

A New Methodology for Free-Response ESP Testing Outwith the Laboratory:
Findings from Experienced Participants

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Abstract

A new free-response ESP methodology, suggested by previous research conducted by the first three authors, is described, and the primary overall results from a study testing its efficacy in eliciting positive psi scoring are presented. The new methodology enables testing of participants outwith the laboratory. It allows the participant to choose when, where and how each trial is conducted. Thus, participants have control over the circumstances surrounding each session, and are free to vary the conditions of each session as they wish. The methodology enables participants to have in their possession: the actual target, enclosed in a secure container; a judging pack; and, it provides a means for them to obtain feedback once they have completed the judging procedure, including the provision of immediate feedback if desired. A study is being conducted in which twelve participants have contributed 432 trials to date. The first three authors were the experimenters and also acted as participants, although their data are not counted in the primary measure of the study, as they were atypical of the other participants in several respects. The nine non-staff participants have currently contributed 366 trials, obtaining significant, positive psi scoring ($p = 0.01$, one-tailed, exact binomial).

Introduction

This paper describes a free-response ESP methodology which allows participants to conduct their trials how, when and where they choose and reports a study conducted to test the efficacy of this methodology. The development of this methodology was suggested by previous research conducted by Delanoy, Morris and Watt (1991), which found no significant ESP scoring in any of the formal measures, but did obtain strong, above chance scoring in an informal, practice measure (obtained hit rate for over 700 trials = 60%, MCE = 50%). No claims were made for this scoring rate as these exercises were devised solely to provide the participants with 'practice' ESP trials and lacked adequate security precautions to protect against sensory access to the target materials. The apparent success of these informal trials prompted an exploration of ways to closely approximate the conditions of these exercises under quite secure conditions. A further motivation for developing this methodology stemmed from a desire to find a means to test ESP remotely, outwith the laboratory environment, at a time and place of the percipient's choosing, all of which were features of the informal exercises.

In the previous studies, these exercises would usually be done once a day, six days a week, over a twelve week period, in conjunction with the practice of some mental technique (see Delanoy, Morris and Watt, 1991, for further details of this study). The general procedure for these informal exercises involved each participant receiving six numbered target packs approximately once a week, with each pack consisting of two pictures, each housed in an unsealed, numbered opaque manila envelope. The back of each picture was labelled with an identifying number, the same as was on its envelope. The participant would generate impressions to one or both of the target pictures, making note of the number on the envelope of the picture serving as target for a particular trial. They would then turn the envelopes so that the identifying number was not visible to them, and would scramble the two envelopes until they were unsure of which was which. Then they would remove the two pictures from the envelopes, with the picture facing upwards so that they would not see the identifying number on the back of the picture, and could then proceed to 'blind' judge the pictures for correspondence with their impressions. Of course, in this procedure there were many normal means by which the participants could have received information about the identity of any given target picture. They could have cheated, but given that all but one of the fourteen participants produced results in the anticipated direction, the consistency of scoring would seem to preclude this. Also, there was little motivation for cheating as the participants knew the trials were not being counted in the formal results, the primary purpose of these exercises being to provide them with practice in gaining ESP impressions using different strategies, and in performing a blind judging procedure. They also could have responded unconsciously to cues from the envelopes, or unconsciously kept track of the position of the target envelope during the self-shuffling.

It should be noted that in this earlier study, a formal ESP measure was taken which was somewhat similar to the one just described, in that on nearly a daily basis, at a time and place and in a manner of their choice, participants generated impressions to a remote target which was securely located in their experimenter's office. The primary difference in this

formal measure was that the participant generated impressions to only one target per week and they had no target or judging materials in their possession; the blind judging of this trial was conducted in the lab when the participants came in for their weekly sessions. This procedure did not yield above-chance scoring, and many participants complained that it seemed an especially difficult task due to the distance between themselves and the target. On the other hand, the informal procedure was generally viewed as an enjoyable exercise.

THE NEW METHODOLOGY

The development of a methodology to mimic securely the above general conditions had three major aspects. The first involved the housing of the target materials; a primary requirement of the new methodology was to find a means of allowing the participant to have the target picture in their possession outside of the laboratory, in a secure container which would make it difficult to access the target. A second aspect involved devising adequate randomisation procedures and ways of safeguarding the storage of target-related materials. Thirdly, there were a variety of procedural factors to be considered. A means was needed whereby participants could judge the correspondences between their mentations and the possible target pictures. Then a way of providing feedback to the participant, after they had recorded their judging decisions, was required. Furthermore, it was deemed desirable to be able to provide feedback whenever the participant wished it, including the provision of immediate feedback, if desired. The methodology is described below in as much detail as space allows; further information may be obtained from DD.

Housing the Target Materials

The Security Bags

There are many commercially available security bags designed to transport highly sensitive material. RW, who specialises in the psychology of deception and also is a skilled, practicing magician, tested many such commercially produced bags until he found one which effectively minimized the possibility of gaining entry to it without leaving evidence. The bags which appeared to offer the greatest security were "Loksure" bags, produced by Trigon Packaging Systems (UK) Ltd.¹ It should be stressed that these bags do not prohibit entry, but rather are designed to make entry extremely difficult without leaving signs that they have been entered. Hence they are designed to provide detection of entry, in addition to preventing accidental or casual entry.

The Loksure bags are constructed of polyethylene, white on the outside of the envelope and black on the inside, which renders the envelope opaque. The manufacturers claim the polyethylene can not be slit open and then resealed without detection. The side seams of the bags are marked with a complex chain pattern and heat sealed which prevents opening and resealing a seam, without leaving evidence of the entry. If a seam were

¹ Unfortunately Trigon Packaging Systems (UK) Ltd., the company that produced the security bags, has been taken over by another company which has ceased