was impossible to see any of Mr. Collins' features, or any facial movements through the tea-cosy, but Mr. Collins himself could see through the mesh well enough. I did three experiments with Mr. Collins wearing the tea-cosy and following Marion, the other conditions being precisely the same as in the preceding series. In the third experiment, we used, however, instead of the handkerchief, a small black velvet cat (a little mascot, measuring three inches long). Marion held the cat for a few seconds, as he had done the handkerchief. I acted as umpire and the other sitters were behind the curtains. Marion was successful in all three experiments at first-try. [Chance = 1 in 216.]

I now repeated this experiment with the sole variation that Mr. Collins wore *over* the tea-cosy a black stockinette hood which completely covered head, neck and shoulders. Through this combination, Mr. Collins could see just sufficiently well to follow Marion round the room and to recognise the

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various objects in it. With the above variation, we did two experiments and both were successful at first try. We thus have, altogether, five experiments in which Mr. Collins' features were completely invisible to Marion. The chance of getting five successes in five trials is, of course, 1 in 6^5 , *i.e.*, 1 in 7776.

We may conclude that Marion does not necessarily rely upon watching changes in facial expression for his indicia—at least, in the case where he is being followed round the room.

The wearing of the tea-cosy and hood does not, however, preclude head movements, either of rotation, or of nodding, being the sources of indicia.

I next tried the experiment with Mr. Collins still wearing the tea-cosy and hood, but seated at the central table instead of following Marion round the room. Mr. Collins sat at table A in my position (marked S) in Fig. 1. I asked him to put both hands in his coat pockets. I left the room as usual with Marion and after we were recalled, stayed in the room, acting as umpire. The other sitters, *i.e.*, Miss Beenham and Mr. Price went behind the curtains. I did two experiments under these conditions, and both were total failures. Mr. Collins then remarked that from where he was sitting and wearing both tea-cosy and hood, he could not clearly see all Marion's movements and Marion said he thought that was the reason why he had now begun to fail.

I therefore allowed Mr. Collins to wear only the black stockinette hood which was quite effective in hiding his face and neck. I further removed him from the table, and placed his chair at the right-hand edge of the curtain in the position marked V in Fig. 1. From this position (outside the curtain, of course), Mr. Collins could see all the tins without having to rotate his trunk. I asked him to keep his hands in his coat pockets and to remain with as little movement as possible consistent with his following Marion's movements round the room with his eyes.

Under these conditions, we did another four experiments, other circumstances remaining the same. Three out of four were total failures and the remaining one was only correct at second try. It was during the last of these four experiments, that I made an observation which was subsequently to be confirmed abundantly by the other sitters. As Marion was standing with his hand raised above the tin (No. 1) on the settee, he kept moving his hand up and down and at the same time glancing at the hooded figure of Mr. Collins seated in the corner. It seemed to me perfectly obvious that Marion was deliberately watching Mr. Collins for some slight movement. Marion then opened the tin (on the settee) and next the tin on the table, but both were empty.

In these six experiments, it looked as if success had been effectively inhibited. What had happened? I at once began to suspect that in the "following round" experiments, it was Mr. Collins' footsteps, approaches, hesitations, etc., that were the main source of the indicia.

By this time, Mr. Dribbel had arrived and was waiting in the office. I now called him in and asked him to take Mr. Collins' place on the chair in the corner and to put on the black hood. Mr. Collins now joined Mr. Price and Miss Beenham behind the curtains. Mr. Dribbel sat wearing the black hood and with hands in coat pockets. The experiment was now continued as before for four trials. Three of these were total failures and the remaining one was correct only at second try.

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That is to say, we had now done ten experiments with the agent seated and wearing the hood but without a single success first try.

Marion being questioned as to the reasons for this failure in comparison with the previous long runs of brilliant success, said that it was because he was tired. I determined to test this explanation. I therefore asked Mr. Dribbel to follow Marion round the room holding both hands clasped behind him, and wearing the black hood. I, of course, accompanied Marion outside the room and afterwards acted as umpire. The other sitters were watching through the chink-holes of the curtains.

We made four trials and Marion scored three first-try successes and then a failure. [Chance of three *or more* successes in four trials = 1 in 62 (nearly)]. This certainly suggests strongly that fatigue was not the true explanation of Marion's failure, but that it was due to the suppression of certain indicia that he had been relying on in the "following round" experiments.

I should add that from the first mention of the "black cat", we used this object instead of a handkerchief in all subsequent experiments.

In readiness for the next sitting (No. 22) on Friday, 29th June, I had constructed a light rigid plywood box 50 inches high and of rectangular cross-section (22 inches by 24 inches). This box was open at one end and in the bottom was cut a circular hole concentric with the rectangle and of diameter $9\frac{1}{2}$ inches. The box was to be put over Mr. Collins' head so that his neck passed through the circular hole and the very light weight of the box was supported by his shoulders—the arms, trunk and legs being enclosed in the body of the box. I had also had constructed a rectangular box of stout cardboard measuring $11\frac{1}{2}$ inches by 12 inches in its horizontal cross section, and $9\frac{3}{4}$ inches high. This box was open at the bottom and was intended as a rigid hood to enclose completely Mr. Collins' head. This hood rested on the horizontal top of the plywood box and in one vertical face (12 inches by $9\frac{3}{4}$ inches) of the hood was an oval-shaped hole covered with black stockinette. Mr. Collins' head, of course, made no contact with the interior of the cardboard hood and when he was wearing the box and hood, movements of his head *relative* to the trunk, *i.e.*, noddings or rotatory movements, were absolutely invisible to the onlooker. Trunk movements from the hips could, of course, be observed by the rotation of the box and hood. The only portions of Mr. Collins' anatomy that were visible were his feet and $1\frac{1}{2}$ inches of his legs. Mr. Collins gave the impression of a weird sort of walking robot and I shall refer to this contrivance as the "robot box". [See Plate II.] It was found, however, that a person could walk quite easily in this box and, owing to its lightness, without much discomfort.

Mr. Price next supervised the construction of a kind of sentry-box on wheels. This box was 6 feet 7 inches high and closed on three of its vertical sides and at the top and bottom. The front of the box was left open so that a man could enter and stand comfortably in it. The open front of the box could be covered by five rectangular panels of plywood each about $14\frac{1}{2}$ inches high so that by removing a panel, any section of Mr. Collins' body could be exposed to Marion's gaze. For instance, if the four lower panels were in position and the uppermost panel was removed, Mr. Collins' head and neck alone would be visible. When all five panels were in position, Mr. Collins would be totally invisible. He himself, however, was able to watch Marion through the tiny crevice that separated the top panel from the one immediately below it.

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This wheeled box was provided with a pair of handles fixed to its base, so that a person standing inside the box could be pushed round the room from behind in such a way that the panelled front of the box was always facing Marion. The small wheels under the box were so arranged as to permit of the box being rapidly turned to face any direction and to allow free movement both backwards and forwards. In order to gain space for these evolutions, the *séance*-room was cleared of its central table and tin box No. 2 was placed on a chair standing not far from the original site. The base of the sentry-box was five inches above the floor.

We made first use of these contrivances at Sitting No. 22 on Friday, 29th June. There were present: Mr. Harry Price, Mr. H. S. Collins, Mrs. A. Peel Goldney, Mr. Alex. L. Dribbel, Mr. S. G. Soal, Marion and Miss Beenham (taking notes).

In order to give Marion confidence, we started off with a few simple experiments in which either Mr. Dribbel or Mr. Collins followed Marion round the room with the follower's face uncovered. We began with Mr. Dribbel, the other sitters being behind the curtains. I left the room with Marion in the usual way, and acted as umpire when Mr. Dribbel followed Marion round the room. The first experiment was a success at first try and the next two experiments were complete failures. I therefore suggested that Mr. Dribbel should go behind the curtain with the other sitters, and that Mr. Collins should follow Marion round the room.

The first experiment was a complete failure and the second a success at first try.

I next did six trials with Mr. Collins following Marion round the room, but wearing the tea-cosy over his head. The other conditions were entirely unchanged. The first two trials were complete failures, but the last four were all successful at first try. [Chance of getting four *or more* successes in six trials = 1 in 115.]

It now seemed that Marion was at last getting into his stride, so I thought it time to try the robot-box. I left the room with Marion, taking him as usual away into the office. The robot-box and cardboard hood were placed upon Mr. Collins and he stood near the door ready to follow as soon as Marion entered. Mr. Price shook the die and put it in his pocket, the throw being recorded by Miss Beenham. The small, black cat was put into the corresponding tin and the tins manipulated in the usual way. The sitters, including Miss Beenham, then went behind the curtains and watched through the chink-holes. Marion and I were recalled and I acted as umpire, watching the tins. Mr. Collins, wearing the robot, followed Marion round the room, watching him through the stockinette, and willing him to open the correct tin.

We did six experiments under these precise conditions. The first was a complete failure, but the remaining five were all successful at the first try. The chance of getting five successes or more in six trials is 1 in 1505 (nearly).

Marion's performance must, therefore, be considered a brilliant success. This makes it more than ever probable that, in the case where Marion is followed, he gains his principal indicia from the movements of walking, *e.g.*, hesitation in footsteps, sudden stoppings, turnings, startings, accelerations, retardations, etc. When one considers that the constantly swaying box is not altogether under the control of the wearer, it does not seem likely that

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much reliable information could be gained about slight movements of the trunk. Noddings of the head are, of course, ruled out.

At 1.55 p.m. on the same day, we started experiments with the sentry-box. I first made a few trials with Mr. Collins standing in the box and wearing the black stockinette hood—the box being pushed round behind Marion with all panels removed, so that the whole of Mr. Collins' body was exposed to Marion's observation. I shall discard the first experiment since there was, on this occasion, no umpire inside the room. In fact, Marion and I left the room together and when we returned, I pushed Mr. Collins round in the sentry-box. But, of course, it was impossible for me to watch either Mr. Collins or Marion and push the box as well.

In the next and following experiments, Mrs. Goldney, Marion and I went outside the room and sat in the office. Mr. Price shook the die as usual and the black cat was hidden in the corresponding tin. The tins being placed in position and the die concealed, the sitters all retired behind the curtains except Mr. Collins who stood in the sentry-box, with the black hood over his head. Marion, Mrs. Goldney and I were recalled and Mrs. Goldney commenced to push the box behind Marion so that Mr. Collins could always see Marion. I acted as umpire and watched both Marion and Mr. Collins. The other sitters behind the curtain were also watching proceedings through the chink-holes.

In this manner we did five trials. The first was a complete failure, but the last four were successful at first try. The chance of four or more successes in five trials is 1 in 299.

The times taken by Marion for the above five trials were (i) forty-three seconds; (ii) one minute two seconds; (iii) one minute thirteen seconds; (iv) one minute thirty seconds; (v) fifty-two seconds.

Mr. Collins was, of course, a little in shadow as he stood in the sentry-box and time after time, I saw Marion glance deliberately at the hooded figure and on at least two occasions, he seemed to study Mr. Collins for about five seconds. The sitters behind the curtain told me they noticed this also.

The indicia in this case are almost certainly either head movements or twitchings of the trunk.

I next went on to a series of trials in which the agent stood in the box with all the panels closed so that no part of his body was visible to Marion. We were, however, only able to make a start on this series as Marion had another engagement.

We did only three experiments of this new series before Marion had to go. All the conditions were exactly the same as in the preceding series with the one important difference that now all the panels were inserted so that the box was completely closed. Mr. Collins still wore the hood, but could see Marion through the tiny crevice between the two top panels. Mrs. Goldney wheeled him round so that the panels were always facing Marion. The first experiment was a success at first try, and the other two complete failures.

At Sitting No. 23 on Friday, 6th July, 1.20 p.m., I continued with the series commenced at the end of the last *séance*. There were present Mrs. A. Peel Goldney, Mr. H. S. Collins, Mr. S. G. Soal, Marion, and Miss Ethel Beenham (taking notes). Mr. Alex. L. Dribbel joined the sitting later. Mr. Price was unavoidably absent. Before going on with the sentry-box experiments, I thought it wise to try the effect of providing an additional safeguard

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for the tin boxes. The fear that Marion might accidentally touch a tin was ever present with both Mr. Price and myself. I had, therefore, purchased of Messrs. Kettle six larger tins, measuring 6.8 by 3.8 by 2.2 inches deep. Discarding the lids, I covered each of the smaller tins (properly closed as usual) with the inverted bottoms of these large tins. There was, therefore, an air space of .6 inches between the lid of the small tin and the inverted bottom of the outside tin. If, therefore, Marion accidentally touched the outside cover, it would not disturb the tin inside and he would be unlikely to gain any clue.

To test this new arrangement, I went outside the room with Marion while the other sitters shook the die and hid the black cat. Mrs. Goldney concealed the die on this occasion. The sitters then went behind the curtains, with the exception of Mr. Collins. Marion and I were called in and Mr. Collins, with face uncovered and hands clasped behind his back, followed Marion round the room. I acted as umpire. We did four experiments in this manner, and Marion did not touch any of the outside covers. He was successful all four times at first try. [Chance = 1 in 1296.] This, of course, satisfied me that Marion had learnt no new trick that enabled him to get his information from the tins themselves, and showed, further, that the covers would not seriously disturb his technique.

At this stage, Mr. Dribbel entered the room, having waited in the office till the last experiment was finished.

The first two experiments made with the sentry-box to-day cannot be included in the series proper since the wheeler (in this case, Mr. Dribbel) had remained in the room and knew where the cat was hidden. Mrs. Goldney and I alone had gone out with Marion and watched proceedings, while Mr. Dribbel pushed Mr. Collins round with all the panels closed. Both these experiments, however, were complete failures.

In the first experiment of the series proper Marion, Mrs. Goldney and I left the room, and passed into the office. Meanwhile, the die was shaken and the cat put into the corresponding box. The boxes were replaced, given the usual random push, and the cover placed over each box. Mr. Collins stood in the sentry-box, wearing no hood but with all the panels closed. The other sitters (*i.e.*, Miss Beenham and Mr. Dribbel) retired behind the curtains and Marion, Mrs. Goldney and I were then called in. I wheeled the box behind Marion, but had not gone far when Marion suddenly stopped and said that the noise from the box was very disturbing. I therefore pushed the box containing Mr. Collins into a corner close to the entrance door, a spot from which Mr. Collins, peering through the crevices, could see all the tins in the room. Marion then started to go round the room again, watched by Mrs. Goldney and myself while Mr. Collins willed as hard as he was able for Marion to open the right tin. Marion opened two tins but both were wrong. This experiment was now repeated another seven times, the box still remaining in the corner of the door with Mr. Collins inside and all panels closed. There was only this slight variation, *viz.*, that Mrs. Goldney remained behind the curtain, and Marion was accompanied by only myself outside the room. I alone acted as umpire, the other sitters watching through the chink-holes of the curtains.

In these eight experiments, Marion scored only one success first try, and three second-try successes.

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Mr. Collins now left the box and Mr. Dribbel took his place, with face uncovered, but with all the panels of the box closed. It was decided that the box should be placed in the middle of the room and that Mr. Collins should rotate the box in such a way that Mr. Dribbel should always have Marion in view. The box itself, however, remained approximately in the centre of the room. Mr. Collins, Marion and I left the room, while Mrs. Goldney shook the die, concealed it, hid the cat and replaced the tins with their covers. She then retired behind the curtain and called us in. Mr. Collins turned the box round and round in accordance with Marion's movements while I acted as umpire. Mr. Dribbel, his face still uncovered, watched Marion through the crevice and willed him to open the correct tin.

Out of four experiments performed in this manner, three were complete failures and one was correct only at second try.

Had Marion returned to England after the summer vacation, I should certainly have continued with this series. As it stands, we have fifteen perfectly controlled experiments in which either Mr. Dribbel or Mr. Collins watched Marion from inside the box with all panels closed. These yield only two successes at first try and four at second try, a result which is entirely consistent with chance. These experiments so far as they go, certainly confirm the curtain experiments, and show that even individuals like Mr. Collins and Mr. Dribbel, who are very successful agents when their bodies are partially exposed, fail to furnish Marion with any clues when they are completely hidden inside the sentry-box, and not able to walk. When asked for an explanation of this failure, Marion said, "It proves that thought does not pass through wood!"

EXPERIMENTS WITH HEAD ONLY EXPOSED.

At Sittings Nos. 23 and 24, I carried out a series of experiments to ascertain whether Marion would succeed when every part of the agent's body was hidden with the exception of his head which, itself, was covered by the tea-cosy.

Six experiments were done on July 6th (No. 23) with Mr. Dribbel and twenty-five experiments on July 27th (No. 24) with Mr. Collins.

The conditions on July 6th are as follows. There were present Mrs. Goldney, Mr. Alex. Dribbel, Mr. H. S. Collins, Miss Beenham, and myself.

Mr. Dribbel was, at 2.19 p.m., already inside the sentry-box, with all the panels closed. The top panel only was removed and a light linen tea-cosy was placed over Mr. Dribbel's head so that nothing was visible except this tea-cosy through the fine mesh of which Mr. Dribbel was able to see. Mr. Collins, Marion and I then left the room, and having closed the door, passed into the office. Mrs. Goldney shook the die and three turned up. The die was concealed and the black cat was placed in the tin on the floor. Mrs. Goldney and Miss Beenham then went behind the curtains and called Marion, Mr. Collins and myself into the room. The tins were in position with the larger covering tins over them. Marion went from tin to tin holding his hand over each for a second or two, while Mr. Collins turned the box round and round so that Mr. Dribbel was always facing Marion, the box remaining in the centre of the floor space. Mr. Dribbel willed Marion to open the right tin. Marion opened the tin on the floor. Correct first try.



"Robot box" and hood used in the Marion experiments.

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Six experiments were done on this date under identical conditions, and Marion scored two successes at first try and one at second try. So far, therefore, the result was inconclusive.

However, at the next sitting (our penultimate sitting with Marion) we were able to arrive at positive conclusions with Mr. Collins inside the box.

There were present at Sitting No. 24, on July 27th, Mr. Harry Price, Mr. Collins, Miss Beenham, Marion and myself. At 1.36½ p.m. Mr. Collins went inside the sentry-box and all the panels were inserted except the top one which exposed only the head. The thin tea-cosy was placed over Mr. Collins' head and Mr. Price and Marion then left the room, and closed the door. I threw the die and six turned up. Having put the die in my pocket, I put the black cat into the appropriate tin, replaced all the tins and the larger covering tins, gave each tin a random push and went behind the curtain with Miss Beenham who recorded the throw of the die and other details. Mr. Price and Marion were then recalled. Mr. Price pushed Mr. Collins round in the box so that he was always facing Marion, the box remaining in the centre of the room. Marion kept near the gramophone and opened the correct tin at first try, in fifty-one seconds after entering the room.

In the next and succeeding experiments, the box was placed close to the curtain near the settee in position marked (W) in Fig. I. From this stationary position, Mr. Collins had an unobstructed view of all the tins while Mr. Price, who still accompanied Marion outside the room, was able, on his re-entry, to devote his attention to observing both Marion and what was visible of Mr. Collins. I, myself, did not watch through the chinks of the curtains. Twenty-four experiments were carried out under these conditions. Including the first experiment, we thus have a total of twenty-five trials in which Marion scored ten successes at first try and seven at second try. We have thus seventeen successes out of twenty-five on a 1 in 3 chance.

The probability of getting seventeen *or more* successes in twenty-five trials with $p = \frac{1}{3}$ is nearly $1/2409$ a highly significant result.

At experiment No. 23 of this series, Mr. Price reported that he had seen Mr. Collins' head nod visibly when Marion reached the correct tin, which was that on the settee on Mr. Collins' immediate right (No. 1 tin).

The tins with which Marion scored his ten first-try successes were Nos. 6, 4, 3, 4, 2, 5, 2, 2, 1, 4. It appears, therefore, that Marion was most frequently successful in the case of tins Nos. 2 and 4. No. 2 was on the chair quite close to Mr. Collins, while No. 4 was away on the bookcase, but in the direction in which his head would be normally looking.

There seems little doubt that, in this series, slight head-noddings made by the agent unwittingly were the clues that led Marion to the right tin. But the experiment has an important lesson in connection with the telepathic experiments of Dr. Rhine. *No such experiments can be considered of any crucial importance if the percipient is able to see any part of the agent's body.* Where the percipient has only a small number (5 or 6) figures from which to make his choice, the possibility of visual codes *elaborated unconsciously* when the same agent and percipient work together over any considerable period of time is too patent to be overlooked. In my repetition of the Rhine experiments in *telepathy*, I have used a screen from the very beginning and consider that experiments conducted without the use of a screen are valueless so far as the demonstration of telepathy is concerned.

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It would have been of interest to have carried out tests with other individuals to discover if they would succeed as well as Mr. Collins and Mr. Dribbel in furnishing Marion with unintentional clues to the hidden object. Unfortunately, Marion's brief stay in England did not permit me to make any extensive attempts in this direction. At Sitting No. 24, however, I, myself, acted as agent in seven trials. There were present Mr. Ellic Howe, Mr. H. S. Collins, Mr. and Mrs. Goldney, Mr. Price, Miss Beenham, and myself. At 1.17, Marion and Mrs. Goldney left the room. I threw the die and six turned up. The black cat mascot was put into the appropriate tin, the other tins being in their usual places. The outer covers were placed over the tins and each tin was given a random push. The sitters, with the exception of myself, then retired behind the curtains and called for Mrs. Goldney and Marion to re-enter the room. I proceeded to follow Marion round the room, maintaining between us a distance of about a yard. Claspings my hands behind my back, I let my muscles relax, keeping them well under control. Mrs. Goldney acted as umpire. Marion passed from tin to tin, holding his hand above each in turn. He opened the tin on the floor (3) and then the tin on the chair (1), neither being correct.

Seven experiments were made under these conditions, but Marion did not score a single success at first try and only one at second try.

Judging from this short series, it does not look as though I should make a good agent. I suppose the reason is that I am perpetually on my guard, calmly in control of my muscular reactions and indifferent as to whether Marion succeeds or not. It is probably persons of the *emotif* type who are anxious to see Marion succeed who unconsciously give away clues. Such persons are to be found in any considerable audience and they serve as living sign-posts to warn him when he is approaching his objective or receding from it.

It seems probable also, that Marion will fail under ordinary Series A conditions in which the agents are seated round the table, if the agents are instructed to keep their gaze steadily fixed on some object placed in the centre of the table. At Sittings 12 and 13, I did six experiments (not counted in Series A) in which we all fixed our gaze on a glass ash tray placed in the centre of the table for the whole time during which Marion perambulated the room. Marion who had been fairly successful under ordinary Series A conditions, at both sittings, failed in the six trials to score a single success at first try and obtained only one at second try. The series is too small to furnish any reliable conclusions, but it indicates that Marion probably derives his chief indicia from head movements and changes in facial expression when the agents are seated, whereas the "solo" experiments certainly suggest that when the agent follows Marion, his chief clues are from footsteps.

SECTION I.
APPENDIX A

As I thought it would be interesting to see how far other persons would be able to emulate Marion's performance and succeed in reading *indicia* when followed round the room by an agent, I arranged for an experiment on 3rd August, 1934. There were present, Mrs. A. Peel Goldney, Miss Rosemary Goldney, Mr. Harry Price, Mr. Ellic Howe, Mr. H. S. Collins, Mr. Alex. L. Dribbel and myself. Marion was absent.

I chose what seemed to be the easiest and most favourable conditions in which the seeker was followed by a good agent such as Mr. Dribbel or Mr. Collins, while the rest of the sitters were seated round Table A, Mr. Price and I occupying our usual positions. The seeker had, therefore, the opportunity of getting *indicia* not only from the following agent, but also from the persons seated round the table.

Mrs. Goldney first played the *rôle* of Marion, being followed round the room by Mr. Dribbel.

At 3.2 p.m. Mrs. Goldney left the room, accompanied by Mr. Price. The die was thrown and the black cat placed inside tin No. 2 on the table. The die was then concealed and the six tins, with their lids on, were placed in the usual positions, the six covering tins being placed over them. A random push was given to each tin, and I resumed my seat, Mr. Dribbel standing near the door ready to follow Mrs. Goldney when she entered. Mr. Price and Mrs. Goldney were now recalled. With both hands clasped behind his back, Mr. Dribbel followed Mrs. Goldney at a distance of about a yard. Mrs. Goldney kept glancing round at Mr. Dribbel as she passed from tin to tin. Within two minutes she opened first No. 3, the tin on the floor, and next No. 2, the tin on the table which contained the mascot. Correct at second try. Mrs. Goldney did, in all, twelve experiments and during the last four she faced Mr. Dribbel, scanning his features the whole time as she worked her way round the room.

In the twelve experiments, Mrs. Goldney did not score a single success at first try, but obtained five successes at second try. The chance of getting no successes at first try in twelve trials is $[\frac{2}{3}]^{12} = \frac{1}{5}$ (nearly). In the last four of these experiments, Mrs. Goldney scored two successes at *second try*. Mrs. Goldney, therefore, has clearly failed to qualify as Marion's understudy, her close scrutiny of Mr. Dribbel's countenance being of no avail.

We next experimented with Mr. Dribbel, who rather fancied himself as "Marion". Mr. Collins followed him round the room, hands clasped behind back and willing him silently to open the right tin. The other conditions were the same. Strange to say, in twelve trials, Mr. Dribbel, like Mrs. Goldney, did not score a single success at *first try* and only two successes at *second try*. Therefore, he likewise fails to qualify.

The combined result of the twenty-four experiments is rather remarkable for *not a single success* was scored at first try. The chance of this happening is

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nearly 1 in 80 (*i.e.*, 1/80). Many psychologists would regard this result as being significant. If it is accepted as significant, it would mean that both the agents succeeded in warning-off the seekers from the correct tin. That is, Mrs. Goldney and Mr. Dribbel were bluffed and thrown off the scent. The experiment, I think, was well worth doing. If ordinary persons fail to find the mascot under the very easiest conditions, it clearly enhances the prestige of Marion, who succeeded five times running with nothing to guide him but a pair of walking feet—all that was visible of the agent.

It is not surprising that the percipients should have failed in emulating Marion's performance, as probably years of unremitting practice are required for the correct interpretation of *indicia* as well as a natural flair for this kind of thing. I have sometimes been asked whether Marion is aware of the method he employs for finding hidden objects and whether he really believes that he succeeds by telepathy. The answer probably is that after years of practice, the reading of *indicia* has become a subconscious mental process which Marion is entirely unable to analyse. Before leaving England, however, Marion confessed to Mrs. Goldney and myself that our experiments had "taught him a great deal about the way in which his faculty works" but beyond this, he would not commit himself. I think it very probable that the sentry-box experiments, and the curtain experiments have given Marion an insight into his own mental processes which he did not possess before. When he found it necessary to watch the hooded figure of Mr. Collins in the shadow of the sentry-box, I think Marion must have realised what *indicia* he was looking for.

In conclusion, I must emphasise that in our investigation of Marion, we are not concerned with the establishment of minute trace of telepathic or clairvoyant faculty such as would necessitate the performance of thousands of tests. Our primary object has been to throw a little light on Marion's stage performances. If a performer cannot get at least 45 to 50 per cent of success, whatever the odds are against him, he is not going to impress his audiences. When, therefore, we find that, under certain conditions, Marion can obtain results that could easily be attributed to chance in a short series of fifteen to twenty tests, we may be reasonably sure that the conditions prohibit the working of his faculty.

SECTION II.

THE RECOGNITION OF PLAYING CARDS.

IN view of the numerous attempts that have been made to demonstrate telepathy and clairvoyance by the use of playing cards, the problem of their identification by normal means is of first-rate importance in psychical research. In a large proportion of the recent experiments carried out by Dr. J. B. Rhine of Duke University, the visual recognition of small irregularities on the backs of the cards in conjunction with the memorisation of sequences which are left undisturbed by inefficient shuffling of the pack, suggests itself as a possible source of error. The experiments described in the first Jephson report¹ were probably vitiated by precisely the same kinds of error. As Marion displayed great aptitude for recognising a playing card that he had once touched when this card was mixed with several other cards of similar make and pattern, I thought it well worth while investigating the methods which he employed. The experiments which I am about to describe were originally suggested by me and formed no part of Marion's ordinary programme. Marion, indeed, told us that he had never tried this sort of thing before in his life and if we accept this statement, it will be admitted that he showed great versatility in mastering so quickly a new technique.

It was at our first sitting on January 17th, 1934, that I asked Marion to try a few experiments with playing cards. At first, he demurred, saying that he had always avoided cards because the audience always suspected a mere conjuring trick. I soon reassured Marion by telling him that there could be no possibility of conjuring in the experiments which I proposed he should try. I opened a new pack of playing cards which I had bought that afternoon. The cards were of the ordinary "linen-grained" type and on the back were the head and shoulders of a woman, contained inside a gilt oval. Surrounding the oval was a red border with a mesh of gilt lines. At 3.30 p.m. I handed Marion the Queen of Diamonds which he held in his hands for a few seconds. He then handed me the card and left the room, the door being closed. I chose five other cards at random from the pack, added the card touched by Marion and, holding the six cards under the table, shuffled them and then slid them one by one on to the table, backs upward so that the six cards were laid out separately on the table. Marion was recalled to the room and seated himself on my left so that I could overlook his every movement. The other sitters were also watching carefully. Marion tapped the back of each card in turn with his first and second fingers, sometimes pushing a card aside. He then turned up a card, and it was the Queen of Diamonds. The whole experiment took a minute from the instant when Marion was handed the card to the instant when he turned up the right card.

The experiment was then repeated, using this time the Ace of Spades. Marion laid the card on the table and stroked and tapped its back once or

¹ Ina Jephson: *Evidence of Clairvoyance in Card-Guessing*. . . *Proc. S.P.R.*, 1928, vol. xxxviii, pp. 223-271.

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twice and left the room. The card was mixed with five others, and six cards shuffled as before, the cards being slid one by one on to the table. As before, Marion tapped and stroked the backs of the cards one by one, and then pushed three aside. This time, however, he turned up a card from the three which he had pushed aside. It was not the Ace of Spades. Neither was the next card and it was only at the third attempt that he turned up the right card.

We then repeated the experiment, using this time the Jack of Diamonds and mixing it with six other cards. Marion picked out the right card first try in $1\frac{1}{2}$ minutes.

We then used the Three of Diamonds with five other cards, and Marion was successful first try in less than a minute. Again we did the same experiment, using the Queen of Clubs and seven other cards. Marion was successful at first try, within a minute.

I then handed Marion the Six of Hearts which he held for a second or two. When he had left the room, I shuffled this card with thirty-three other cards and spread the cards upon the table so that they were all separate, backs upward. On being recalled to the room, Marion sat on my left and tapped and stroked the back of every card in turn. He then pushed six to one side for final inspection. He tapped and stroked the backs of each of these six and then turned up a card which was the Six of Hearts. The time taken was four minutes.

At our second sitting on 18th January, we continued this type of experiment. The only innovation was that the room was darkened during the shuffling of the cards on the table. This was in order to ensure that no sitter, including myself, knew the position on the table of the chosen card. The cards employed on this occasion were a perfectly new pack of identical design with those used at the previous sitting. The audience, on this occasion, was a large one, and I sat with Marion at a small table facing the audience. At the close of this sitting, it was obvious that Marion was definitely recognising the cards and not merely relying upon chance. It would, however, be tedious to transcribe here Miss Beenham's very full notes of Marion's manipulations for each individual experiment of this series which I shall call Series (i).

After Sitting No. 2, Miss Beenham sat at the table in a position so that she could note accurately every movement made by Marion and myself. A certain number of details, however, call for mention. After Sitting No. 2, the card handed to Marion to "sense" was always a card of red suit and it was shuffled with a number of cards all of black suit. Marion claimed that he was able to recognise cards of red suit more easily than those of black suit. At Sitting No. 3 I used a pack of cards of new design. The cards were of the usual size of "linen-grain" and on the backs was a minute regular pattern in black and white. The card had a white "linen grain" border of 5 mm. at each side and a similar border of 6 mm. at the top and bottom. After Sitting No. 3 I used cards identical in every respect with those just described, with the exception that the regular pattern on the back was in red instead of in black. This change was made at Marion's request. This red pattern card was used in all experiments after Sitting No. 3, but new packs were brought to every sitting. Marion's procedure was generally as follows. He would lay the card selected by me face downwards on the table and tap it at different points with one or two fingers, sometimes turning it round on the table. He

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would spend, perhaps, fifteen or thirty seconds over this. He then left the room. I would pick up the card and mix it with five, six, seven, or more similar cards from the same pack, but of black suit. This hand of cards I would hold under the table and thoroughly shuffle them out of sight of the other sitters and myself. I then collected the cards into a small pack, still holding them out of sight under the table. The lights were then turned out, the dark shutter of the window having been previously drawn. I spread the cards separately on the table in the dark, face downwards, and gave them another shuffle on the table. The lights were then turned on and Marion was recalled to the room. He took the chair on my left and began to draw the cards towards him one by one and tap each card at several points, sometimes turning the card round without, of course, lifting it. After he had tapped each card, he would push two or three aside and then proceed to tap each of the selected cards. Then he would push aside a card from, say, the three chosen, leaving only two. He would concentrate on these two, tapping each in turn and when he had made up his mind, he would turn up one of the cards as his final choice. If the card turned up was wrong, he would usually turn up the other as a second try. I should mention that this tapping of the back of the card was extremely gentle and he appeared to be examining the contact which the different parts of the card made with the wood of the bare table. We never used a cloth on the table. It will be seen from Table (1) that I handed Marion a different red card every time and I also used a different set of black-suited cards to mix with it for each experiment. In fact, I found it convenient to use three or four identical packs of new cards at the same sitting. I would, before the sitting started, sort out the red suits into one pile and the black suits into a second pile. This made it easy for me to ensure that I was using different sets of black cards for each experiment. Entirely new packs were used for each sitting.

A few minor variations in the above procedure must be mentioned and a reference to Table (1) will show the sittings at which they occurred. For instance, in certain experiments the lights were not turned out during the shuffling, but the cards were merely shuffled under the table. On another occasion, the cards were shuffled behind an opaque curtain. In this series, it was, of course, quite unnecessary for Marion to be accompanied outside the room, but when he was so accompanied, the fact is noted. In certain experiments, Marion remained in the room while the cards were shuffled under the table. On such occasions, the pile was raised by me carefully to the level of the table and the cards were slid on to the table one by one, faces downwards. This method eliminated the possibility of Marion catching any glimpse of the face of a card and it has always been adopted by me in card experiments.

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SERIES (i). TABLE (1)

<i>No. of Sitting</i>	<i>Card given to Marion</i>	<i>Total No. of Cards</i>	<i>Results</i>	<i>Time Taken</i>	<i>Conditions of Experiment</i>
1	Q D	6	S	1 m.	[U L] [N]
	1 S	6	F	3 m.	ditto.
	J D	7	S	1½ m.	ditto.
	3 D	6	S	½ m.	ditto.
	Q C	8	S	1 m.	ditto.
	6 H	34	S	4 m.	ditto.
2	J D	6	F	1 m.	[A L] [N]
	6 D	6	F	1½ m.	ditto.
	K H	6	F	1 m.	ditto.
	4 H	7	S	1 m.	ditto.
	J C	7	S	1 m.	[A L] [D]
	J D	33	S	4 m.	ditto.
3	?	7	F	10 m.	[U L] [N]
	1 D	7	S	5 m.	ditto.
	J D	7	S	1½ m.	[U L] [D]
	1 H	30	F	—	ditto.
	9 H	11	S	4 m.	ditto.
	10 D	6	S	4/3 m.	[U L] [N]
4	5 D	6	S	4 m.	[U L] [D]
	1 H	7	F	—	ditto.
	5 H	8	S	4½ m.	[U L] [N]
	4 H	6	S	1½ m.	ditto.
	K H	33	F	4 m.	[U L] [D]
	2 H	31	F	—	[A L] [N]
5	1 H	7	F	1½ m.	[A L] [N]
	J H	6	F	2 m.	[U L] [N]
	6 H	6	S	1 m.	[A L] [N]
	K H	6	F	2½ m.	ditto.
	4 D	6	S	67/60 m.	ditto.
	3 H	7	S	28/60 m.	[U L] [N]
7	K D	6	S	25/60 m.	[U L] [N]
	K H	6	S	37/60 m.	[U L] [N]
8	6 H	6	S	44/60 m.	[R T] [N]
	J D	6	S	115/60 m.	ditto.
	10 D	6	S	35/60 m.	ditto.
9	J D	6	S	1 m.	[R T] [N]
	Q H	6	S	43/60 m.	[R T] [N]
16	A "red" card	6	S	—	[R T] [B]
25	K H	6	S	—	[R A]
	Q D	6	S	—	ditto.
	9 D	6	F	—	ditto.
	6 D	6	S	—	ditto.
	5 D	6	S	—	ditto.
	2 D	6	S	—	ditto.
	1 D	6	S	—	ditto.
	K H	6	S	—	ditto.
	Q H	6	S	—	ditto.
	1 H	6	F	—	ditto.
	Same 1 H	6	S	—	ditto.

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Explanations of last column:

[U L] = Marion leaves room unaccompanied.

[A L] = Marion leaves room accompanied.

[R T] = Marion remains in room, seated at table and cards are shuffled out of sight, under table.

S = *Correct* card turned up at first try.

F = *Wrong* card turned up at first try.

[D] = Room in darkness while cards are being shuffled.

[N] = Cards shuffled under table, but lights *not* turned out.

[B] = A bend was given to the pack of six cards after shuffling, there being no separate bending of cards.

[R A] = This Sitting (No. 25) was held in Marion's room at the Hyde Park Hotel. The cards were mixed and the five black cards added in an alcove situated in a distant part of the room where all my movements were invisible to Marion. For fuller details, see page 43.

It will be borne in mind that, in all the above experiments, Marion was allowed to hold and to tap with his fingers the card handed to him by me.

We will now statistically summarise the above series in Table II.

SERIES (i). TABLE (II).

No. of Experiments	Chance Factor	No. of Successes (S)	Expected Numbers
32	1 in 6	24	5.3
9	1 in 7	6	1.3
2	1 in 8	2	—
1	1 in 11	1	—
1	1 in 30	0	—
1	1 in 31	0	—
2	1 in 33	1	—
1	1 in 34	1	—

No one who examines this table can possibly doubt that the successes are due to something more than chance coincidence. If we merely take the thirty-two experiments in which the chance of success was one-sixth, the odds against getting as many as twenty-four successes are simply enormous. [Chance = 5.51×10^{-13} .]

The first explanation that naturally suggests itself is that Marion recognises the cards by noting and memorising small specks upon the borders, slight irregularities in the linen grain, etc. That such visual recognition is actually possible, with perfectly new cards, there is no doubt whatever. Such recognition demands only two things (a) a good eyesight, and (b) a good visual memory. In fact, I will state without hesitation, that the backs of no two cards chosen from a perfectly new pack of ordinary playing cards are exactly alike. There is always some slight speck or irregularity that can be detected by a good normal eyesight and which serves to distinguish one card from several others with which it may be shuffled. I have, myself, succeeded repeatedly in picking out a card that has been shuffled with several others chosen by another experimenter from a perfectly new pack. I found it necessary merely to study the back of the card given me for about half a minute or so.

Nevertheless, in Marion's case, there were indications that the recognition was tactual rather than visual. The constant tapping of the card as it

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lay on the table suggested that Marion was really examining the contact which the different parts of the card made with the wooden surface of the table. At the third sitting, there were present three physiologists, Dr. J. A. Hewitt, Professor Harris, and Professor Hartridge, F.R.S., who watched Marion perform this trick with the cards. After the sitting, Professor Harris told me that he thought Marion possessed a touch sensitive enough to recognise the card by noting small differences in flexibility at different points of the surface. He also suggested that Marion might have an ear sensitive enough to detect differences in the pitch of the note emitted when the cards were tapped on the table. The latter suggestion may seem a little far-fetched, but it seemed certainly worth while making experiments to exclude visual recognition.

The tapping of the cards on the table is constantly noted in Miss Beenhams's records. Thus Sitting 8, Series (i), Experiment 2 [RT] [N], the record reads:

"9.33 p.m. The Jack of Diamonds is given to Marion who taps it with the tips of his fingers and then passes it to Mr. Soal. Mr. Soal shuffles this card with five black cards under the table and all the while he is doing this, Marion is rubbing the fingers of his hand together, as though keeping the feeling in them. The cards are then put in front of him. Marion strokes and taps each card in turn and then pushes it aside. He is evidently not satisfied, as he goes through the cards again and turns up one. It is the Jack of Diamonds. Time one minute fifty-five seconds (from starting to tap the cards)."

Marion's own explanation is that he retains a feeling in his fingers which enables him to recognise the card when he touches it again.

My first task was to satisfy myself and the other sitters that what Marion recognised was the actual card which he had previously touched and not the value on the face of the card. In order to do this, I provided myself, unknown to Marion, with a duplicate pack of cards, identical in make, design and colour, with the pack that I was using. I began at Sitting No. 4 with three experiments of Series (i), of which two were successful, the total number of cards used being six, seven, eight, respectively (see page 40). I then began to modify the experiment. At 8.57 p.m., I gave Marion the Jack of Hearts, which he held and tapped. He then left the room. I now took the sitters into my confidence and picked up the Jack of Hearts from the duplicate pack, concealing the card which Marion had touched. Within full view of the sitters, I added five other black-suited cards and then when the lights had been turned out, I shuffled the six cards and spread them out on the table, backs upward. Marion was then recalled, but was kept in ignorance of what had been done. Marion failed to turn up the Jack of Hearts. I did five experiments of this kind consecutively, and Marion obtained only one success. A different "red" card was used in each experiment. After this run of failure, I prophesied to Marion that next time he was going to succeed. I gave him the Four of Hearts to touch, but this time I did not substitute the duplicate card. Marion succeeded first try. At sitting 25 on 28th July, I continued with this experiment, substituting unknown to Marion, a duplicate card, the total number of cards used in each trial being six. On this occasion, Marion did not succeed once in turning up the correct card in the ten trials that we made. We have, in all, therefore, fifteen experiments with only one

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success which, of course, is what chance might easily produce. [Expected number = 2.5.] But far more convincing than the mere statistics were Marion's own remarks and the particular way in which we conducted the experiments at Sitting No. 25. This sitting which was devoted almost entirely to confirming the results of Sitting No. 4 was held in Marion's room at the Hyde Park Hotel at 11 a.m. on 28th July, 1934. There were present, Mrs. Peel Goldney who took the notes, Miss Ethel Beenham, Mr. H. S. Collins, Marion, and myself. On the evening previous to the sitting, I had purchased five new packs of playing-cards, all identical with those used in the preceding sittings [*i.e.*, backs with small pattern in red and white and the usual white borders—"linen grain".] Before coming to the sitting, I opened the packs and thoroughly flexed each separate card, both transversely and longitudinally and also at the four corners so that the cards would not make quite the same contact with the table as new ones. The reason for this thorough flexing (*i.e.*, bending backwards and forwards) of the individual cards lay in the fact that I had learnt in the meantime that when a perfectly new card is held in the hand for a few seconds, it will often assume a slight transverse convexity which enables it to be detected when it is mixed with other new cards that have been more lightly fingered. That is to say, a much fingered new card will often appear to be very slightly arched in the centre when laid on the table with other new cards. In order to avoid this obvious visual clue, I therefore well flexed every one of the 260 cards. For convenience I then put all the "black" suits together in envelopes and the red cards I arranged in order with the exception of twenty, which I required for another experiment. The envelopes containing the cards, I put in my suitcase, which rested on a table behind a projection of the wall which completely hid my movements from Marion who sat several yards away at a wooden table (hard top) covered with tight American cloth. Mr. Collins and Mrs. Goldney also sat at this table, but Miss Beenham sat apart in such a position that my movements at the suitcase were, to some extent, visible to her. In order not to discourage Marion too much, I decided to alternate Series (i) experiments with experiments in which, unknown to Marion, a duplicate card was substituted for the one which he had touched. I arranged with Mrs. Goldney to give a secret signal when the duplicate card was substituted and she marked such experiments in her notes by an S and the ordinary Series (i) experiments by an O. Mrs. Goldney, besides recording the details and result of each experiment, noted any interesting remarks that Marion made. All the shuffling of the cards, etc., was done behind the projection of the wall and Miss Beenham generally knew when I had added a duplicate card. Mr. Collins knew in a general way what I was trying to do, but I doubt if he was always aware whether I was doing an S or an O experiment. Needless to say, Mrs. Goldney recorded the S or O in each case *before* the experiment commenced. In each case the "red" card was shuffled with five cards of black suit and a *different* set of five black cards was used for each experiment, no black card being ever used twice except in cases explicitly mentioned below.

The results, with Marion's remarks, are given in Table III.

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TABLE III.

<i>Nature of Experiment</i>	<i>Card Chosen</i>	<i>Result</i>	<i>Marion Remarks</i>
1 O	K H	Correct, first try	—
2 O	Q D	Correct, first try	—
3 S	J D	Two tries, both wrong	—
4 S	10 D	Two tries, both wrong	—
5 O	9 D	Correct, second try	At first wrong choice, Marion remarks, "I am sure."
6 S	8 D	Two tries, both wrong	—
7 S	7 D	Two tries, both wrong	—
8 O	6 D	Correct, first try	"Not quite sure."
9 O	5 D	Correct, first try	"Quite sure. Sure as the stab of a pin."
10 S	3 D	Two tries, both wrong	"Quite sure."
11 S	2 D	Two tries, both wrong	"No feeling; this is guessing."
12 O	The same 2 D used in No. 11 is mixed with the same five black cards	Correct, first try	While manipulating, Marion remarks: "This is funny; it feels quite different this time, although its the same card. This time, I'm absolutely sure."
13 S	1 D	Two tries, both wrong	—
14 O	The same 1 D used in No. 13 is mixed with the same five black cards	Correct, first try	"So easy! I'm so sure! Just as if it wasn't the same card when I'm wrong, and it <i>is</i> the same when I'm right."
15 S	K H (not the same as in No. 1)	Two tries, both wrong	"Absolutely no feeling. Just as if the card wasn't there."
16 O	The same KH as in No. 15 mixed with five different black cards	Correct, first try	"Absolutely sure."
17 S	Q H	One try only, wrong	—
18 O	The same Q H as in No. 17 mixed with the same five black cards	Correct, first try	—
19 S	1 H	One try only, wrong	"I am sure the card is not there."
20 O	The same 1 H as in 19, mixed with the same five black cards	Experiment miscarries	—
21 O	The same 1 H as in 19 and 20 mixed with the same five black cards	Correct, first try	—

An inspection of the above table shows that in the ten "O" experiments (omitting No. 20 which miscarried, owing to cards being turned up by accident) Marion obtains nine successes first try and one at second try, while in the ten "S" experiments, he does not obtain a single success either at first or

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second try. When the experiment is an "S", he frequently either gets no feeling, or gets a feeling that the original card is not there. In the "O" experiments, he usually feels sure. It seems clear, therefore, that the figure on the *face* of the card plays no part in Marion's recognition.

Is the recognition tactual or visual?

The next question we have to decide is whether the recognition is visual or tactual or partakes of both modes.

We first tried to discover if it were possible for Marion to recognise a card whose back he had never seen, using touch alone. To this end we carried out ten experiments at Sitting 8 on February 8th, 1934. The experiments were watched by Mrs. Richards, Miss D. Paul, Mr. J. Van Lier and Lord Sands. Miss Beenham also watched and took the notes. We commenced at 9.37 p.m.

I had on Table B a pile of black cards and a pile of red cards formed by amalgamating two precisely similar packs which had been bought on the afternoon of the experiment. All the cards were face upwards. I walked to this table and turning my back to the audience, sitting round the large table, I lifted off the five top cards of the black pile and placed face upwards on top of the five black cards, the top card of the red pile, *i.e.*, the Four of Diamonds, all six cards remaining face upwards. Holding the pile of six cards horizontal and face upwards, I carried it to the large centre table and slid it on the table. The lights were then switched off and in total darkness, I handed the top card, *i.e.*, Four of Diamonds to Marion. Marion held the card in his hand for a few seconds and then passed it back to me in the dark. Still in darkness, I shuffled the Four of Diamonds with the five black cards, holding the cards under the table while doing so. I next gave the pile of six cards a longitudinal flex and a transverse flex. This was intended to eliminate any special bend that had been given to the Four of Diamonds, while Marion had held it, or to give to the other five cards a similar bend. I then held the pile face downwards at the level of the table and close to the edge and asked for the light to be switched on. Immediately the light was on, I slid off the top card on to the table, pushing it towards Marion, face downwards, of course. Marion tapped the back with his finger-tips and pushed it aside. I then slid the next card on to the table towards Marion who tapped it gently in a similar manner and I proceeded in this fashion till all six cards were on the table. Marion then tapped each card again and pushed two aside. He turned up these two cards one after the other, but both were black cards. We then proceeded to repeat the experiment, using the Six of Hearts, which was now the top card of the red pile, and the top five cards from the black pile. Marion again failed. The next eight experiments conducted in an identical manner were, however, all successful at first try. The chance of getting eight or more successes in ten trials is 1 in 51,417, which is highly significant.

The loophole in this experiment was the possibility that the casual flexing of the pack of six cards in the dark was not sufficient to eliminate the flex which Marion might have given the red card when he held it. This card might therefore stand out from the others a little when laid upon the table and so be recognised visually. I found later that the only safe way to eradicate a transverse flex was to bend and rebend the cards *separately*, both lengthwise and crosswise and also at the four corners spending, perhaps, three-quarters of a minute over each card. Another possibility was that

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Marion had the opportunity to mark the back of the card in the dark, or to nick its edge, or to wet it. I did, as a matter of fact, examine with a magnifying glass the ten cards held by Marion, but could find no signs of nicking or marking. I should state here that Mr. Price and I together examined a good many of the cards which had passed through Marion's hands and we were never able to find any suspicious marks or nicks and I have examined altogether a score or more such cards and failed to find evidence that they had been either marked or nicked. The experiment, however, was clearly unsatisfactory.

Marion had insisted that it was absolutely necessary for him to be able to bring his fingers into contact with the actual card in the first instance if he was to be successful.

Another series was carried out [Series (iii)] which constitutes an interesting variation of the series which we have just described [Series (ii)]. The procedure was identical in every detail with the preceding, up to the point when the light was switched on. But now Marion was not allowed to touch any of the cards as they were slid on to the table. He merely waved his fingers in the air over each card and indicated whether we were to move this card to the right or the left. He was presently left, say, with two cards on the left and four on the right. He then waggled his fingers over the two cards on the left, and indicated by a wave of the hand that a particular one of these was to join the group on the right. Marion would then ask for the remaining card to be turned up as his final choice. Throughout, Marion never touched a card from the moment he handed me back the card in the dark, but merely directed how the cards were to be moved.

I will quote the record of an actual experiment. Sitting No. 7, February 7th. 3.51 p.m. "The Ace of Hearts is taken and placed face up on five other black cards. The lights are turned out. Mr. Soal hands Marion the red card. Marion holds it for a second or so and then returns it to Mr. Soal, who holds the six cards under the table. The lights are put on. Mr. Soal shuffles the six cards under the table and, having bent the pack once or twice, then slides them one by one, face downwards, in front of Marion. Marion holds his hand over each one and then waves them either to right or left (that is, makes a sweeping motion with his hand). The first, third, fourth and sixth cards are put on the left. The second and fifth cards are pushed before Marion again who says that this time he is absolutely certain and indicates which card is to be turned up. The Ace of Hearts is turned up first time. [Time: thirty seconds.]" In this series a different red card was used for each experiment and a different set of five black cards. In all twenty-one experiments were performed under similar conditions. In each experiment in this series, a casual bend or flex was given to the pile of six cards before it was slid upon the table, but there was no separate bending of the individual cards. The results are given in Table IV.

TABLE IV. SERIES (iii).

<i>No. of Sittings</i>	<i>No. of Trials</i>	<i>No. of Successes (First Try)</i>
5	9	5
7	7	4
15	2	2
16	3	0
TOTALS	21	11

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The chance of getting eleven or more successes in twenty-one trials is 1 in 5340 (nearly).

This is probably Marion's prettiest trick with the cards and I must confess that it puzzled me for a week or two. I thought at first that Marion must somehow be able to correlate the tactual picture of the contact which the card made with the palm of his hand in the dark, with the visual picture of the contact which the card made with the surface of the table. It was not until I had undertaken Series (iv) with the windowed-envelopes that it began to dawn upon me that the real explanation was probably absurdly simple, *viz.*, that the casual bending of the pack of six cards under the table was insufficient either to destroy the flex imparted to the red card by Marion or to give a permanent flex to the five black cards, which, having been merely lifted, had not received any flexural set so that when the six cards were slid on the table, the red card often appeared to have a just noticeable convexity which caused it to stand out a little from the others. In order that the red card should be indistinguishable from the others, it would be necessary to give all six cards a thorough re-bending one by one.

In order to obviate the possibility of Marion marking the cards in the dark, Mr. Price brought to Sitting No. 7 some small envelopes, size 95 mm. by 60 mm., into which an ordinary playing-card would just about fit. The envelopes were provided with flaps that could be gummed down and in the face of the envelope was cut out a rectangular window about 78 mm. long and 50 mm. wide, the edges of the rectangle being parallel to those of the envelope. When the flap was stuck down, this allowed a slight play of the card within the envelope, but the window was too small for the edges of the card to be brought into view. I had, as usual, two piles of black and red cards, all resting face upwards on Table B. The cards were from new packs which I had bought on the preceding day. Standing with my back to Marion and the sitters, I lifted off the top red card which was the Nine of Hearts and keeping it face upwards, slid it horizontally into one of the envelopes so that the *face* of the card alone could be seen through the window, the four edges and back being completely hidden. I then gummed down the flap and handed the envelope to Marion who fingered it and seemed to be weighing it in his hand. Every movement of Marion was watched by Mr. Harry Price, Mrs. A. Peel Goldney, Mr. H. S. Collins, Mr. Alex. L. Dribbel, Mr. J. Van Lier, Miss Beenham and myself, I stood on Marion's right hand, watching closely. There is nothing of the conjurer about Marion and all his movements are very slow and can be followed with the greatest ease. I can testify that Marion did not either wet the card or nick the edge of the envelope or scratch, or mark the face, or the back of the envelope. The envelope was, in an ordinary sense, opaque. The only thing that Marion might have done was to give the card a slight flex through the mere fact of holding it in his hand. At the end of perhaps fifteen seconds Marion handed me back the envelope. I carried it away to Table B and standing with my back to Marion and the audience, and holding the card close to me, I tore open the envelope holding the card face upwards. I then lifted off the top five from the black pile and laid the red card face upwards on top. I then inverted the pile and shuffled the six cards, always keeping them face downwards. I next bent the pack a few times backwards and forwards, both transversely and longitudinally, but I did not bend the cards separately. Still holding the pile face downwards

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on the palm of my left hand, I lowered them to the level of the sitters' table and slid the top card on to the table in front of Marion. Marion waved his hand above it without touching it and then waved for it to be pushed to the right side. I then slid the next top card on to the table and it was waved to the left. The third was put to the left, the fourth to the left, the fifth to the right and the sixth to the right. The three cards on the right were pushed in front of Marion who waved his hand over them. One was put aside (at Marion's request), and the remaining two were turned up, one after the other as a first and second choice. Both, however, were black cards. The procedure was then repeated, using the next top red card which was the King of Diamonds, and a fresh set of five black cards [4.0 p.m.].

Fifteen such experiments were done at Sitting No. 7, and in the last six, the flap of the envelope was turned down but not stuck, as we were using the same envelopes over again, having run short of envelopes.

The series was continued at Sitting No. 9, when eleven more experiments were done. In all these experiments, the flap was stuck down. The only variation in procedure was that instead of shuffling the six cards with my back turned at Table B, I carried the pile *face* upwards to the sitters' table, sat down there and shuffled the cards out of sight under the table, withdrawing them to the table level, backs upwards and sliding them one by one on to the table, as before. As before, the pile was bent backwards and forwards two or three times under the table. The times taken by Marion from the instant when the first card was slid on the table to the instant when a final choice was made were for ten of the eleven experiments, thirty-five seconds, nineteen seconds, thirty-five seconds, twenty seconds, twenty seconds, thirty-five seconds, twenty-five seconds, eighteen seconds, twelve seconds, fifteen seconds, respectively. In the last three of these eleven trials, the manipulation was performed by Mrs. Goldney, there being no alteration in the procedure.

At Sitting No. 11 [4.30 p.m.] another five experiments of this series were done, the procedure with regard to shuffling being the same as in the batch of fifteen done at Sitting No. 7 [*i.e.*, the cards were shuffled at Table B.].

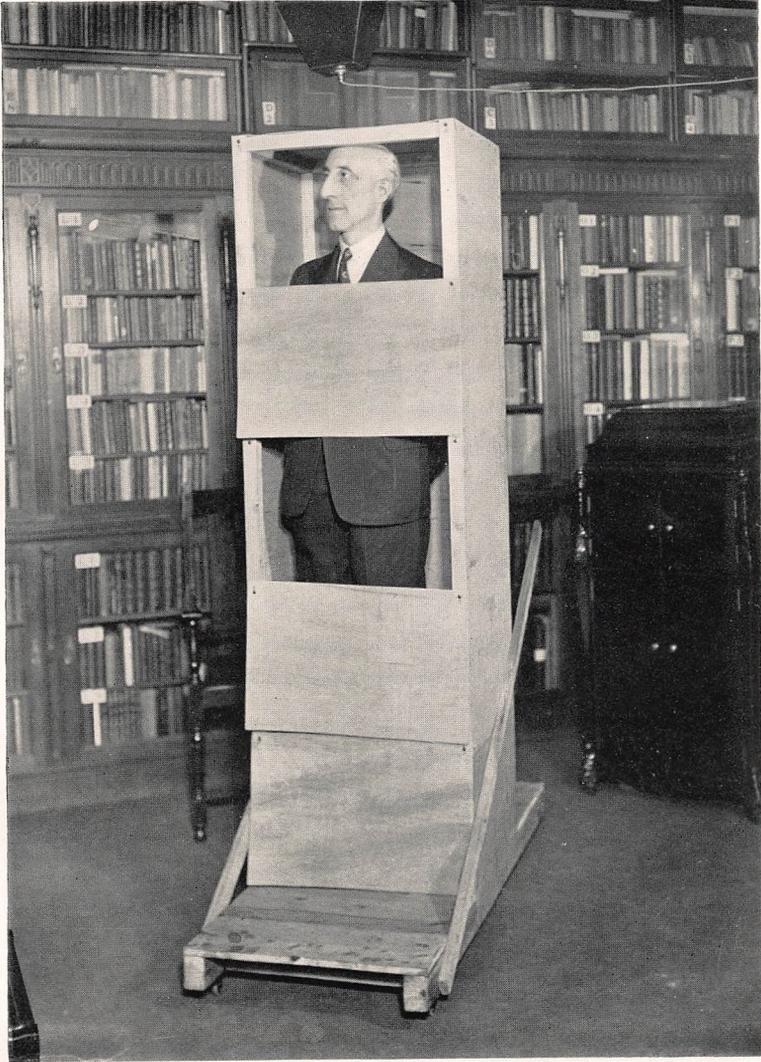
The results of the series are given below in Table IV [Series (iv)].

TABLE IV. SERIES (iv).

<i>No. of Sitting</i>	<i>No. of Trials</i>	<i>No. of Successes (First Try)</i>
7	15	5
9	11	5
11	5	2
TOTALS	...	31
		12

The chance of getting twelve or more successes in thirty-one trials is nearly 1 in 355, which is quite a significant result.

It was towards the end of Sitting No. 9 that the sitters began to notice that the red card, as it lay face downwards on the table, could sometimes be picked out from the others by a very slight flex that the others did not seem to possess. This difference was not always obvious even in cases where Marion



"Sentry-box" apparatus, with panels 1 and 3 removed, constructed to test the theory that Marion finds hidden objects by acquiring *indicia* from the experimenters.

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was successful, but on certain occasions the sitters themselves were able to pick out correctly the red card. For instance, in the seventh experiment [4.15½ p.m.] at Sitting No. 9, when the cards were spread out before Marion, Mr. Dribbel said that he could pick out the Four of Hearts. Marion chose a different card and his choice was wrong. Mr. Dribbel chose a card which was correct. He said that he had distinguished the card by a little bend at the edge.

At the eighth experiment, both Mr. Dribbel and Mr. Collins said they could pick out the correct card. On this occasion, however, they were both wrong, and Marion was correct. At the next experiment, before Marion had time to choose a card, Mr. Dribbel picked out the correct card which was the Ace of Diamonds. He pointed out to us that it was distinguishable by a slight flex. This particular experiment is omitted from Table IV, since the card was turned up before Marion had made his choice.

For the last three experiments on this date, Mrs. Goldney took charge as I thought the flex might have been produced by withdrawing the card from the envelope and it was judged that Mrs. Goldney would be more expert with her fingers. In the ninth experiment, conducted by Mrs. Goldney, Marion chose the King of Hearts correctly and the sitters unanimously agreed that, on this occasion, they could not detect any flex that would serve to distinguish it from the other cards. In neither of the next two experiments could the sitters pick out the correct card by noticing a distinguishing flex but Marion also failed in both these trials. At the third experiment in sitting No. 11, both Mrs. Goldney and I chose a card which we thought was the red card—the same card, for we noticed that there was a slight flex at one end. Our choice was correct, but Marion, who chose two different cards, was wrong.

At the fourth experiment, Marion chose the correct card, but the sitters would also have chosen this card as they had noticed a slight flex at one end.

At the fifth experiment, Marion chose a card that was wrong and I then immediately turned up the right card and pointed out to the sitters a slight convexity which caused the card to stand out from the others. During these last five experiments, the pile had been bent vigorously backwards and forwards but this bending was obviously ineffective. I therefore determined to undertake, for purposes of comparison with Series (iv), a new series [Series (v)] in which, other conditions remaining the same, each of the six cards should be thoroughly reflexed before the shuffling took place. When Marion had handed me back the envelope containing the red card, I carried it away to Table B, and standing with my back to the sitters, I withdrew the card from the envelope and holding it close to me, face upwards, bent it thoroughly both lengthwise and cross-wise, and at the four corners backwards and forwards for about five to ten seconds. I then laid the card face upwards on the table and removed the top black card, treating it similarly. The whole operation took from half to one minute for the six cards. Inverting the pile, I then shuffled the cards, holding them face downwards while doing so. The cards were slid on to the table as before, face downwards. We commenced at 4.41½ p.m. in Sitting No. 11, and repeated the experiment twenty-three times.

At Sitting No. 25 I did another eight experiments. In order to save time, I had already prepared the envelopes containing the red cards at

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home, after thoroughly flexing each card separately as described above. I had also treated similarly all the black cards that I should need. The experiments were carried out in Marion's room at the Hyde Park Hotel, the piles of red and black cards being placed in envelopes in my suitcase which was behind a projection of the wall, invisible from the table at which Marion sat. When Marion handed me back the envelope containing the red card, I carried it away to this corner, opened it and gave the card a thorough re-bending. I then shuffled it with the top five black cards which had been sufficiently bent on the previous evening. The rest of the procedure was as in Sitting No. 11.

The results of this series are given below in Table V, Series (v).

TABLE V. SERIES (v). (Cards bent separately).

No. of <i>Sitting</i>	No. of <i>Trials</i>	No. of <i>Successes</i> (<i>First Try</i>)
11	23	5
25	8	2
TOTALS ...	31	7

We see, therefore, that by merely flexing the cards separately, we reduce the number of successes from twelve to seven, a number which is without significance when compared with the chance expectation of 5.1. Chance of seven or more successes = 1 in 4 (nearly). This may seem a trivial question—the mere bending of a card. But it is on such trifles that some of the claims to clairvoyance may have been based and such sources of error must be given careful attention.

Experiments with Millboard Cards.

In order to eliminate the question of flex in the cards, I had cut special cards made of millboard. Two hundred rectangular pieces of millboard were cut by machine to the size of a playing card, *i.e.*, 90 mm. by 60 mm., the thickness being 4 mm. The faces and edges were smooth though not so smooth as the surface of a playing card. As regards ordinary handling, the cards were unbendable and showed not the slightest flex unless great force was applied. In the exact centre of one of the faces of the card, I gummed a paper label, measuring 35 mm. by 67 mm., the edges being parallel to those of the card. In about the centre of the white paper label I painted in red ink a circular spot of diameter 23 mm. on about fifty of the cards and on the remainder an equilateral triangle in blue-black ink of side 23 mm. One side of the triangle was parallel to the long edge of the label.

We commenced experiments with the stiff cards in windowed envelopes at Sitting No. 12 on 23rd February, 1934, at 3.27 p.m. The experiment was watched by Mr. Harry Price, Mr. I. Grant Taylor, Miss Beenham, who took notes, and myself.

On Table B I had placed in readiness piles of millboard cards bearing the red spot and other piles bearing the black triangle—all cards with labels upwards. Marion sat at his usual place at the sitters' table. I proceeded to

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Table B and standing with my back to Marion, slid one of the "red" cards into one of the envelopes described on page 47, and provided with a window, taking care to hold the card close to me and face upwards all the time. I gummed down the flap, the label and red spot being now visible, but the back and edges of the card entirely hidden and inaccessible without tearing the envelope. The envelope was handed to Marion and he was watched very closely. Marion rubbed his finger up and down the front of the card through the little window, but did not pay attention to the edges of the envelope. He then handed me back the envelope and I carried it to Table B, where, standing with my back to Marion and holding the envelope window upwards, I tore open the flap and withdrew the card, laying it face upwards on the black pile. I then lifted the card together with the five black cards underneath from the pile, inverted the pile and shuffled it thoroughly. Holding the pile of six cards backs upward, I slid the cards one by one on to the table and pushed them in front of Marion. I allowed Marion to tap the cards and to feel the edges without lifting them. He tapped each card in turn and turned up the card with the red spot first try. The experiment was repeated thirteen times, using a different red card and a totally different set of black cards each time. In each experiment, Marion was allowed to tap the cards on the table and to draw his finger along the edges.

At the next sitting, No. 13, the series was continued and the experiment was watched by Mr. Harry Price, Mr. and Mrs. Alex. L. Dribbel, Mrs. A. Peel Goldney, Miss Beenham, who took the notes, and myself. The procedure was exactly the same as in Sitting No. 12 and six more trials were made, Marion being allowed to touch and tap the cards on the table.

The results are given in Table VI. Series (vi).

TABLE VI. SERIES (vi).

<i>No. of Sitting</i>	<i>No. of Trials</i>	<i>No. of Successes (First Try)</i>
12	13	4
13	6	0
TOTALS ...	19	4

We see that in nineteen trials, Marion obtains only four successes, compared with the three chance would predict.

Marion could only have obtained normal assistance in this series by carefully feeling the *edges* of the cards through the envelope with a finger. For here and there were extremely slight unevennesses in the grain that could possibly be detected by an extremely sensitive touch even through the envelope. The backs of the cards were so smooth that it is difficult to believe that anything could be felt through the envelope even by the most sensitive touch. As regards the edges, neither Miss Beenham nor I could feel anything through the envelopes that would distinguish one card from another, but Marion has undoubtedly a hypersensitive touch. Marion, however, did not concentrate on the edges in Series (vi), although we shall see that he did in a later series.

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I now had cut another hundred millboard cards similar in all respects to the first, except that more careful attention was paid to the cutting of the edges. In the centre of one face of each card, I gummed either a *red* five-pointed star or an identical *blue* star. The stars I bought by the hundred ready made of extremely thin paper that was gummed on one side. These regular stars were formed from a regular pentagon of side 10 mm. The edges of the cards were most accurately cut, but even so, there were extremely slight scratches here and there in the grain.

I commenced work with these new cards at Sitting No. 15 on Wednesday, 7th March, at 3.50½ p.m. There were present: Mr. Harry Price, Dr. E. J. Dingwall, Mr. C. E. M. Joad, Mr. H. S. Collins, Mrs. A. Peel Goldney, Mr. Alex. Dribbel, Miss Beenham, taking notes, and myself. The cards were enclosed in windowed envelopes as before and the only slight variation in procedure was that I had my piles of "red-star" cards and "blue-star" cards in readiness behind a curtain that was to be used for "hide-and-seek" experiments. The card was withdrawn from the gummed envelope and shuffled with five "blue-star" cards behind the opaque curtain, and the cards were slid on to the table face downwards as before. Marion was allowed to tap the cards and to feel their edges, but not to lift them. Seven experiments were done and Marion turned up the red-star at first try only once. At the second experiment, Marion was observed for the first time to hold the card tightly between his fingers and press hard on the edges, ruffling the edges of the envelope. This particular experiment, however, was not a success, Marion turning up the red-star only at the third try.

At Sitting No. 16 another seven experiments of this series were done under exactly similar conditions and in five of these seven, Marion again pressed very hard on the edges, ruffling the envelopes. The blue- and red-star cards were used and Marion was allowed, as before, to tap the cards on the table and to feel the edges.

At Sitting No. 20 three more experiments were done under the same conditions except that I put the red-star cards in their envelopes and gummed the flaps before coming to the sitting in order to save time. In these three experiments, Marion again pressed hard on the edges, ruffling the envelopes.

We may sum up the results of the above series in the following table.

TABLE VII. SERIES (vii).

<i>No. of Sitting</i>	<i>No. of Trials</i>	<i>No. of Successes (First Try)</i>	<i>No. of Successes (Second Try)</i>
15	7	1	2
16	7	3	2
20	3	1	1
TOTALS ...	17	5	5

Taking into account both "first-try" and "second-try" successes, the chance of getting ten or more successes in seventeen trials with $p = \frac{1}{3}$, is nearly $1/37$, which is only moderately significant. It seems probable that since the cards were non-flexible, and the faces were inaccessible to Marion's sight or

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touch, he got his clues from slight irregularities in the grain or curvature of the edges felt through the envelope. The vigorous ruffling of the edges strongly suggests this explanation. I should, of course, have made more certain of this had Marion remained in England for further experiments.

At Sitting No. 13, I carried out a series of seventeen experiments with the first set of millboard cards (black triangle and red spot) in which Marion was not allowed to see the card, but only to feel it in the dark. I had on Table B piles of cards bearing the red spot and other piles bearing the black triangle. The procedure was as follows:—The dark shutter, having been drawn, the lights were switched off and I handed Marion a millboard card bearing a red spot. Marion having felt the card for a few seconds, handed it back to me in the dark. Still in the dark, I mixed the card with five others bearing black triangles on their faces. The pile of six cards was now held in my hand with the faces all downwards. Feeling my way to my seat at Table A, I asked for the light to be switched on. I then slid the cards on to the table in front of Marion with their faces downwards, not knowing myself which card bore the red spot.

Marion touched each card with his finger tips and sometimes passed his finger along the edges without lifting the card. He then turned over a card, and if this was wrong, he turned over a second card. Entirely different sets of five "black" cards were used for mixing at each experiment, as well as a fresh "red" (spot) card. Eleven trials were made at Sitting No. 13 and six more at Sitting No. 14. The results are given in the following table.

TABLE VIII. SERIES (viii).

<i>No. of Sitting</i>	<i>No. of Trials</i>	<i>First-Try Successes</i>	<i>Second-Try Successes</i>
13	11	5	0
14	6	4	0
TOTALS ...	17	9	0

The chance of getting nine or more successes at first try in seventeen trials with $p = \frac{1}{6}$ is nearly $1/1511$, a highly significant result.

Since the cards are inflexible to ordinary handling, it seems clear that the recognition in this case was tactual, always supposing that Marion did not succeed in nicking or scratching the cards in the dark. Of this scratching or nicking, however, I was never able to find any evidence.

Using the same millboard cards (red spot and black triangle) I myself have attempted to identify a card which I had held in the dark, and which was afterwards mixed with five others, but in twenty trials I succeeded in getting only three successes at first try and two at second try, a result which could easily be ascribed to chance.

At Sittings No. 13 and No. 15, I performed a short series of experiments with the millboard cards in "window" envelopes, in which the technique was the same as that employed in Series (vi) with one important modification. When the card was removed from the envelope, and slid upon the table with five other cards, face downwards, Marion was not allowed to touch any of the cards until he had made his final choice. He then either indicated which card was to be turned up or turned up a card himself. A second choice was

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allowed if the first card turned up was wrong. As the millboard cards were inflexible, this experiment eliminated both tactual and visual recognition. Marion could only have succeeded normally in this experiment by either nicking or scratching the card through the envelope and afterwards identifying it by the scratch or nick. But I am confident that he did not nick or scratch the card as I was watching his fingers very carefully while he held the envelope.

The results of the experiment are to be found in the following table.

TABLE IX. SERIES (ix).

No. of Sitting	Type of Card	No. of Trials	First-Try Successes	Second-Try Successes
13	Millboard, spot and triangle ...	7	1	1
15	Millboard, blue and red star ...	3	1	1
TOTALS		10	2	2

Obviously the result is almost precisely what chance might be expected to produce and so far as it goes, it confirms our conclusion that when both tactual and visual recognition are excluded, Marion is unable to succeed.

To sum up, Marion appears to succeed with the millboard cards, when he is allowed to handle the naked cards at the commencement and finish of the experiment. Possibly also he succeeds, though to a lesser extent, when he is able to feel the *edges* of the cards through a fairly thin envelope and afterwards to touch the naked edges.

Experiments with Playing Cards Completely Concealed in Envelopes.

I have made only a few tests with cards completely enclosed in envelopes owing to Marion's aversion to this kind of test. Throughout the work Marion constantly emphasised that he must be able to feel (or "sense" as he called it) some portion of the playing card in order to identify it. Hence the "window"-envelopes used in the preceding tests. However, there is some slight evidence that Marion will sometimes succeed in recognising a playing card completely concealed in an envelope, provided that he has previously handled the card and the envelope is thin enough to allow him to feel the flexes of the card through the paper. The only evidence for this at all suggestive was obtained at Sitting No. 2 in the presence of a considerable number of witnesses which included Lord Bective, Dr. Sylvia M. Payne, Major W. Rose, Dr. Edgley Curnock, Mr. Harry Price, etc.

The playing cards used were those described in detail on page 8.55 p.m. I handed Marion the Queen of Hearts. Having stroked the card, Marion left the room accompanied by Mr. Richards. I then produced six white envelopes measuring about 7½ by 5 inches, all of the same material and quality. When a playing card was placed in one of these envelopes and the envelope was held close to the electric light bulbs, the dark outline of the card was just visible, but nothing of the design or pips on the face. This was tested after the experiment. I placed the card touched by Marion into one of the envelopes and into each of the other six envelopes I placed a different card.

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card. The envelopes were not sealed, but in each case the playing card was pushed to the bottom of the envelope so that it fitted with its greatest length parallel to the five inch edge of the envelope. The seven envelopes were then thoroughly shuffled by me under the table and then laid on the table. Marion and Mr. Richards were then recalled. In full view of everyone Marion held the envelopes, one by one, in his hands and within two minutes he stated that a certain envelope contained the Queen of Hearts. This was opened and found to be correct.

Mr. Price then provided me with six opaque brown-paper envelopes of about the same size and thickness as the preceding envelopes. I handed Marion the Jack of Hearts and, having tapped it, he left the room with Mr. Richards. The card was put into one of the brown envelopes and a different card was placed into each of the five other envelopes. In order to make the shuffling more effective, the light was switched off and the six envelopes were thoroughly mixed by me on the table in the dark so that when the light was switched on, no one in the room knew which envelope contained the Jack of Hearts. As before, the cards had been carefully pushed to the bottom of the envelopes. Marion and Mr. Richards were recalled. Marion took each envelope in his hands in turn and seemed to feel the card through the envelope. He then chose an envelope which he said contained the card, within a minute of entering the room. I opened the envelope and found he was correct. The chance of Marion succeeding in both experiments is of course $\frac{1}{6} \times \frac{1}{5} = \frac{1}{30}$.

Subsequent experiments with envelopes failed, however, to confirm this happy result. Using Mr. Price's opaque, brown paper envelopes and the same technique described in detail in the last experiment, we did another seven experiments—three of these at Sitting No. 3 and four at Sitting No. 5. In all these seven tests, save one, the card "sensed" by Marion was placed in an envelope and mixed with five other envelopes each containing a card. In one experiment, however, nine envelopes were used instead of six. In each case, on returning to the room Marion fingered the envelopes or pressed them with his palm. He did not gain a single success at first try, but scored three successes at second try. There is, of course, no need to ascribe this result to anything beyond chance, and it seems probable that the two successes obtained at Sitting No. 2 were also fortuitous.

An additional experiment with the same brown envelopes was done at Sitting No. 5 which included the following modification. The six envelopes used were marked A, B, C, D, E, and F. Now in this case all the sitters knew that the card "sensed" by Marion—the King of Diamonds—had been placed in envelope C. When Marion was recalled to the room, the sitters were able to follow this envelope with their eyes throughout Marion's manipulations. However, Marion did not succeed at either first or second try in selecting envelope C.

At Sitting No. 3 I brought with me twelve extremely stout and absolutely light-proof black envelopes. At 2.42 p.m. I handed Marion the King of Diamonds and, having stroked and tapped it, he left the room. The card chosen was placed in one of the black envelopes and a different card placed into each of five other black envelopes. The envelopes were then thoroughly shuffled in the dark and the light having been switched on, Marion was recalled. Marion felt each of the six envelopes in turn and selecting two, opened them but neither contained the King of Diamonds.

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I then repeated the experiment using the same King of Diamonds and the other six envelopes. Marion again failed at both first and second try. He said that he could get no feeling whatever with these black envelopes, and that it was useless for him to continue with them. Marion's statement is instructive and strongly suggests that the black envelopes were too thick and stout to allow him to feel the flexes of the card inside.

Throughout the card experiments, Marion claimed that he obtained his results by a faculty of clairvoyance. I do not think that anyone who reads this section carefully will agree with him. I submit that there is abundant evidence that what he relies upon mainly is his sense of touch. In such experiments as those of Series (iii) where he does not touch the cards but merely waves his hand over them, he probably recognises the card visually by the flex he has imparted to it during his previous handling. Whether Marion would be able to emulate the blind osteopath, Captain Lowry, and distinguish the pips on a card by sense of touch alone, I cannot say. But if he returns to England, it is an experiment I propose to make with him. All I feel sure of at present is that Marion possesses a highly developed sense of touch in his fingers as well as a good tactual memory. In the next section we shall see that there is little reason to suppose that Marion possesses any clairvoyance in the true paranormal sense of the term.

SECTION III

OTHER EXPERIMENTS IN PARANORMAL PERCEPTION

A. Experiments with Sealed Envelopes.

(a) The first experiment which I shall describe is due to Mr. Harry Price. It was an attempt to ascertain whether Marion is able to recognise and distinguish colours when sealed up in opaque envelopes—or alternatively, to discover whether he is able, by handling several strips of coloured paper, to say which envelope contains a piece cut from the same sheet as the strip which he has handled.

In readiness for the experiment, Mr. Price had taken seven strips of paper, all of similar material and coloured, respectively, red, blue, green, lavender, white, yellow and black. Each strip of paper was enclosed in a sheet of black, opaque photographic paper as used in packing sensitised plates. Each piece of coloured paper thus wrapped up was placed in a plain white 8vo commercial envelope measuring $5\frac{1}{2}$ by $3\frac{3}{8}$ inches. The envelopes themselves were for ordinary purposes opaque, but the photographic paper made the control more perfect. Into an eighth similar envelope was placed a black paper wrapping which contained seven smaller pieces of the same paper coloured, respectively, yellow, red, blue, white, lavender, green and black. All the eight envelopes with their contents were identical in weight, size and feel. We may refer to the envelopes as the black, white, yellow, red, blue, green, lavender and "mixed", respectively.

The experiment took place at Sitting No. 4, on Thursday, January 25th, 1934, shortly after 10 p.m. During the experiment, Mr. Price stood aside after handing me the eight envelopes still unsealed. I removed the black paper containers from the envelopes and, without knowing the colours of the strips inside, I shuffled the envelopes and replaced each black container in an envelope. I then sealed all the envelopes. No one in the room could now know by normal means the colour inside any given envelope. The eight envelopes were then shuffled and placed on the table before Marion. Seven strips of coloured paper cut from the same respective sheets as were the strips inside the envelopes were placed at his disposal and he was asked to lay each strip on the appropriate envelope, leaving uncovered the envelope which he thought contained the pieces of all colours.

Marion having held each envelope in turn, discarded two of them, saying that in the case of these two, he could get no impression. He then laid a coloured strip on each of the remaining six envelopes. I then, in the presence of the large audience, cut open the envelopes, took out the strips, and laid them on top of the corresponding envelopes. As I did so, I wrote on the

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envelope Marion's guess as well as the strip which it had contained. The results which were recorded by Miss Beenham are as follows:

<i>Colour of Contained Strip.</i>	<i>Marion's Guess.</i>
1. Green	Blue
2. White	Green
3. Red	White
4. BLACK	BLACK
5. LAVENDER	LAVENDER
6. 'Mixed'	Red

Marion has, therefore, scored two successes and we require to know what is the chance of obtaining two *or more* successes in this experiment. The problem depends on the number of ways in which counters numbered one to eight can be placed into six holes numbered one to six, with the proviso (a) that no counter shall bear the same number as the containing hole, *or* (b) that just one counter shall bear the same number as the containing hole. It is an elementary though very tricky exercise in permutations.

I find that the chance of getting two or more successes works out to .171, *i.e.*, to a chance of about one in 6, nearly. Such a result is, of course, without significance.

At Sitting No. 6 on 1st February, 1934, the experiment was repeated. In this case the envelopes were prepared by myself at home. I used only six enveloped and six pieces of paper coloured, respectively, white, blue, green, black, red, and yellow, leaving out the lavender and the "mixed" colours. The strips were as before wrapped securely in pieces of black photographic paper such as is used in packing sensitised plates. The envelopes were plain white letter envelopes of good quality and fair thickness. As the experiment was to be in the evening, and I could not be present, I handed the six envelopes, already sealed, personally to Mr. Price who took charge of them. I left also six pieces of coloured paper cut from the same sheets as the strips contained in the envelopes. The experiment was performed by Mr. Price at 9.24 p.m., and I quote Miss Beenham's notes.

"Six envelopes left by Mr. Soal are then taken. Each envelope contains a coloured piece of paper and the flap of the envelope is stuck down. Each piece of coloured paper had been wrapped in an opaque piece of photographic paper before being put into the envelope. Six pieces of coloured paper, each piece taken from the same sheets as the pieces of coloured paper in the envelopes are given to Marion. He is asked to try to match the colours given to him, with the colours in the envelopes. He takes up one envelope and then holds each coloured strip in turn, fingering the envelope and colour simultaneously. [There are white, blue, green, black, red and yellow.] He then puts this envelope aside with the red piece of paper. He takes another envelope and feels first the yellow piece of paper and then the white piece. He then puts aside the envelope with the yellow piece of paper, the next envelope he feels with the blue piece of paper. He holds the envelope in one hand and the piece of coloured paper in the other, and feels each with his fingers. He puts this envelope aside with the blue piece of paper. The other two envelopes he quickly puts aside with the black and green pieces of paper, respectively. This takes him three minutes. Mr. Price then writes on the outside of the envelopes the colours which Marion has selected to represent the corresponding colours inside the envelopes. Mr. Price then opens each envelope . . ."

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The results are given below:

<i>Colour of Contained Strip.</i>	<i>Marion's Guess.</i>
1. White	Red
2. Black	White
3. Blue	Yellow
4. Red	Blue
5. GREEN	GREEN
6. Yellow	Black

Marion thus obtains one success only. We want, therefore, to know what is the chance of getting one or more successes in this experiment. The problem reduces to the old problem of the random placing of six letters into six differently addressed envelopes so that no letter is sent to the right address.* The chance of this happening is $\frac{1}{2!} - \frac{1}{3!} + \frac{1}{4!} - \frac{1}{5!} + \frac{1}{6!} = \frac{5^3}{1^4 \cdot 4}$. Hence in our problem the chance of getting *one or more* successes is $1 - \frac{5^3}{1^4 \cdot 4} = \frac{9}{1^4 \cdot 4}$. That is to say, by chance alone, Marion ought to do as well or better than he has just done in about three times in every five. The result can therefore with confidence be ascribed to chance.

At Sitting No. 22 I again repeated this experiment using, instead of strips of coloured paper, eight cards bearing pictures of animals. The cards were taken from a pack of "animal cards" of superior quality, each card being of the same size as an ordinary playing card and having a back like that of a playing card. The eight cards bore, respectively, the pictures of an owl, a yellow canary, a farmyard cock, a duck, a sheep, a blackbird, a donkey, and a pig. The colours were appropriate to the creatures depicted. Each card was wrapped in black photographic paper in such a way that the face of the card was completely covered and the back uncovered except for an overlap of black paper all round of about half-inch. I had prepared eight envelopes into which the covered cards would just fit. In the face of each envelope was cut a rectangular window. The card and its black paper covering were placed in the envelope with the *back* of the card showing through the window. This back, therefore, could be felt by Marion while the face, bearing the picture, had a layer of black paper between it and the envelope. The envelopes were all of the same size and make and were sealed.

The sitting commenced at 2.30 p.m. on Friday, 18th May, 1934 [Sitting No. 20]. I handed Marion eight duplicate cards from an exactly similar pack. The eight envelopes were thoroughly shuffled and I then asked Marion to lay any two aside. These two I put in my pocket. I then asked him to choose any six of the eight cards and place them on what he thought were the corresponding envelopes.

"Marion takes up one of the picture cards and places it on one of the sealed envelopes. He then takes a second picture card and places this on another of the sealed envelopes. He does this till six of the eight cards are placed one on each of the six envelopes. . . Mr. Soal then breaks open the envelopes." [Miss Beenham's notes.]

The result was as follows:

* For the generalised problem cf. *Theory of Probability*, by W. Burnside, F.R.S., p. 21.

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Picture on Contained Card.

1. Owl
2. Canary
3. Cock
4. Duck
5. Blackbird
6. DONKEY

Marion's Guess.

- Canary
Owl
Duck
Cock
Sheep
DONKEY

Marion therefore obtains one success.

The chance of getting one or more successes in this experiment works out to .52. That is to say, it is about an even chance whether Marion will get no successes at all or will get one or more.

(b) *Experiment to test hyperacuity of vision.*

I brought to Sitting No. 14 [Friday, 2nd March, 1934] thirty-five sealed envelopes. The envelopes, all of the same size and quality, measured 5 by $7\frac{1}{2}$ inches. Into each envelope I put a strip of either red or black paper measuring $4\frac{1}{2}$ by 3 inches. Nineteen of the envelopes contained strips of red paper and the remaining sixteen strips of black paper. The envelopes were of such a thickness that when an envelope containing a red strip was held against the inside of a window pane of south aspect, the red colour was just discernible. If, however, a person was seated anywhere at Table A with the electric light on, he could not distinguish the red colour unless he held the envelope above his head to within a foot of the electric light bulb.

At 4.23 p.m. the electric light being on I produced from my case the thirty-five envelopes which I had previously shuffled in a thorough manner. I handed the envelopes one after another to Marion who was seated in my usual place at Table A. Marion was told that he could lift the envelope, but not more than an inch or two above the table. He could also turn it over. Marion scribbled a B or an R on the front of each envelope according to whether he imagined it to contain a black or a red paper. He then handed me back the envelope and took the next. These were recorded by Miss Beenham. Without opening the envelopes, I held them one by one close to the electric light when the contents became clearly visible. Mr. Fleming called out the colour of the paper inside each envelope. If Marion was wrong in his guess, I put a cross on the envelope.

The result was as follows:

Marion in his guesses said "red" eighteen times and "black" seventeen times.

Of the nineteen envelopes containing red papers, Marion guessed nine correctly.

Of the sixteen envelopes containing black papers, he guessed seven correctly.

These results are, of course, almost precisely what chance might be expected to produce.

The experiment, therefore, fails to reveal any hyperacuity of vision through the envelopes.

(c) *Experiment to test Marion's Alertness.*

I wished to ascertain by this test how far Marion would succeed in reading the contents of a number of sealed envelopes by availing himself of normal means which were left for him to discover. I purchased twelve thin

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white cards (2 by 3 inches) on which were printed in thick black type the numbers 1, 2, 3 . . . up to 12, the figures being .9 inches high.

I placed each card in an envelope measuring 7 by $4\frac{1}{2}$ inches, the cards being pushed to the bottoms of the envelopes so that the longer edge of the card was parallel to the $4\frac{1}{2}$ inch edge of the envelope. The twelve envelopes were then sealed. These envelopes were so thin that when one of them was held at such an angle that the face of the card inside fell against the inner face of the envelope, the printed number became sometimes faintly visible to a person of normally good eyesight and could be deciphered. When the envelope was held close to the electric light, the enclosed number was plainly legible.

I performed the experiment at Sitting No. 13 on Wednesday, 28th February, 1934, at 3.32 p.m., the electric light being on. Marion sat in my usual position at Table A. I produced the twelve envelopes which had been thoroughly shuffled and told Marion that they contained the numbers one to twelve. I told him that he was free to hold the envelope at any angle provided that he did not raise it more than three or four inches above the table. I let Marion believe that the experiment was an ordinary experiment in paranormal perception. Marion took the first envelope and drew a seven on it. I then opened it and it contained the number four. Marion took the second envelope and held it in his hands. He then drew on it what appeared to be ten. I opened the envelope and it contained five. After this Marion held each envelope at an angle to the table and began to be successful in his guesses. Each envelope was opened immediately after he had made his guess. I will give now the results of the experiment.

<i>Contained Number.</i>	<i>Marion's Guess.</i>
4	7
5	10
6	6
1	1 or 7
10	10
3	3
12	11 or 12
8	8
9	5 or 6
7	1 or 7
2	2
11	11

I did not reveal to Marion the real object of the above experiment. The results, of course, show clearly enough that Marion read the numbers through the envelopes and this implies a certain cleverness. Nevertheless, I think that a more intelligent man would have confessed that he was reading by normal vision and not by any magical means. Further, it is clear that Marion does not make full use of his data. In the fourth trial, he hesitates between one and seven, probably because the printed one had a small tick to it, but though he has seen that the one is now "out" he again hesitates between one and seven in the tenth trial. Similarly, in the ninth trial though he ought to know that both the five and six are "out" he still hesitates between five and six, and mistakes the nine for a six, though he had been told that he had rightly guessed the six in the third trial. Marion's cleverness seems to imply a quickness of visual perception rather than an intelligence based on rational inference.

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But the experiment shows that Marion will take any advantage of normal means placed within his reach, without acknowledgment that he is employing such means, c.f. Section I, page 21. Immediately the above experiment was finished I produced another set of twelve sealed envelopes which I had prepared in a somewhat different way.

I took first twelve envelopes exactly similar to those used in the preceding test and cut off their tops so that they now formed open paper bags measuring 4 by $4\frac{1}{2}$ inches. I then took twelve cards identical with those described above, bearing the numbers one to twelve and placed a card inside each paper bag, pushing the card to the bottom as before. I then took twelve very stout envelopes each measuring $4\frac{1}{2}$ by 7 inches, and fitted the paper bags containing the cards into these stout envelopes, pushing them to the bottom so that the 4-inch edge of the bag was parallel to the $4\frac{1}{2}$ -inch edge of the outer envelope. The envelopes were then sealed and when they were held close to the electric light, the dark outline of the card could be very faintly seen, but not a trace of the printed number. Marion held each envelope in turn and wrote on it his impression of the number inside. This time, the envelopes were not opened till all twelve guesses had been registered.

The result was as follows:

<i>Contained Number.</i>	<i>Marion's Guess.</i>
4	5 or 6
7	6 or 10
5	3 Sure
3	1 or 7
2	1 or 5
11	1 or 11
12	7 or 2
10	9 or 8
1	11 or 2
9	8 or 9
8	7 or 5
6	7 or 1

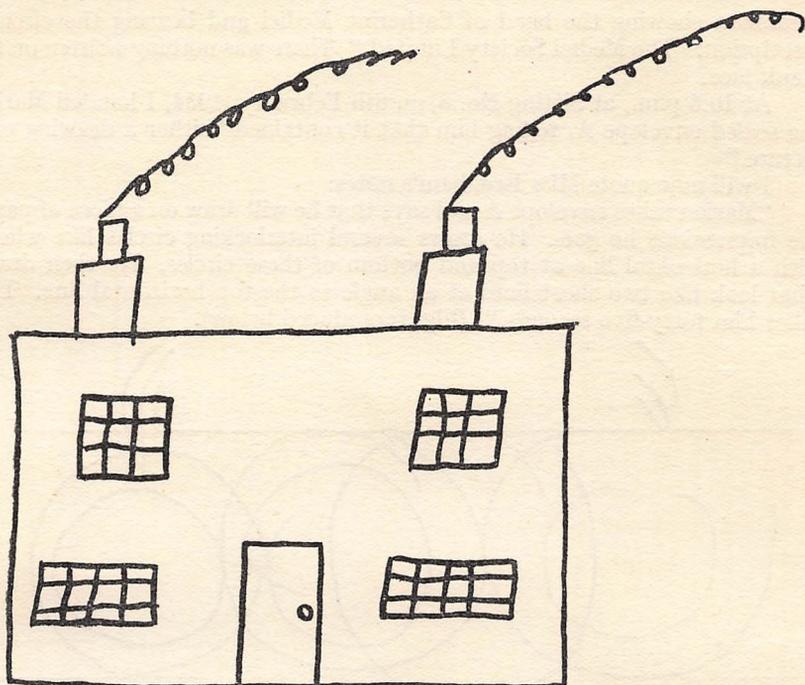
Thus, with his "first-try" guesses, Marion has not achieved a single success and only two successes at second try.

It does not require any statistical evaluation to decide that Marion is now completely at sea. His "faculty" only functions when the envelope is sufficiently thin for him to see the contents through the paper. And I say this without any disparagement of Marion, for, in spite of all the vast tomes that have been published on psychical research, I have yet to meet the human being who under similar conditions can do what Marion has failed to do!

(d) *Experiment with Drawings in Sealed Envelopes.*

Previous to Sitting No. 8, I purchased three very thick stiffish envelopes measuring 7.6 by 5 inches, and of a pale brown colour. I marked the envelopes A, B, C, on the outside. In envelope A I placed, unfolded, a rectangle of white writing paper measuring 5.3 by 4.3 inches on one side of which I had drawn in black ink a simple picture of a cottage with spirals of smoke issuing from its two chimneys. (Reproduced on next page).

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In envelope C I placed, unfolded, a rectangle of the same white paper measuring 6.1 by 4.4 inches, on which I had drawn a parallelogram of sides 3.8 by 2.8 inches and angle of about 80° . This parallelogram was divided into a network of equal small parallelograms by drawing parallels to the sides, there being seventy-seven such small lozenge-shaped figures. The whole was drawn in black ink.

In envelope B I placed a picture postcard, one of a series called "Out of Doors". On one side of the card was a picture in colours entitled "Autumn Sprite" which depicted a young girl with flowing black hair and clad in diaphanous material, dancing on some short grass beneath a spray of foliage. Her arms were outstretched and there were cymbals in her hands. A few yellow leaves were falling through the air and she seemed to be standing on a grassy hill-top with a range of blue hills in the background.

The three envelopes were then sealed and when held close to the electric light, were of such thickness and texture that neither the drawings nor outlines of the sheets of paper were visible. Neither was the outline of the postcard visible. On the reverse of this postcard were the usual blank spaces for stamp and four horizontal lines for the address. Along the left-hand edge of the blank side were the words:

OUT OF DOORS

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Engraved and printed in England. (Published in the United States, by Hale, Cushman & Flint, Inc., Boston, Mass.)

In the left-hand bottom corner of the blank face was printed a small circular

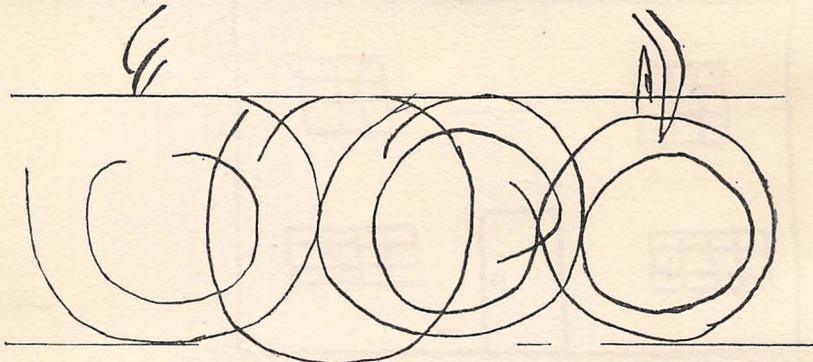
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medallion showing the head of Catherine Medici and bearing the circular inscription: "The Medici Society Limited." There was nothing written on the blank face.

At 10.5 p.m., at Sitting No. 8, on 8th February, 1934, I handed Marion the sealed envelope A, telling him that it contained "either a drawing or a picture."

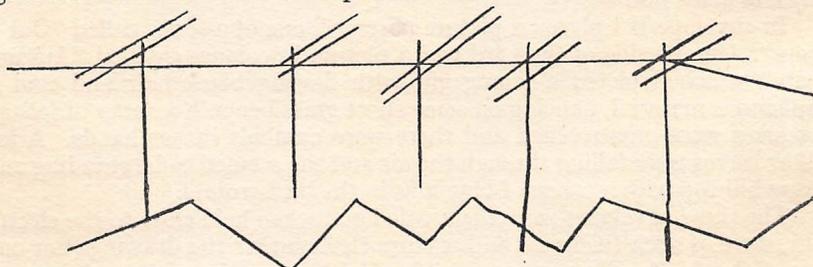
I will now quote Miss Beenham's notes:

"Marion takes envelope A and says that he will draw on a piece of paper the impressions he gets. He draws several interlocking circles like wheels with a horizontal line at top and bottom of these circles. He then draws what look like two short lines at an angle to the top horizontal line. This takes him forty-five seconds." (Fig. reproduced below).



MARION'S DRAWING FOR ENVELOPE A.

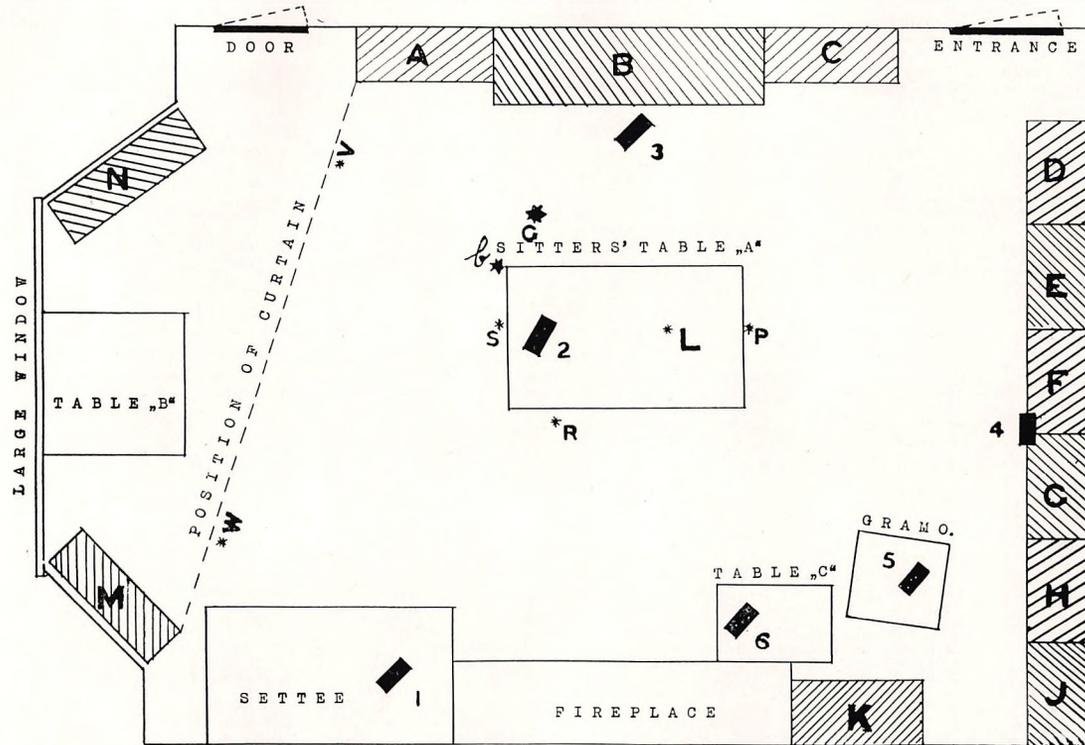
"He then takes envelope C. He holds it in his hand for a second or so, and then draws several vertical lines with a zig-zag line along the bottom of these lines. This took thirty-nine seconds." [Fig. reproduced below.] Marion had again been told that "the envelope contains either a drawing or a picture."



MARION'S DRAWING FOR ENVELOPE C.

"He then takes envelope B and holds it in his hand. He says that there are many different faces of different persons. The persons' faces show looks of surprise. The expressions are ones of surprise. He then says that there is a little square on the back. He draws this on a piece of paper. It is a square with a little circle in the middle of it. Time: two minutes, fifty-five seconds." Miss Beenham's notes. As before, Marion had been told "that the envelope contained either a drawing or a picture." Marion's drawing of the "little square" is reproduced at top of page 65.

FIGURE I. PLAN OF SÉANCE ROOM. SCALE $\frac{1}{4}$ INCH = 1 FOOT.



A—H, J, K, M, N=Bookcases.

1—6=Positions of Tin Boxes, shown as black rectangles.

S*=S. G. Soal's Seat.

P*=Harry Price's Seat.

L* = Hanging Electric Light above this point.

W* = Position of Sentry Box in experiment (p. 33).

V* = H. S. Collins' Seat in experiment (p. 27).

R* = Miss Beenham's position.

G* = Mrs. Goldney's Seat in experiment (p. 72).

[Faint, illegible text, possibly bleed-through from the reverse side of the page]

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"Many people were against him" certainly applies to his career in England, but they were simply trying to persuade him, for his own good, to give up a subject in which it seemed evident he had no ability. But the statement that "the reason people were against him was because he came out with some new ideas" is not true, if it is meant to apply to the period when he was in England. Dr. Z, when in England, was never known as an undergraduate to produce any new ideas so far as his subject was concerned. The statement that "The opposition was unjust" therefore, is absolutely untrue though Dr. Z who had immense confidence in himself may have imagined he was unjustly treated.

The personal description, though vague, is fairly good—as far as it goes—except perhaps in two particulars. As I knew Dr. Z in 1923, he possessed such an abundance of hair that it seems improbable that he has lost it in eleven years. Further, his complexion was naturally pale and not at all red. The deep-set eyes and bulging forehead and round face are fairly correct bits of description. In 1923 Dr. Z told me that he was thirty-eight years of age, so that the age stated fifty to sixty is a little too high. "Tall, not slim" is also accurate, for Dr. Z is a tall, broad-shouldered man. But he was certainly alive on 16th February, the time of the sitting, and was alive in December, 1935, when I last heard from him. During his last year in England, I knew him intimately and can certainly testify that he is "one of the best" and I have been amazed as well as gratified by his practical success in a career for which—to all his English friends—he appeared to be so badly handicapped.

But while admitting that, in a vague sort of way, Marion has scored now and then in his remarks about this man, the coincidences do not seem to be more than chance ones. There is the bad mistake about the man's death. Marion would probably be able to get the impression of a vigorous personality from the crabbed, vigorous quality of the handwriting. That he was a man of "new ideas" is clear from the statement in the letter that "Mr. ——— gladly accepted my suggestions for both volumes", etc. He is obviously not a young man for, if he were, it is improbable that he would be making the suggestion of some academic undertaking to a man much older than himself.

The case seems to me to be one of rational inference by Marion from the given data supplemented by lucky guessing.

A few minutes later on the same date, I handed Marion a rectangular strip of bluish paper which was cut from a letter. One side of the slip (4.4 by 3.5 inches) was covered by nine lines of handwriting in black pencil and the other side was blank. Marion was asked to describe the writer and to say if he were alive or dead.

you a photo of the house.
I took it when on leave
if you remember but had
not time to develop same
then; it will remind you of
what the garden was
like; you could send it
to Charlie if you like.
By the way is he likely

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When he had held this strip, Marion said "This writer is a middle-aged man, good-hearted and likes a quiet life. Living." [in reply to the question if the writer were alive or dead.]

Now for the facts. The slip was cut from a letter written by my brother, the late Frank Soal, while serving with his unit in Ireland. He was subsequently sent to France and died of wounds received in action in September, 1918. He was nineteen years of age at the time of his death.

Marion could scarcely have been farther from the mark.

STATISTICAL TEST.

In order to test Marion's claim that he was able to say by holding a letter if the writer were living or dead, I procured a number of letters and portions of letters, each of which was written by a different person. In all, I obtained forty such letters or portions of letters and of these twenty of the writers were living and twenty dead at the time of the experiment. In each case, the fact of death was definitely known or it was definitely known that the writer was alive. Of these forty letters, twenty-five were provided by Mrs. A. Peel Goldney, five by myself and the remainder by Mr. Harry Price. The letters provided by Mrs. Goldney and myself were without exception, letters from relatives or private friends. But two of the letters belonging to Mr. Price were from the late Houdini and the late Sir Arthur Conan Doyle, and there was another from Mr. Leslie Curnow deceased, who was prominent in the spiritualist movement in England. I think it in the highest degree improbable that Marion would be familiar with the handwriting of any of the other writers. In the actual test, he guessed that Houdini was dead, but that both Conan Doyle and Leslie Curnow were alive, which shows that he did not recognise even Sir Arthur Conan Doyle, let alone Leslie Curnow. Most of the letters were single sheets of paper or half sheets, bearing neither address nor signature. In cases where there was a signature or an address, the letter was folded in such a way that when Marion held it, neither the date, signature, nor address could be seen. The oldest of the letters dated back to 1905 and this letter, provided by Mrs. Goldney, certainly possessed a faded appearance. The next two oldest letters were written in the year 1913, and next after these was a letter written in 1918. In the case of the three letters written in 1905 and 1913 Marion was wrong in all his guesses. Previous to the actual experiment, Mrs. Goldney had taken the forty letters and, after folding each with care, had put them into forty plain envelopes which were left unsealed. She then thoroughly shuffled the envelopes and after shuffling, numbered them one to forty. Then, in order to avoid errors, she wrote in pencil the corresponding numbers on each of the contained letters. She had, previous to folding the letters, marked each in pencil with a number in shorthand and had compiled a list of the names of the writers opposite the shorthand numbers marked on the letters. After the shuffling and numbering of the envelopes, she now made use of the shorthand numbers on the letters to compile a new list of names opposite the numbers written on the corresponding envelopes.

Mrs. Goldney brought the forty envelopes thus numbered to Sitting No. 10 and at 4.4 p.m. the experiment commenced. During the experiment, Mrs. Goldney occupied herself in another part of the room, knowing nothing

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of what was going on at the experimenters' table. As Mrs. Goldney would have recognised the handwriting of a large proportion of the letters, it was thought best to avoid the possibility of her giving any kind of hints to Marion. As for myself, I had up to now seen only my own five letters and these I certainly recognised as I handed them to Marion, but none of the others. Miss Beenham sat at the same table, but at the other end, as it was thought she might possibly recognise some of the letters provided by Mr. Price. Mr. and Mrs. Chance and Mr. Alex. Dribbel watched the experiment, but none of these had previously seen the letters. I sat next to Marion and took up the envelopes in the order in which they were numbered one to forty. This order had been originally determined by shuffling so that now there was no possibility of any systematic sequence of the letters as regards "dead and "living". I handed the folded letters to Marion one by one, replacing each in its envelope when Marion had given his verdict. I called out the number, which was recorded by Miss Beenham, together with the words "alive" or "dead". Nos. 14 and 26 proved to be typewritten letters and in the case of these two, Marion said he could get no impression. In the case of No. 35, Marion said he was "not sure as the person is an old man—he may be dead". We have, therefore, to discard Nos. 14, 26, and 35.

Of No. 38, Marion said, "very alive; never was ill". In the case of Nos. 24 and 37 I asked in addition for a personal description; these were the cases of Dr. Z, and Frank Soal, discussed above. At the end of the experiment, we did not tell Marion how far he was correct in his guesses, as it was hoped that we might be able to repeat the experiment after an interval.

Discarding Nos. 14, 26, 35, we have thirty-seven persons, of whom twenty were alive and seventeen dead at the time of the experiment. Now in his thirty-seven guesses, Marion favoured "alive" twenty-nine times and "dead" only eight times. Hence for the "alives", the expected number of correct guesses = $\frac{2}{7} \times 29 = 15.7$. The actual number of correct guesses for the "alives" = 18. And for the "deads" the expected number of correct guesses = $\frac{1}{7} \times 8 = 3.7$. The actual number of correct guesses for the "deads" = 6. The differences between the actual and expected numbers are too small to be of any significance.

The folding of the letters had been undisturbed by Marion.

The experiment is, of course, on too small a scale to be really conclusive, but it strongly suggests that Marion's claim has no real basis in fact. If he does possess a faculty which enables him to distinguish dead from living people by inspecting their handwriting, it must—judging from the results of the above experiment—be such a slight faculty as to be of little practical value to him in his stage work.

SITTERS' EXPERIMENTS.

I shall now describe a few experiments in "psychometry" that were not under my personal control in so far as the choice of the objects or the subsequent verification of the statements is concerned. It was inevitable that sitters, especially at the demonstration *séances*, should desire to test Marion's powers for themselves. In such cases, I did my best to secure afterwards the pertinent facts which would serve to corroborate or to confute Marion's statements. But I had, of course, to rely upon the accuracy and veracity of the people concerned.

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The following incident took place at Sitting No. 3 at about 4.15 p.m. Miss Beenham took the notes as usual. The notes read: "Dr. J. A. Hewitt then handed a printed card to Marion. Marion says that it belonged to a man who tried very much. He went through different kinds of work and changed a lot. Never a hundred per cent sincere—came into difficulties—against the law—many quarrels—he disappears for a time, and comes back in 'another position again'. Marion then says that he will describe its connection with Dr. Hewitt. He says that he (the man) met him in disagreeable circumstances. The owner of the card tried to do the dirty on him [*i.e.*, on Dr. Hewitt]—not a nice feeling he gets. He tried to do some damage in connection with you [speaking to Dr. Hewitt]—the matter is not finished yet. Marion then says that he does not like the matter."

Dr. Hewitt then explained that he knew really nothing about the owner of the card. But it seems that this man had wrecked Dr. Hewitt's car by running into it from behind with his own car. Dr. Hewitt said that he was going immediately to see his legal adviser about the wrecked car with a view to making the man pay him for the damage.

Marion then remarked "that he will have much trouble and he is doubtful if he will get the best of it."

The card was the business card of a well-known motor manufacturer. In reply to a letter which I addressed to Dr. Hewitt several weeks later, he told me that Marion's forecast of trouble had not materialised. He had had no dealings with the man who had wrecked his car as the man was not responsible, his own car having been struck from behind by yet another car and thus impelled on to Hewitt's car. There had been no trouble whatever—the whole thing had gone smoothly and "apart from the time it has taken has given no trouble of any kind." Marion's prediction of "much trouble", therefore, seems to have been false, as there was no litigation.

In this same letter [dated April 24th, '34] Dr. Hewitt says that as he had no dealings with the man, he could not give me any information throwing any light on Marion's estimate of the man's character "Never a hundred per cent sincere", etc.

The only really interesting statement in Marion's reading is the statement that Dr. Hewitt and the owner of the card met in disagreeable circumstances. But the following statement that the man "*tried to do the dirty on Dr. Hewitt*" is quite false since the man was not responsible for the accident. Nor can it be said that "*he tried to do some damage in connection with Dr. Hewitt*". But all the same, it is curious that Marion should have used the word "damage" and difficult to see how he could have got any clue either from the card itself or from Dr. Hewitt's manner. But Marion's statements are too vague to have any convincing value.

The next case is quoted not so much as a test of Marion, as for the light which it throws upon the psychology of some sitters. At Sitting No. 6, one of the demonstration *séances*, a gentleman whom I shall designate as Mr. Y (not belonging to the regular group) gave Marion a handwritten letter at 9.35 p.m.

I will first quote Miss Beenham's notes. "Mr. Y gives a handwritten letter to Marion, who handles it for a moment, then unfolds it and appears to read it. He turns over the sheet and appears to read the other side. He then folds the letter up again, and paces up and down the room, holding the letter

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in his hand. He again opens the letter, and again appears to read it. He then walks up and down the room with his eyes shut, still holding the letter. He says that the writer had a very severe education. It was monotonous for him, and at last he broke away from it. He got himself free from home, and went away; for many years he was interested to do something on his own; for many years it could not be, but at last he broke away and followed his own will. He wanted to develop on an artistic line. It was a big separation for the family. He is above all a self-willed man, and does not take any advice. Marion then fingers the letter again and says that he will talk of the surroundings where letter was written. It was written in a big room; on a broad table are very many different files of papers. There is a calendar with turned back pages (leaves)—the room is in artificial light and it is evening. The letter was written in a great hurry, and the person had much to do. The writer of the letter went out of the front of the house and posted the letter himself. Marion then says that the letter was received by Mr. Y with a picture card and printed papers. [This took ten minutes.] *Mr. Y then said that without being too critical, the description is really very good and it describes the man perfectly. On the whole, Marion is quite accurate.* [Miss Beenham's notes.]

The sitting was on 1st February, 1934, and unfortunately, I was not present, this being the only sitting that I missed.

On the 20th April, 1934, I posted a little questionnaire to Mr. Y which I shall here reproduce. The replies were received on 24th April, 1934, and, in the covering letter, Mr. Y wrote:

"DEAR SIR,

Mr. — sent me your notes and I am replying to your questions. As far as it is possible, I have investigated Marion's remarks about the [two] letters, *but I should not say they were any way near accurate.* [Italics mine.] He took the letter out of the envelope, if you will remember, and I had the distinct impression that he was taking out a word here and there with his eyes, but he was probably tired and, by that time, rather fed up.

"Yours truly,"

<i>Questions.</i>	<i>Replies.</i>
(i.) Had the writer a very severe education? (In what special way severe?)	No.
(ii.) Did he find his education "monotonous"? Why?	It was not so.
(iii.) Did he break away from home and go away to do something on his own? Could you give brief details?	The procedure was quite normal.
(iv.) Was what he wanted to do in the <i>artistic line</i> ? Please state nature of this occupation	Write.
(v.) Was he a complaisant or a self-willed man?	She is a woman!
(vi.) Was the letter written in a big or a small room?	Very small.
(vii.) Were there any <i>files of paper</i> on the <i>table</i> in this room where the letter was written?	Yes.
(viii.) Was there a <i>calendar</i> with upturned pages in the room?	No.
(ix.) At what time of day was the letter written (roughly)?	Evening.
(x.) Was the letter written in a hurry?	No.
(xi.) Did the writer post it <i>himself</i> ?	No.
(xii.) Was the letter received <i>with</i> a picture card and printed papers?	No.

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It will be noted with regard to the twelve questions put to Mr. Y, only three of his answers do not flatly contradict the story told by Marion. In fact, the only three points in Mr. Y's answers that are in agreement with the original statements of Marion are No. iv. [He wanted to write], No. ix. [The letter was written in the evening], and No. vii. [There were files of paper on the table in the room where the letter was written.]

That is to say, if we accept Mr. Y's answers as accurate, then all that Marion has succeeded in getting right amounts to this: "This letter was written by some person in the evening, in a room where there were files of paper on the table. This person at some time of his life wanted to write." I am not at present concerned with the reliability of Mr. Y's statement that the letter was written in the evening or whether Marion could have discovered this by reading the letter. What is really amazing is Mr. Y's statement at the sitting that "the description is really very good and describes the man perfectly. On the whole Marion is quite accurate."

At 9.50 p.m. on the same evening, Mr. Y handed Marion another hand-written letter. We have again recourse to Miss Beenham's notes: "Marion takes the letter in his hand and appears to read it. He folds it up, and paces up and down the room with the letter in his hand. He says that the person has not had a happy life. The person was often very disappointed about different things. He was interested in most things. At one time, the person would want to commit suicide; often this thought would go through the mind, but it would be pressed down by a new interest in his life. He was a pessimist. He is a very important person, and has new ideas, and I would say, inventions. It is only a matter of time when something will happen in the life high above the average. The person is very busy writing about different things. Already there are many pages prepared for the inventions." [This took Marion five minutes.]

"Mr. Y says that the description is very accurate from what he knows of the man." [Miss Beenham's notes.]

However, I addressed a questionnaire on this description, also to Mr. Y, and on 24th April, 1934 received his replies. These are given below.

<i>Questions.</i>	<i>Replies.</i>
(i.) Had the writer of the second letter a happy life or not?	Not very.
(ii.) Is it true that the writer had thoughts of suicide at any time?	Depressed probably—but no more suicidal than most people.
(iii.) Was he a man of many interests?	Yes.
(iv.) Was he an optimist or a pessimist?	Optimist.
(v.) Had he ever made any inventions?	No.
(vi.) Is he writing about his inventions?	No.
(vii.) Does the letter itself contain any hints about inventions, or his pessimism, or optimism?	No.
(viii.) Is there any mention in the letter itself that the person was busy writing articles about that time (<i>i.e.</i> , the time when the letter was written)?	None whatever.

Accepting, for the moment, Mr. Y's statements or replies as accurate, let us make a brief summing up. "Here," says Marion, in effect, "was a man whose life was not happy, who was a pessimist, who, at times, wanted to commit suicide. He has inventions about which he is busy writing." "Here," says Mr. Y, in effect, "is a man whose life was not very happy, who was yet

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an optimist and though probably depressed at times, was no more suicidal than most people. He never had any inventions or wrote about them."

And yet, at the sitting, Mr. Y told us that "Marion's description is very accurate from what he [Mr. Y] knows of the man."

At Sitting No. 8, on Thursday, 8th February, 1934, Mrs. Richards at 9.58 p.m., handed Marion a hand-written letter. "Marion holds it in his hands, and appears to read it. He turns it over and looks at the writing on the other side of the page. He then walks up and down the room, with one hand on his forehead, and the letter in his other hand. He says that the writer of the letter is an extraordinary person. He has many hobbies. He has an original character; he is persevering, has poise and balance, But he had several conflicts and lost a little of his balance. He is a lucky person and has always had the good things of life in plenty. He had nothing to do with the luck that came to him. One of his hobbies was to do good; charitable. Marion says that that is the man's personality. He says that the man is living." [Miss Beenham's notes.] During Marion's "psychometry" of the letter, Mrs. Richards had left the room. She was recalled when Marion had finished, and the notes were read aloud to her. Mrs. Richards said, "That certainly describes the man."

On April 20th, I submitted to Mrs. Richards a questionnaire on the subject of the above letter. In a letter dated 22nd April, 1934, which accompanied her replies, Mrs. Richards remarks: "The reading of my letter by Marion was not at all satisfactory—the only thing that *was* correct was that he [the man] was well-favoured with this world's goods." The questions and replies are set out below.

<i>Questions.</i>	<i>Replies.</i>
(i.) What is the <i>date</i> at the head of the letter?	February 2nd, 1934.
(ii.) Did the writer have many "hobbies"? What were they?	<i>One</i> only, and that was <i>riding</i> .
(iii.) Was he a "lucky" person and had he always the good things of life in plenty?	Yes.
(iv.) Was he <i>charitable</i> in any exceptional way?	No.
(v.) Is he still living?	Yes.
(vi.) Could Marion tell from the signature of the letter that the writer was a <i>man</i> ?	Yes.
(vii.) Is there anything in the contents of the letter to lead Marion to guess that the man was (a) charitable, (b) a man of many hobbies, (c) a person who was wealthy or well-off?	No.
(viii.) Was he lucky through his own efforts, or had he nothing to do with his prosperity?	He was born in fortunate circumstances.

Unfortunately, I was unable to inspect the letter as Mrs. Richards preferred not to send it. As in the case of Mr. Y it will be observed that Mrs. Richards' first impression of Marion's work was favourable, but when she came to examine it in detail, she found the description "not at all satisfactory". This suggests that sitters at public *séances* often report favourably on a psychic's work simply because they do not, at the time, make any analysis of the medium's statements and the general impressions they form are apt to be misleading.

In the case quoted above since the letter was written only six days previous to the sitting, Marion would probably feel perfectly safe in asserting that the writer was still living. The signature would inform him that the

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writer was a man. Marion states that the man has many hobbies; according to Mrs. Richards, he has only one—that of riding. I suppose that there are very few men who have not a hobby of some kind. Marion says the man is charitable and that one of his hobbies is to do good. Mrs. Richards says that he was not charitable in any noticeable way. Knowing that Mrs. Richards is well-to-do, Marion probably guessed that the writer of the letter was a friend who belonged to the same social class. Once Marion had decided that the man is well-to-do, charities and hobbies would suggest themselves as natural corollaries.

But how elusive and banal are the majority of these "readings"! How devoid of any specific detail that would serve to differentiate the writer from the thousands of other human beings to each of whom the same descriptions would apply!

At Sitting No. 14, on Friday, 2nd March, 1934, there were present, among others, Dr. Gordon Fleming and his brother, Mr. S. W. Fleming. Dr. Fleming had brought a letter contained in a sealed envelope for Marion to psychometrise, but having to leave in the middle of the sitting, he left the letter with his brother who remained to the end.

At 4.32 p.m., Mr. S. W. Fleming handed Marion the envelope which was unaddressed and sealed—an ordinary plain white envelope. Mr. Fleming did not himself know the contents of the envelope. Miss Beenham's record reads as follows: "Marion holds it (the envelope) and says that it is handwriting—very small. It is written with dark ink. It is from a man who is tall, slim—all is long about him. He has a long face, the sight is not good, bad teeth. He is an educated person. He is not in London. The letter is about social things. There is nothing important in it."

Mr. Fleming then opened the envelope. The handwriting was fairly small, though not remarkably so. The letter was written from Ridge-End, and there did not appear to be anything of great importance in it.

In a letter, I addressed a few questions to Dr. Gordon Fleming, and on April 24th I received his replies as follows:

<i>Questions.</i>	<i>Replies.</i>
(i.) Was the letter from a man?	Yes.
(ii.) Was his sight bad? If so, how bad?	No.
(iii.) Had he bad teeth? Noticeably bad?	No.
(iv.) Had he a <i>long</i> face?	No—round.
(v.) Is there anything <i>important</i> in the letter?	Not really—commonplace.
(vi.) Was the letter about social matters mainly or entirely?	Yes.
(vii.) Was the man tall? How tall?	Yes—over six feet.
(viii.) Was he slim? Noticeably so?	Of medium build.

It will be seen that Marion has guessed correctly:

- (i.) The letter was written by a man.
- (ii.) It was written from the country.
- (iii.) The man is tall.
- (iv.) There is not much of importance in the letter.
- (v.) It is mainly about social matters.
- (vi.) The man is educated.

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As regards statement (vi.) since Dr. Fleming himself was obviously an educated man, it is a fair inference that probably nine out of ten of the letters he receives are from educated people. Again as regards (v.) it would be safe to say that three out of every four of the letters that are handed to Marion to be "psychometrised" are "social" rather than "business" letters, since clients are interested for the most part in the characters of their private friends and acquaintances. And it is probably true to say that nine out of ten of such "social" letters contain nothing of any *vital* importance. It would seem, therefore, that the only correct statements that could not be the result of rational inference and common experience are Nos. (i.), (ii.), and (iii.). Now, as regards No. (i.), the chance that the letter was written by a man is roughly half. As regards No. (iii.), if by "tall" we understand "in height exceeding 5 feet 9 inches, tables show that about one in every six men exceed this stature. No. (ii.) is more difficult to estimate, but let us put the chance at $\frac{1}{2}$. This makes the combined chance of the three statements being true about $\frac{1}{2} \times \frac{1}{2}$ though it might actually be much bigger. In connection with statements such as these we can hardly attach any importance to such a small degree of significance.

"PSYCHOMETRY" OF OBJECTS.

At Sitting No. 19, on Thursday, 27th March, 1934, I handed Marion a small green induction coil. This appliance, which is obviously a toy, was given by me as a present to my deceased brother, Frank, at Christmas, 1912. He and two other boys amused themselves by connecting the coil to a dry battery and giving people shocks. This coil is mentioned on p. 504 of S.P.R. *Proceedings*, Part XCVI, Vol. XXXV. I asked Marion to describe the owner of the coil, and to give any impressions he got from it. I was interested to ascertain whether Marion would show any signs of having read the S.P.R. *Proceedings*, Part XCVI, Vol. XXXV.

I will now quote Miss Beenham's record: "2.55 p.m. Marion holds the induction coil in his hand. He says that he sees a room with various experimental apparatus for educational, rather than practical purposes in it. This coil comes into contact with young people. There is a tall young man, with a pimply face; the complexion is not clear. The person is nervous and anæmic. This man was ill for a very long time; he was taken to the hospital. There was an accident, and he had something wrong with his body. Through this accident, the man suffered ill health. The accident was caused through carelessness. Marion says that the man is dead, and these are his only impressions."

First, it appears obvious that Marion does not recognise the coil as the one mentioned in S.P.R. *Proceedings*, Part XCVI, Vol. XXXV, p. 504. Possibly, he has never read the S.P.R. *Proceedings*.

The "room full of various experimental apparatus for educational purposes" could only apply to the shop at which I bought the coil. But as it is obvious that the coil is a mere toy with two handles attached for getting shocks, Marion's guess that the coil was associated with young people is merely an astute rational inference from the appearance of the object.

The description of the tall young man does not seem to fit my brother Frank. His complexion was exceptionally clear and fair, and I can never

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remember his having pimples. He was neither anæmic, nor nervous. The only accidents of a serious nature experienced by him were (a) a gassing in the War, and (b) his death from wounds four months later. He was certainly taken to hospital when he was gassed.

The lack of identifying detail in this description renders it of no value.

At Sitting No. 3, on Wednesday, 24th January, 1934, at 4.10 p.m. Mr. Bois handed Marion a ring to psychometrise and then left the room. On his return, Miss Beenham read aloud Marion's description from her notes. "Marion holds the ring in his hand and walks up and down the room. He says that the ring is associated with great difficulties. A great assembly of people in a sort of struggle in which many—or most—lost their lives. The object has its *origin* in connection with that event. The person originally connected with the ring is dead. This describes origin of ring. Later—and for its greater history—it has been shut up and not worn. It has been connected with a desk with pigeon holes in one of which the ring was kept. Then came a time when it was, apparently, lost and was sought for. People lost their lives in connection with the actual material from which the ring is fashioned. It was not made in England. It was made for a certain purpose. The ring seems to have been made by an amateur—not a professional jeweller—at the time of its origin just spoken of. Marion then said that was his principal impression. Eight and a half minutes taken over description."

In reply to an enquiry which I addressed to him, Mr. Bois wrote: "Referring to your enquiry relative to the ring which was psychometrised by Mr. Marion, this ring was bought by me at a public auction at Sotheby's about February or March, 1929. In the catalogue it was described as having belonged to Cardinal Beaufort and Henry VII, and is said to have belonged to Joan of Arc. The ring is unquestionably of the period, that is, the first third of the fifteenth century."

It seems hopeless to attempt to verify the somewhat vague statements made by Marion about the ring. Nevertheless, I think Mr. Bois' experiment was worth trying. It would have been interesting, for instance, if Marion had said that the ring had belonged to a king or prince.

At Sitting No. 2, on Thursday, 18th January, 1934, Dr. Edgley Curnock handed me a small, bent silver coin which, unknown to Marion, I wrapped in several pieces of stiffish paper and, having put the little packet inside a plain, white letter envelope, I sealed it up.

At 10.15 p.m. I handed Marion the sealed envelope, and asked him to give his impressions.

I will now quote Miss Beenham's notes: "Mr. Soal hands Marion the envelope. He is asked to give his impressions. Marion says it is something which is valued. The person took great trouble. The person to whom it belongs is very proud of it. It is a reward. It is connected with some act of valour. It is like a star. Marion says that it may be in another form, but he cannot express himself. He takes a pencil and draws a star on a piece of paper." Dr. Edgley Curnock then told the audience briefly that the object was a coin which belonged originally to John Wesley. Associated with the coin was a story which, however, Dr. Curnock does not believe. According to this story, John Wesley who was rather superstitious, was out riding one day and fell off his horse. This coin was in his pocket and when he picked

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himself up not much the worse, he found the coin bent and ever afterwards kept it as a souvenir.

In a letter dated 21st September, 1934, Dr. Edgley Curnock gave me more detailed information about the history of the coin. The coin, which is a fourpenny bit of the period of one of the Georges, has had its date worn off. The coin was in the first instance given by John Wesley to an ancestor of Dr. Curnock named Anne Edgley when she was a little girl. Since then, it has remained in the family and finally came into Dr. Curnock's possession, since he is the only descendant bearing the name of Edgley. Dr. Curnock has no idea as to how the coin was bent, but, personally, does not credit the story of the horse.

It will be seen that Marion has said absolutely nothing that bears upon the above history and the only correct statement is his remark that the object "is something which is valued." But judging from his statements: "It is a reward. It is connected with some act of valour. It is like a star", Marion seems totally unaware that the object is a coin and probably thinks it is some star-shaped medal or decoration won for bravery in the field. It must be admitted that Marion has totally failed again to describe either the object or its associations.

At Sitting No. 17, on Friday, 16th March, 1934, Mr. Ellic Howe, unknown to Marion, gave Mr. Dribbel a Russian rouble. At about 3.34 p.m. Mr. Dribbel pushed the rouble quickly into Marion's hand and, bending his fingers over it, told him not to look, but to give his impressions. Marion held the coin in his closed hand, and spoke in German. Mr. Dribbel wrote down Marion's statements in German as follows:

"Das war eine ziemlich schwere Zeit. Ein ganzes Leben hat sich umgestellt. Dieser Mensch hat irgend eine neue Lebensform. In dem früheren Kreis waren grosse Kämpfe und Verwüstung(en)? Ziemlich grosser, starker Mann, der irgend eine Anstellung gehabt hat in kaufmännischer Art. Das Bedeutende ist, dass er zweimal sein Leben beginnen musste. Dieser Mensch lebt nicht mehr." Mr. Howe, who had left the room before Mr. Dribbel handed Marion the rouble, now returned. He read the German and translated it into English, adding after each sentence a comment. Marion's statements with the comments made by Mr. Howe at the sitting are given below.

Marion's Statement.

"This was a rather difficult period."

"An entire life has been changed."

"This person has some new type of life."

"In the earlier sphere there was great conflict and devastation. A fairly tall, strong man, earlier was a big business man, who held some post of a commercial nature. The significant thing is that he had to begin life over again. This person is no longer living."

Comment by Mr. Howe.

Russian Revolution and after effects.

Yes, both possessors.

Both of them.

Yes, banker and industrialist.

Correct for both owners.

In reply to some questions which I addressed to Mr. Ellic Howe, he sent me the following information in a letter dated 19th September, 1934.

"The coin, which was a Russian rouble, dated 1899, had formerly belonged to a Russian banker X, who gave it to his daughter Y. Before the revolution X had been a business man who owned vast interests in Russia.

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[This is Mr. Howe's interpretation of the phrase "Earlier was a big business man."] The daughter Y gave Mr. Howe the rouble a week before she committed suicide in Paris in 1933. X had previously died of old age in 1930, or thereabouts. Both father and daughter had lost their homes through the revolution."

Now it will be remembered that Marion, in his own admission, had fought on the Russian front during the War. These roubles were in circulation till 1918 at least and it is very probable, therefore, that he had seen such coins. Though Mr. Dribbel pressed the coin quickly into his hand, we must assume that Marion saw it and recognised it as a rouble of pre-revolution days. Marion would then naturally think of the revolution and throw a cast with the veiled phrase: "It was a fairly difficult time". The idea of a rich man dispossessed of his home might next suggest itself. There would also be a fair likelihood of the man being now dead, through his misfortunes and sufferings in the Revolution. If the man had passed through the Revolution, it would be safe to hazard the statements: "A whole lifetime had to be changed," and "Had to build up a new life".

As Mr. Howe says in his letter: "If Marion knew a rouble when he saw one—then the story would come pat. It would fit most Russians I know. No medium has ever given me really startling information about this coin."

It would seem, therefore, that Marion's statements might easily be rational guesses based on his recognition of the coin. I should add that I personally can take no responsibility for the experiment, as I was quite unaware that any test was contemplated until I saw Mr. Dribbel press what looked like a medal into Marion's hand. But even if Marion had been handed the coin in the dark, he might have recognised it by touch.

SUMMARY AND CONCLUSION.

THE statistical experiments described in Section I undoubtedly show that Marion has the power of rapidly locating small objects that have been concealed in a room by an audience of about half a dozen persons who know the hiding-place and whose bodily movements he is able to observe. He succeeds likewise, in cases in which no actual object is hidden, in discovering the imaginary hiding-place concentrated upon by the audience. When an object is hidden, but no one present in the room is consciously aware of the hiding-place, Marion fails absolutely to obtain any success beyond what might be attributed to chance. Marion fails also in cases where the audience, knowing the hiding-place and able to watch his movements, are yet completely screened from his observation by a curtain or by thick blankets. It would appear, therefore, that a vital condition for success is that Marion should be able to watch the movements of some person or persons who know where the object is hidden.

We have shown also that Marion succeeds when he is followed round the room by a single person who knows the hiding-place, the remainder of the audience being concealed from his view. It is probable, however, that he will only succeed with a certain type of follower—a person of definitely motor temperament—but more experiments are required to settle this point completely. In cases in which Marion is followed by a single agent, it is established that the seeker does not rely necessarily upon changes in facial expression or even upon head movements for his clues. The experiments with the "Robot Box" demonstrate with a high degree of probability that the movements of walking of footsteps, etc., furnish the principal *indicia* in this case.

Our experiments with the "sentry-box" show that even with good "following" agents like Mr. A. Dribbell and Mr. H. S. Collins, Marion fails in the case in which every part of the agent's body is screened from his sight and the agent is not allowed to walk, but is merely wheeled round the room. We have shown further that Marion is able to succeed with a single agent who is stationary, but whose whole body is concealed with the exception of the head which itself is covered with a hood, through which the agent is able to watch the seeker. In this case head-noddings most probably furnish the clues.

The experiments would seem to emphasise the importance of the use of a screen in all telepathic tests in which the percipient is required to choose an object thought of by the agent from a group of five or six distinct alternatives, *e.g.*, as in the experiments of Dr. J. B. Rhine.

In Section II it is shown that Marion is able to recognise a new playing card, that he has previously handled, when it has been mixed with several other cards of identical make and design. The results strongly indicate that, in this feat, he relies mainly upon his tactual sense and upon a study of the contact which the card makes with the surface of the table. It is shown

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definitely that the figure on the face of the card plays no part in the process of recognition. He is similarly able to identify a stiff millboard card, which he has been allowed to hold in the dark, by means of his sensitive touch. When tactual and visual clues are completely ruled out, Marion succeeds no more often than chance would predict. These experiments suggest a most serious source of error in a great many of the card-guessing tests described by Miss Ina Jephson and Dr. J. B. Rhine.

In Section III statistical and other experiments in telepathy and clairvoyance are described. There is no reason to suppose that Marion possesses the faculty of reading the contents of sealed envelopes or packages. Nor are there any indications that he is able to divine numbers thought of by members of the audience. When, however, the numbers are inscribed on cards which Marion is able to manipulate in view of his audience, he may succeed by using the methods described in Section I, *i. e.*, by observing the reactions of the audience. He fails similarly in guessing playing cards by genuine telepathic means.

It is shown in Section IV that Marion's claims to delineate the lives and character of persons from an inspection of specimens of their handwriting are without foundation. Marion, in fact, is a very poor graphologist, quite apart from any supernormal considerations. He fails also to achieve any unequivocal success in his "psychometry" of objects handed to him by the sitters.

APPENDIX.

LIST OF SITTERS AT THE TWENTY-FIVE SÉANCES HELD IN JANUARY, FEBRUARY, MARCH,
MAY, JUNE AND JULY, 1934.

(Figures denote number of Sitting attended by the person indicated.)

1st Sitting	...	...	...	...	...	...	17th January, 1934.
2nd Sitting	...	...	...	...	...	...	18th January, 1934.
3rd Sitting	...	...	...	...	...	...	24th January, 1934.
4th Sitting	...	...	...	...	...	...	25th January, 1934.
5th Sitting	...	...	...	...	...	...	31st January, 1934.
6th Sitting	...	...	...	...	...	...	1st February, 1934.
7th Sitting	...	...	...	...	...	...	7th February, 1934.
8th Sitting	...	...	...	...	...	...	8th February, 1934.
9th Sitting	...	...	...	...	...	...	14th February, 1934.
10th Sitting	...	...	...	...	...	...	16th February, 1934.
11th Sitting	...	...	...	...	...	...	21st February, 1934.
12th Sitting	...	...	...	...	...	...	23rd February, 1934.
13th Sitting	...	...	...	...	...	...	28th February, 1934.
14th Sitting	...	...	...	...	...	...	2nd March, 1934.
15th Sitting	...	...	...	...	...	...	7th March, 1934.
16th Sitting	...	...	...	...	...	...	9th March, 1934.
17th Sitting	...	...	...	...	...	...	16th March, 1934.
18th Sitting	...	...	...	...	...	...	23rd March, 1934.
19th Sitting	...	...	...	...	...	...	27th March, 1934.
20th Sitting	...	...	...	...	...	...	18th May, 1934.
21st Sitting	...	...	...	...	...	...	15th June, 1934.
22nd Sitting	...	...	...	...	...	...	29th June, 1934.
23rd Sitting	...	...	...	...	...	...	6th July, 1934.
24th Sitting	...	...	...	...	...	...	27th July, 1934.
25th Sitting	...	...	...	...	...	...	28th July, 1934.

Adcock, Miss L., 6
 Allsop, Mr. Ben, 2
 Arnold-Foster, Mrs. H. C., 4
 Balfour, Dr. Margaret, 6
 Bective, Lady, 2
 Bective, Lord, 2
 Beenham, Miss Ethel, 1, 2, 3, 5, 6, 7, 8,
 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,
 19, 20, 21, 22, 23, 24, 25
 Bieber, Mr. Fritz, 20

Bois, Mr. H. G., 3, 4, 5, 9
 Bronson, Mr. W., 6
 Chance, Mr., 10
 Chance, Mrs., 10
 Chetham-Strode, Mr. W., 6
 Collins, Mr. H. S., 2, 5, 7, 9, 11, 14, 15,
 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
 Coplestone-Boughey, Mrs., 4, 6
 Cossor, Dr. J., 17
 Culpin, Dr. Millais, 4

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Curnock, Dr. J. Edgley, 2, 4
 Curnock, Mrs. J. Edgley, 4
 Dingwall, Dr. E. J., 15
 Doulton, Mr. Peter, 2
 Dribbel, Mr. Alex. L., 1, 3, 5, 7, 9, 10,
 11, 13, 15, 17, 20, 21, 22, 23
 Dribbel, Mrs. Alex. L., 13
 Dwyer, Mrs. K., 4
 Fleming, Dr. Gordon, 14
 Fleming, Mr. S. W., 14
 Frick, Mrs. Winifred, 4
 Giglio, Mr. E., 2
 Goldney, Mr. A. Peel, 24
 Goldney, Mrs. A. Peel, 1, 2, 3, 4, 5, 7,
 9, 10, 11, 13, 15, 16, 18, 19, 20, 22,
 23, 24, 25
 Gwyn, Mr. W. J., 2
 Hankey, Mrs. M., 2
 Harris, Professor, 3
 Hartridge, Professor, 3
 Hewitt, Dr. J. A., 3
 Howe, Mr. Ellic, 17, 18, 19, 20, 24
 Joad, Mr. C. E. M., 15
 Lambert, Mr. R. S., 4
 Lambert, Mrs. R. S., 4

Lier, Mr. J. van, 1, 2, 5, 6, 7, 8, 9, 11
 Maitland-Woolf, Mr., 16
 Mallous, Mrs. G., 2
 Montague, Mrs. Amy, 6
 Morton, Dr. Eva, 4
 Paul, Miss D., 8
 Payne, Dr. Sylvia M., 2
 Price, Mr. Harry, 1, 2, 3, 4, 5, 6, 7, 9,
 10, 11, 12, 13, 14, 15, 16, 17, 18, 19,
 20, 21, 22, 24
 Rampling-Rose, Major W., 2, 6
 Richards, Mr. Barry, 2
 Richards, Mrs. Henry, 1, 3, 5, 8, 9, 11
 Ridley, Dr. Frederick, 4
 Sands, Lord, 8
 Soal, Mr. S. G., 1, 2, 3, 4, 5, 7, 8, 9, 10,
 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,
 21, 22, 23, 24, 25
 Stewart, Miss M. A., 2
 Tapper, Mr., 6
 Tapper, Mrs., 6
 Taylor, Mr. I. Grant, 12
 Wagstaffe, Mrs. E. C., 6
 Wilson, Mr. Rathmell, 16

FIGURE II. SCALE: $\frac{1}{4}$ INCH to 1 FOOT.

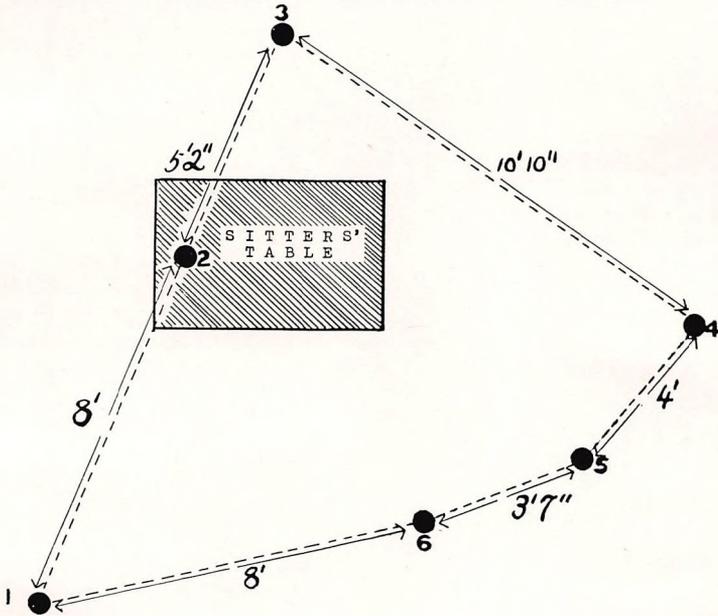


Diagram showing distances between Tin Boxes and their positions in relation to the sitters' Table. Compare with Figure I.

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"Many people were against him" certainly applies to his career in England, but they were simply trying to persuade him, for his own good, to give up a subject in which it seemed evident he had no ability. But the statement that "the reason people were against him was because he came out with some new ideas" is not true, if it is meant to apply to the period when he was in England. Dr. Z, when in England, was never known as an undergraduate to produce any new ideas so far as his subject was concerned. The statement that "The opposition was unjust" therefore, is absolutely untrue though Dr. Z who had immense confidence in himself may have imagined he was unjustly treated.

The personal description, though vague, is fairly good—as far as it goes—except perhaps in two particulars. As I knew Dr. Z in 1923, he possessed such an abundance of hair that it seems improbable that he has lost it in eleven years. Further, his complexion was naturally pale and not at all red. The deep-set eyes and bulging forehead and round face are fairly correct bits of description. In 1923 Dr. Z told me that he was thirty-eight years of age, so that the age stated fifty to sixty is a little too high. "Tall, not slim" is also accurate, for Dr. Z is a tall, broad-shouldered man. But he was certainly alive on 16th February, the time of the sitting, and was alive in December, 1935, when I last heard from him. During his last year in England, I knew him intimately and can certainly testify that he is "one of the best" and I have been amazed as well as gratified by his practical success in a career for which—to all his English friends—he appeared to be so badly handicapped.

But while admitting that, in a vague sort of way, Marion has scored now and then in his remarks about this man, the coincidences do not seem to be more than chance ones. There is the bad mistake about the man's death. Marion would probably be able to get the impression of a vigorous personality from the crabbed, vigorous quality of the handwriting. That he was a man of "new ideas" is clear from the statement in the letter that "Mr. ——— gladly accepted my suggestions for both volumes", etc. He is obviously not a young man for, if he were, it is improbable that he would be making the suggestion of some academic undertaking to a man much older than himself.

The case seems to me to be one of rational inference by Marion from the given data supplemented by lucky guessing.

A few minutes later on the same date, I handed Marion a rectangular strip of bluish paper which was cut from a letter. One side of the slip (4.4 by 3.5 inches) was covered by nine lines of handwriting in black pencil and the other side was blank. Marion was asked to describe the writer and to say if he were alive or dead.

you a photo of the house.
I took it when on leave
if you remember but had
not time to develop same
then; it will remind you of
what the garden was
like; you could send it
to Charlie if you like.
By the way is he likely

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When he had held this strip, Marion said "This writer is a middle-aged man, good-hearted and likes a quiet life. Living." [in reply to the question if the writer were alive or dead.]

Now for the facts. The slip was cut from a letter written by my brother, the late Frank Soal, while serving with his unit in Ireland. He was subsequently sent to France and died of wounds received in action in September, 1918. He was nineteen years of age at the time of his death.

Marion could scarcely have been farther from the mark.

STATISTICAL TEST.

In order to test Marion's claim that he was able to say by holding a letter if the writer were living or dead, I procured a number of letters and portions of letters, each of which was written by a different person. In all, I obtained forty such letters or portions of letters and of these twenty of the writers were living and twenty dead at the time of the experiment. In each case, the fact of death was definitely known or it was definitely known that the writer was alive. Of these forty letters, twenty-five were provided by Mrs. A. Peel Goldney, five by myself and the remainder by Mr. Harry Price. The letters provided by Mrs. Goldney and myself were without exception, letters from relatives or private friends. But two of the letters belonging to Mr. Price were from the late Houdini and the late Sir Arthur Conan Doyle, and there was another from Mr. Leslie Curnow deceased, who was prominent in the spiritualist movement in England. I think it in the highest degree improbable that Marion would be familiar with the handwriting of any of the other writers. In the actual test, he guessed that Houdini was dead, but that both Conan Doyle and Leslie Curnow were alive, which shows that he did not recognise even Sir Arthur Conan Doyle, let alone Leslie Curnow. Most of the letters were single sheets of paper or half sheets, bearing neither address nor signature. In cases where there was a signature or an address, the letter was folded in such a way that when Marion held it, neither the date, signature, nor address could be seen. The oldest of the letters dated back to 1905 and this letter, provided by Mrs. Goldney, certainly possessed a faded appearance. The next two oldest letters were written in the year 1913, and next after these was a letter written in 1918. In the case of the three letters written in 1905 and 1913 Marion was wrong in all his guesses. Previous to the actual experiment, Mrs. Goldney had taken the forty letters and, after folding each with care, had put them into forty plain envelopes which were left unsealed. She then thoroughly shuffled the envelopes and after shuffling, numbered them one to forty. Then, in order to avoid errors, she wrote in pencil the corresponding numbers on each of the contained letters. She had, previous to folding the letters, marked each in pencil with a number in shorthand and had compiled a list of the names of the writers opposite the shorthand numbers marked on the letters. After the shuffling and numbering of the envelopes, she now made use of the shorthand numbers on the letters to compile a new list of names opposite the numbers written on the corresponding envelopes.

Mrs. Goldney brought the forty envelopes thus numbered to Sitting No. 10 and at 4.4 p.m. the experiment commenced. During the experiment, Mrs. Goldney occupied herself in another part of the room, knowing nothing

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of what was going on at the experimenters' table. As Mrs. Goldney would have recognised the handwriting of a large proportion of the letters, it was thought best to avoid the possibility of her giving any kind of hints to Marion. As for myself, I had up to now seen only my own five letters and these I certainly recognised as I handed them to Marion, but none of the others. Miss Beenham sat at the same table, but at the other end, as it was thought she might possibly recognise some of the letters provided by Mr. Price. Mr. and Mrs. Chance and Mr. Alex. Dribbel watched the experiment, but none of these had previously seen the letters. I sat next to Marion and took up the envelopes in the order in which they were numbered one to forty. This order had been originally determined by shuffling so that now there was no possibility of any systematic sequence of the letters as regards "dead" and "living". I handed the folded letters to Marion one by one, replacing each in its envelope when Marion had given his verdict. I called out the number, which was recorded by Miss Beenham, together with the words "alive" or "dead". Nos. 14 and 26 proved to be typewritten letters and in the case of these two, Marion said he could get no impression. In the case of No. 35, Marion said he was "not sure as the person is an old man—he may be dead". We have, therefore, to discard Nos. 14, 26, and 35.

Of No. 38, Marion said, "very alive; never was ill". In the case of Nos. 24 and 37 I asked in addition for a personal description; these were the cases of Dr. Z, and Frank Soal, discussed above. At the end of the experiment, we did not tell Marion how far he was correct in his guesses, as it was hoped that we might be able to repeat the experiment after an interval.

Discarding Nos. 14, 26, 35, we have thirty-seven persons, of whom twenty were alive and seventeen dead at the time of the experiment. Now in his thirty-seven guesses, Marion favoured "alive" twenty-nine times and "dead" only eight times. Hence for the "alives", the expected number of correct guesses = $\frac{29}{37} \times 29 = 15.7$. The actual number of correct guesses for the "alives" = 18. And for the "deads" the expected number of correct guesses = $\frac{17}{37} \times 8 = 3.7$. The actual number of correct guesses for the "deads" = 6. The differences between the actual and expected numbers are too small to be of any significance.

The folding of the letters had been undisturbed by Marion.

The experiment is, of course, on too small a scale to be really conclusive, but it strongly suggests that Marion's claim has no real basis in fact. If he does possess a faculty which enables him to distinguish dead from living people by inspecting their handwriting, it must—judging from the results of the above experiment—be such a slight faculty as to be of little practical value to him in his stage work.

SITTERS' EXPERIMENTS.

I shall now describe a few experiments in "psychometry" that were not under my personal control in so far as the choice of the objects or the subsequent verification of the statements is concerned. It was inevitable that sitters, especially at the demonstration *séances*, should desire to test Marion's powers for themselves. In such cases, I did my best to secure afterwards the pertinent facts which would serve to corroborate or to confute Marion's statements. But I had, of course, to rely upon the accuracy and veracity of the people concerned.

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The following incident took place at Sitting No. 3 at about 4.15 p.m. Miss Beenham took the notes as usual. The notes read: "Dr. J. A. Hewitt then handed a printed card to Marion. Marion says that it belonged to a man who tried very much. He went through different kinds of work and changed a lot. Never a hundred per cent sincere—came into difficulties—against the law—many quarrels—he disappears for a time, and comes back in 'another position again'. Marion then says that he will describe its connection with Dr. Hewitt. He says that he (the man) met him in disagreeable circumstances. The owner of the card tried to do the dirty on him [*i.e.*, on Dr. Hewitt]—not a nice feeling he gets. He tried to do some damage in connection with you [speaking to Dr. Hewitt]—the matter is not finished yet. Marion then says that he does not like the matter."

Dr. Hewitt then explained that he knew really nothing about the owner of the card. But it seems that this man had wrecked Dr. Hewitt's car by running into it from behind with his own car. Dr. Hewitt said that he was going immediately to see his legal adviser about the wrecked car with a view to making the man pay him for the damage.

Marion then remarked "that he will have much trouble and he is doubtful if he will get the best of it."

The card was the business card of a well-known motor manufacturer. In reply to a letter which I addressed to Dr. Hewitt several weeks later, he told me that Marion's forecast of trouble had not materialised. He had had no dealings with the man who had wrecked his car as the man was not responsible, his own car having been struck from behind by yet another car and thus impelled on to Hewitt's car. There had been no trouble whatever—the whole thing had gone smoothly and "apart from the time it has taken has given no trouble of any kind." Marion's prediction of "much trouble", therefore, seems to have been false, as there was no litigation.

In this same letter [dated April 24th, '34] Dr. Hewitt says that as he had no dealings with the man, he could not give me any information throwing any light on Marion's estimate of the man's character "Never a hundred per cent sincere", etc.

The only really interesting statement in Marion's reading is the statement that Dr. Hewitt and the owner of the card met in disagreeable circumstances. But the following statement that the man "*tried to do the dirty* on Dr. Hewitt" is quite false since the man was not responsible for the accident. Nor can it be said that "*he tried to do some damage* in connection with Dr. Hewitt". But all the same, it is curious that Marion should have used the word "damage" and difficult to see how he could have got any clue either from the card itself or from Dr. Hewitt's manner. But Marion's statements are too vague to have any convincing value.

The next case is quoted not so much as a test of Marion, as for the light which it throws upon the psychology of some sitters. At Sitting No. 6, one of the demonstration *séances*, a gentleman whom I shall designate as Mr. Y (not belonging to the regular group) gave Marion a handwritten letter at 9.35 p.m.

I will first quote Miss Beenham's notes. "Mr. Y gives a handwritten letter to Marion, who handles it for a moment, then unfolds it and appears to read it. He turns over the sheet and appears to read the other side. He then folds the letter up again, and paces up and down the room, holding the letter

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in his hand. He again opens the letter, and again appears to read it. He then walks up and down the room with his eyes shut, still holding the letter. He says that the writer had a very severe education. It was monotonous for him, and at last he broke away from it. He got himself free from home, and went away; for many years he was interested to do something on his own; for many years it could not be, but at last he broke away and followed his own will. He wanted to develop on an artistic line. It was a big separation for the family. He is above all a self-willed man, and does not take any advice. Marion then fingers the letter again and says that he will talk of the surroundings where letter was written. It was written in a big room; on a broad table are very many different files of papers. There is a calendar with turned back pages (leaves)—the room is in artificial light and it is evening. The letter was written in a great hurry, and the person had much to do. The writer of the letter went out of the front of the house and posted the letter himself. Marion then says that the letter was received by Mr. Y with a picture card and printed papers. [This took ten minutes.] *Mr. Y then said that without being too critical, the description is really very good and it describes the man perfectly. On the whole, Marion is quite accurate.* [Miss Beenham's notes.]

The sitting was on 1st February, 1934, and unfortunately, I was not present, this being the only sitting that I missed.

On the 20th April, 1934, I posted a little questionnaire to Mr. Y which I shall here reproduce. The replies were received on 24th April, 1934, and, in the covering letter, Mr. Y wrote:

"DEAR SIR,

Mr. — sent me your notes and I am replying to your questions. As far as it is possible, I have investigated Marion's remarks about the [two] letters, *but I should not say they were any way near accurate.* [Italics mine.] He took the letter out of the envelope, if you will remember, and I had the distinct impression that he was taking out a word here and there with his eyes, but he was probably tired and, by that time, rather fed up.

"Yours truly,"

<i>Questions.</i>	<i>Replies.</i>
(i.) Had the writer a very severe education? (In what special way severe?)	No.
(ii.) Did he find his education "monotonous"? Why?	It was not so.
(iii.) Did he break away from home and go away to do something on his own? Could you give brief details?	The procedure was quite normal.
(iv.) Was what he wanted to do in the <i>artistic line</i> ? Please state nature of this occupation	Write.
(v.) Was he a complaisant or a self-willed man?	She is a woman!
(vi.) Was the letter written in a big or a small room?	Very small.
(vii.) Were there any <i>files of paper</i> on the <i>table</i> in this room where the letter was written?	Yes.
(viii.) Was there a <i>calendar</i> with upturned pages in the room?	No.
(ix.) At what time of day was the letter written (roughly)?	Evening.
(x.) Was the letter written in a hurry?	No.
(xi.) Did the writer post it <i>himself</i> ?	No.
(xii.) Was the letter received <i>with</i> a picture card and printed papers?	No.

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It will be noted with regard to the twelve questions put to Mr. Y, only three of his answers do not flatly contradict the story told by Marion. In fact, the only three points in Mr. Y's answers that are in agreement with the original statements of Marion are No. iv. [He wanted to write], No. ix. [The letter was written in the evening], and No. vii. [There were files of paper on the table in the room where the letter was written.]

That is to say, if we accept Mr. Y's answers as accurate, then all that Marion has succeeded in getting right amounts to this: "This letter was written by some person in the evening, in a room where there were files of paper on the table. This person at some time of his life wanted to write." I am not at present concerned with the reliability of Mr. Y's statement that the letter was written in the evening or whether Marion could have discovered this by reading the letter. What is really amazing is Mr. Y's statement at the sitting that "the description is really very good and describes the man perfectly. On the whole Marion is quite accurate."

At 9.50 p.m. on the same evening, Mr. Y handed Marion another handwritten letter. We have again recourse to Miss Beenham's notes: "Marion takes the letter in his hand and appears to read it. He folds it up, and paces up and down the room with the letter in his hand. He says that the person has not had a happy life. The person was often very disappointed about different things. He was interested in most things. At one time, the person would want to commit suicide; often this thought would go through the mind, but it would be pressed down by a new interest in his life. He was a pessimist. He is a very important person, and has new ideas, and I would say, inventions. It is only a matter of time when something will happen in the life high above the average. The person is very busy writing about different things. Already there are many pages prepared for the inventions." [This took Marion five minutes.]

"Mr. Y says that the description is very accurate from what he knows of the man." [Miss Beenham's notes.]

However, I addressed a questionnaire on this description, also to Mr. Y, and on 24th April, 1934 received his replies. These are given below.

	Questions.	Replies.
(i.)	Had the writer of the second letter a happy life or not?	Not very.
(ii.)	Is it true that the writer had thoughts of suicide at any time?	Depressed probably—but no more suicidal than most people.
(iii.)	Was he a man of many interests?	Yes.
(iv.)	Was he an optimist or a pessimist?	Optimist.
(v.)	Had he ever made any inventions?	No.
(vi.)	Is he writing about his inventions?	No.
(vii.)	Does the letter itself contain any hints about inventions, or his pessimism, or optimism?	No.
(viii.)	Is there any mention in the letter itself that the person was busy writing articles about that time (<i>i.e.</i> , the time when the letter was written)?	None whatever.

Accepting, for the moment, Mr. Y's statements or replies as accurate, let us make a brief summing up. "Here," says Marion, in effect, "was a man whose life was not happy, who was a pessimist, who, at times, wanted to commit suicide. He has inventions about which he is busy writing." "Here," says Mr. Y, in effect, "is a man whose life was not very happy, who was yet

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an optimist and though probably depressed at times, was no more suicidal than most people. He never had any inventions or wrote about them."

And yet, at the sitting, Mr. Y told us that "Marion's description is very accurate from what he [Mr. Y] knows of the man."

At Sitting No. 8, on Thursday, 8th February, 1934, Mrs. Richards at 9.58 p.m., handed Marion a hand-written letter. "Marion holds it in his hands, and appears to read it. He turns it over and looks at the writing on the other side of the page. He then walks up and down the room, with one hand on his forehead, and the letter in his other hand. He says that the writer of the letter is an extraordinary person. He has many hobbies. He has an original character; he is persevering, has poise and balance. But he had several conflicts and lost a little of his balance. He is a lucky person and has always had the good things of life in plenty. He had nothing to do with the luck that came to him. One of his hobbies was to do good; charitable. Marion says that that is the man's personality. He says that the man is living." [Miss Beenham's notes.] During Marion's "psychometry" of the letter, Mrs. Richards had left the room. She was recalled when Marion had finished, and the notes were read aloud to her. Mrs. Richards said, "That certainly describes the man."

On April 20th, I submitted to Mrs. Richards a questionnaire on the subject of the above letter. In a letter dated 22nd April, 1934, which accompanied her replies, Mrs. Richards remarks: "The reading of my letter by Marion was not at all satisfactory—the only thing that *was* correct was that he [the man] was well-favoured with this world's goods." The questions and replies are set out below.

<i>Questions.</i>	<i>Replies.</i>
(i.) What is the <i>date</i> at the head of the letter?	February 2nd, 1934.
(ii.) Did the writer have many "hobbies"? What were they?	One only, and that was <i>riding</i> .
(iii.) Was he a "lucky" person and had he always the good things of life in plenty?	Yes.
(iv.) Was he <i>charitable</i> in any exceptional way?	No.
(v.) Is he still living?	Yes.
(vi.) Could Marion tell from the signature of the letter that the writer was a <i>man</i> ?	Yes.
(vii.) Is there anything in the contents of the letter to lead Marion to guess that the man was (a) charitable, (b) a man of many hobbies, (c) a person who was wealthy or well-off?	No.
(viii.) Was he lucky through his own efforts, or had he nothing to do with his prosperity?	He was born in fortunate circumstances.

Unfortunately, I was unable to inspect the letter as Mrs. Richards preferred not to send it. As in the case of Mr. Y it will be observed that Mrs. Richards' first impression of Marion's work was favourable, but when she came to examine it in detail, she found the description "not at all satisfactory". This suggests that sitters at public *séances* often report favourably on a psychic's work simply because they do not, at the time, make any analysis of the medium's statements and the general impressions they form are apt to be misleading.

In the case quoted above since the letter was written only six days previous to the sitting, Marion would probably feel perfectly safe in asserting that the writer was still living. The signature would inform him that the

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writer was a man. Marion states that the man has many hobbies; according to Mrs. Richards, he has only one—that of riding. I suppose that there are very few men who have not a hobby of some kind. Marion says the man is charitable and that one of his hobbies is to do good. Mrs. Richards says that he was not charitable in any noticeable way. Knowing that Mrs. Richards is well-to-do, Marion probably guessed that the writer of the letter was a friend who belonged to the same social class. Once Marion had decided that the man is well-to-do, charities and hobbies would suggest themselves as natural corollaries.

But how elusive and banal are the majority of these "readings"! How devoid of any specific detail that would serve to differentiate the writer from the thousands of other human beings to each of whom the same descriptions would apply!

At Sitting No. 14, on Friday, 2nd March, 1934, there were present, among others, Dr. Gordon Fleming and his brother, Mr. S. W. Fleming. Dr. Fleming had brought a letter contained in a sealed envelope for Marion to psychometrise, but having to leave in the middle of the sitting, he left the letter with his brother who remained to the end.

At 4.32 p.m., Mr. S. W. Fleming handed Marion the envelope which was unaddressed and sealed—an ordinary plain white envelope. Mr. Fleming did not himself know the contents of the envelope. Miss Beenham's record reads as follows: "Marion holds it (the envelope) and says that it is handwriting—very small. It is written with dark ink. It is from a man who is tall, slim—all is long about him. He has a long face, the sight is not good, bad teeth. He is an educated person. He is not in London. The letter is about social things. There is nothing important in it."

Mr. Fleming then opened the envelope. The handwriting was fairly small, though not remarkably so. The letter was written from Ridge-End, and there did not appear to be anything of great importance in it.

In a letter, I addressed a few questions to Dr. Gordon Fleming, and on April 24th I received his replies as follows:

<i>Questions.</i>	<i>Replies.</i>
(i.) Was the letter from a man?	Yes.
(ii.) Was his sight bad? If so, how bad?	No.
(iii.) Had he bad teeth? Noticeably bad?	No.
(iv.) Had he a <i>long</i> face?	No—round.
(v.) Is there anything <i>important</i> in the letter?	Not really—commonplace.
(vi.) Was the letter about social matters mainly or entirely?	Yes.
(vii.) Was the man tall? How tall?	Yes—over six feet.
(viii.) Was he slim? Noticeably so?	Of medium build.

It will be seen that Marion has guessed correctly:

- (i.) The letter was written by a man.
- (ii.) It was written from the country.
- (iii.) The man is tall.
- (iv.) There is not much of importance in the letter.
- (v.) It is mainly about social matters.
- (vi.) The man is educated.

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As regards statement (vi.) since Dr. Fleming himself was obviously an educated man, it is a fair inference that probably nine out of ten of the letters he receives are from educated people. Again as regards (v.) it would be safe to say that three out of every four of the letters that are handed to Marion to be "psychometrised" are "social" rather than "business" letters, since clients are interested for the most part in the characters of their private friends and acquaintances. And it is probably true to say that nine out of ten of such "social" letters contain nothing of any *vital* importance. It would seem, therefore, that the only correct statements that could not be the result of rational inference and common experience are Nos. (i.), (ii.), and (iii.). Now, as regards No. (i.), the chance that the letter was written by a man is roughly half. As regards No. (iii.), if by "tall" we understand "in height exceeding 5 feet 9 inches, tables show that about one in every six men exceed this stature. No. (ii.) is more difficult to estimate, but let us put the chance at $\frac{1}{2}$. This makes the combined chance of the three statements being true about $\frac{1}{4}$ though it might actually be much bigger. In connection with statements such as these we can hardly attach any importance to such a small degree of significance.

"PSYCHOMETRY" OF OBJECTS.

At Sitting No. 19, on Thursday, 27th March, 1934, I handed Marion a small green induction coil. This appliance, which is obviously a toy, was given by me as a present to my deceased brother, Frank, at Christmas, 1912. He and two other boys amused themselves by connecting the coil to a dry battery and giving people shocks. This coil is mentioned on p. 504 of S.P.R. *Proceedings*, Part XCVI, Vol. XXXV. I asked Marion to describe the owner of the coil, and to give any impressions he got from it. I was interested to ascertain whether Marion would show any signs of having read the S.P.R. *Proceedings*, Part XCVI, Vol. XXXV.

I will now quote Miss Beenham's record: "2.55 p.m. Marion holds the induction coil in his hand. He says that he sees a room with various experimental apparatus for educational, rather than practical purposes in it. This coil comes into contact with young people. There is a tall young man, with a pimply face; the complexion is not clear. The person is nervous and anæmic. This man was ill for a very long time; he was taken to the hospital. There was an accident, and he had something wrong with his body. Through this accident, the man suffered ill health. The accident was caused through carelessness. Marion says that the man is dead, and these are his only impressions."

First, it appears obvious that Marion does not recognise the coil as the one mentioned in S.P.R. *Proceedings*, Part XCVI, Vol. XXXV, p. 504. Possibly, he has never read the S.P.R. *Proceedings*.

The "room full of various experimental apparatus for educational purposes" could only apply to the shop at which I bought the coil. But as it is obvious that the coil is a mere toy with two handles attached for getting shocks, Marion's guess that the coil was associated with young people is merely an astute rational inference from the appearance of the object.

The description of the tall young man does not seem to fit my brother Frank. His complexion was exceptionally clear and fair, and I can never

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remember his having pimples. He was neither anæmic, nor nervous. The only accidents of a serious nature experienced by him were (a) a gassing in the War, and (b) his death from wounds four months later. He was certainly taken to hospital when he was gassed.

The lack of identifying detail in this description renders it of no value.

At Sitting No. 3, on Wednesday, 24th January, 1934, at 4.10 p.m. Mr. Bois handed Marion a ring to psychometrise and then left the room. On his return, Miss Beenham read aloud Marion's description from her notes. "Marion holds the ring in his hand and walks up and down the room. He says that the ring is associated with great difficulties. A great assembly of people in a sort of struggle in which many—or most—lost their lives. The object has its *origin* in connection with that event. The person originally connected with the ring is dead. This describes origin of ring. Later—and for its greater history—it has been shut up and not worn. It has been connected with a desk with pigeon holes in one of which the ring was kept. Then came a time when it was, apparently, lost and was sought for. People lost their lives in connection with the actual material from which the ring is fashioned. It was not made in England. It was made for a certain purpose. The ring seems to have been made by an amateur—not a professional jeweller—at the time of its origin just spoken of. Marion then said that was his principal impression. Eight and a half minutes taken over description."

In reply to an enquiry which I addressed to him, Mr. Bois wrote: "Referring to your enquiry relative to the ring which was psychometrised by Mr. Marion, this ring was bought by me at a public auction at Sotheby's about February or March, 1929. In the catalogue it was described as having belonged to Cardinal Beaufort and Henry VII, and is said to have belonged to Joan of Arc. The ring is unquestionably of the period, that is, the first third of the fifteenth century."

It seems hopeless to attempt to verify the somewhat vague statements made by Marion about the ring. Nevertheless, I think Mr. Bois' experiment was worth trying. It would have been interesting, for instance, if Marion had said that the ring had belonged to a king or prince.

At Sitting No. 2, on Thursday, 18th January, 1934, Dr. Edgley Curnock handed me a small, bent silver coin which, unknown to Marion, I wrapped in several pieces of stiffish paper and, having put the little packet inside a plain, white letter envelope, I sealed it up.

At 10.15 p.m. I handed Marion the sealed envelope, and asked him to give his impressions.

I will now quote Miss Beenham's notes: "Mr. Soal hands Marion the envelope. He is asked to give his impressions. Marion says it is something which is valued. The person took great trouble. The person to whom it belongs is very proud of it. It is a reward. It is connected with some act of valour. It is like a star. Marion says that it may be in another form, but he cannot express himself. He takes a pencil and draws a star on a piece of paper." Dr. Edgley Curnock then told the audience briefly that the object was a coin which belonged originally to John Wesley. Associated with the coin was a story which, however, Dr. Curnock does not believe. According to this story, John Wesley who was rather superstitious, was out riding one day and fell off his horse. This coin was in his pocket and when he picked

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himself up not much the worse, he found the coin bent and ever afterwards kept it as a souvenir.

In a letter dated 21st September, 1934, Dr. Edgley Curnock gave me more detailed information about the history of the coin. The coin, which is a fourpenny bit of the period of one of the Georges, has had its date worn off. The coin was in the first instance given by John Wesley to an ancestor of Dr. Curnock named Anne Edgley when she was a little girl. Since then, it has remained in the family and finally came into Dr. Curnock's possession, since he is the only descendant bearing the name of Edgley. Dr. Curnock has no idea as to how the coin was bent, but, personally, does not credit the story of the horse.

It will be seen that Marion has said absolutely nothing that bears upon the above history and the only correct statement is his remark that the object "is something which is valued." But judging from his statements: "It is a reward. It is connected with some act of valour. It is like a star", Marion seems totally unaware that the object is a coin and probably thinks it is some star-shaped medal or decoration won for bravery in the field. It must be admitted that Marion has totally failed again to describe either the object or its associations.

At Sitting No. 17, on Friday, 16th March, 1934, Mr. Ellic Howe, unknown to Marion, gave Mr. Dribbel a Russian rouble. At about 3.34 p.m. Mr. Dribbel pushed the rouble quickly into Marion's hand and, bending his fingers over it, told him not to look, but to give his impressions. Marion held the coin in his closed hand, and spoke in German. Mr. Dribbel wrote down Marion's statements in German as follows:

"Das war eine ziemlich schwere Zeit. Ein ganzes Leben hat sich umgestellt. Dieser Mensch hat irgend eine neue Lebensform. In dem früheren Kreis waren grosse Kämpfe und Verwüstung(en)? Ziemlich grosser, starker Mann, der irgend eine Anstellung gehabt hat in kaufmännischer Art. Das Bedeutende ist, dass er zweimal sein Lebe beginnen musste. Dieser Mensch lebt nicht mehr." Mr. Howe, who had left the room before Mr. Dribbel handed Marion the rouble, now returned. He read the German and translated it into English, adding after each sentence a comment. Marion's statements with the comments made by Mr. Howe at the sitting are given below.

Marion's Statement.

"This was a rather difficult period."

"An entire life has been changed."

"This person has some new type of life."

"In the earlier sphere there was great conflict and devastation. A fairly tall, strong man, earlier was a big business man, who held some post of a commercial nature. The significant thing is that he had to begin life over again. This person is no longer living."

Comment by Mr. Howe.

Russian Revolution and after effects.

Yes, both possessors.

Both of them.

Yes, banker and industrialist.

Correct for both owners.

In reply to some questions which I addressed to Mr. Ellic Howe, he sent me the following information in a letter dated 19th September, 1934.

"The coin, which was a Russian rouble, dated 1899, had formerly belonged to a Russian banker X, who gave it to his daughter Y. Before the revolution X had been a business man who owned vast interests in Russia.

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[This is Mr. Howe's interpretation of the phrase "Earlier was a big business man."] The daughter Y gave Mr. Howe the rouble a week before she committed suicide in Paris in 1933. X had previously died of old age in 1930, or thereabouts. Both father and daughter had lost their homes through the revolution."

Now it will be remembered that Marion, in his own admission, had fought on the Russian front during the War. These roubles were in circulation till 1918 at least and it is very probable, therefore, that he had seen such coins. Though Mr. Dribbel pressed the coin quickly into his hand, we must assume that Marion saw it and recognised it as a rouble of pre-revolution days. Marion would then naturally think of the revolution and throw a cast with the veiled phrase: "It was a fairly difficult time". The idea of a rich man dispossessed of his home might next suggest itself. There would also be a fair likelihood of the man being now dead, through his misfortunes and sufferings in the Revolution. If the man had passed through the Revolution, it would be safe to hazard the statements: "A whole lifetime had to be changed," and "Had to build up a new life".

As Mr. Howe says in his letter: "If Marion knew a rouble when he saw one—then the story would come pat. It would fit most Russians I know. No medium has ever given me really startling information about this coin."

It would seem, therefore, that Marion's statements might easily be rational guesses based on his recognition of the coin. I should add that I personally can take no responsibility for the experiment, as I was quite unaware that any test was contemplated until I saw Mr. Dribbel press what looked like a medal into Marion's hand. But even if Marion had been handed the coin in the dark, he might have recognised it by touch.

SUMMARY AND CONCLUSION.

THE statistical experiments described in Section I undoubtedly show that Marion has the power of rapidly locating small objects that have been concealed in a room by an audience of about half a dozen persons who know the hiding-place and whose bodily movements he is able to observe. He succeeds likewise, in cases in which no actual object is hidden, in discovering the imaginary hiding-place concentrated upon by the audience. When an object is hidden, but no one present in the room is consciously aware of the hiding-place, Marion fails absolutely to obtain any success beyond what might be attributed to chance. Marion fails also in cases where the audience, knowing the hiding-place and able to watch his movements, are yet completely screened from his observation by a curtain or by thick blankets. It would appear, therefore, that a vital condition for success is that Marion should be able to watch the movements of some person or persons who know where the object is hidden.

We have shown also that Marion succeeds when he is followed round the room by a single person who knows the hiding-place, the remainder of the audience being concealed from his view. It is probable, however, that he will only succeed with a certain type of follower—a person of definitely motor temperament—but more experiments are required to settle this point completely. In cases in which Marion is followed by a single agent, it is established that the seeker does not rely necessarily upon changes in facial expression or even upon head movements for his clues. The experiments with the "Robot Box" demonstrate with a high degree of probability that the movements of walking of footsteps, etc., furnish the principal *indicia* in this case.

Our experiments with the "sentry-box" show that even with good "following" agents like Mr. A. Dribbell and Mr. H. S. Collins, Marion fails in the case in which every part of the agent's body is screened from his sight and the agent is not allowed to walk, but is merely wheeled round the room. We have shown further that Marion is able to succeed with a single agent who is stationary, but whose whole body is concealed with the exception of the head which itself is covered with a hood, through which the agent is able to watch the seeker. In this case head-noddings most probably furnish the clues.

The experiments would seem to emphasise the importance of the use of a screen in all telepathic tests in which the percipient is required to choose an object thought of by the agent from a group of five or six distinct alternatives, *e.g.*, as in the experiments of Dr. J. B. Rhine.

In Section II it is shown that Marion is able to recognise a new playing card, that he has previously handled, when it has been mixed with several other cards of identical make and design. The results strongly indicate that, in this feat, he relies mainly upon his tactual sense and upon a study of the contact which the card makes with the surface of the table. It is shown

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definitely that the figure on the face of the card plays no part in the process of recognition. He is similarly able to identify a stiff millboard card, which he has been allowed to hold in the dark, by means of his sensitive touch. When tactual and visual clues are completely ruled out, Marion succeeds no more often than chance would predict. These experiments suggest a most serious source of error in a great many of the card-guessing tests described by Miss Ina Jephson and Dr. J. B. Rhine.

In Section III statistical and other experiments in telepathy and clairvoyance are described. There is no reason to suppose that Marion possesses the faculty of reading the contents of sealed envelopes or packages. Nor are there any indications that he is able to divine numbers thought of by members of the audience. When, however, the numbers are inscribed on cards which Marion is able to manipulate in view of his audience, he may succeed by using the methods described in Section I, *i.e.*, by observing the reactions of the audience. He fails similarly in guessing playing cards by genuine telepathic means.

It is shown in Section IV that Marion's claims to delineate the lives and character of persons from an inspection of specimens of their handwriting are without foundation. Marion, in fact, is a very poor graphologist, quite apart from any supernatural considerations. He fails also to achieve any unequivocal success in his "psychometry" of objects handed to him by the sitters.

APPENDIX.

LIST OF SITTERS AT THE TWENTY-FIVE SÉANCES HELD IN JANUARY, FEBRUARY, MARCH,
MAY, JUNE AND JULY, 1934.

(Figures denote number of Sitting attended by the person indicated.)

1st Sitting	...	...	...	...	...	...	17th January, 1934.
2nd Sitting	...	...	...	...	...	...	18th January, 1934.
3rd Sitting	...	...	...	...	...	...	24th January, 1934.
4th Sitting	...	...	...	...	...	...	25th January, 1934.
5th Sitting	...	...	...	...	...	...	31st January, 1934.
6th Sitting	...	...	...	...	...	...	1st February, 1934.
7th Sitting	...	...	...	...	...	...	7th February, 1934.
8th Sitting	...	...	...	...	...	...	8th February, 1934.
9th Sitting	...	...	...	...	...	...	14th February, 1934.
10th Sitting	...	...	...	...	...	...	16th February, 1934.
11th Sitting	...	...	...	...	...	...	21st February, 1934.
12th Sitting	...	...	...	...	...	...	23rd February, 1934.
13th Sitting	...	...	...	...	...	...	28th February, 1934.
14th Sitting	...	...	...	...	...	...	2nd March, 1934.
15th Sitting	...	...	...	...	...	...	7th March, 1934.
16th Sitting	...	...	...	...	...	...	9th March, 1934.
17th Sitting	...	...	...	...	...	...	16th March, 1934.
18th Sitting	...	...	...	...	...	...	23rd March, 1934.
19th Sitting	...	...	...	...	...	...	27th March, 1934.
20th Sitting	...	...	...	...	...	...	18th May, 1934.
21st Sitting	...	...	...	...	...	...	15th June, 1934.
22nd Sitting	...	...	...	...	...	...	29th June, 1934.
23rd Sitting	...	...	...	...	...	...	6th July, 1934.
24th Sitting	...	...	...	...	...	...	27th July, 1934.
25th Sitting	...	...	...	...	...	...	28th July, 1934.

Adcock, Miss L., 6
 Allsop, Mr. Ben, 2
 Arnold-Foster, Mrs. H. C., 4
 Balfour, Dr. Margaret, 6
 Bective, Lady, 2
 Bective, Lord, 2
 Beenham, Miss Ethel, 1, 2, 3, 5, 6, 7, 8,
 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,
 19, 20, 21, 22, 23, 24, 25
 Bieber, Mr. Fritz, 20

Bois, Mr. H. G., 3, 4, 5, 9
 Bronson, Mr. W., 6
 Chance, Mr., 10
 Chance, Mrs., 10
 Chetham-Strode, Mr. W., 6
 Collins, Mr. H. S., 2, 5, 7, 9, 11, 14, 15,
 16, 17, 18, 19, 20, 21, 22, 23, 24, 25
 Coplestone-Boughhey, Mrs., 4, 6
 Cossor, Dr. J., 17
 Culpin, Dr. Millais, 4

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- Curnock, Dr. J. Edgley, 2, 4
Curnock, Mrs. J. Edgley, 4
Dingwall, Dr. E. J., 15
Doulton, Mr. Peter, 2
Dribbel, Mr. Alex. L., 1, 3, 5, 7, 9, 10,
11, 13, 15, 17, 20, 21, 22, 23
Dribbel, Mrs. Alex. L., 13
Dwyer, Mrs. K., 4
Fleming, Dr. Gordon, 14
Fleming, Mr. S. W., 14
Frick, Mrs. Winifred, 4
Giglio, Mr. E., 2
Goldney, Mr. A. Peel, 24
Goldney, Mrs. A. Peel, 1, 2, 3, 4, 5, 7,
9, 10, 11, 13, 15, 16, 18, 19, 20, 22,
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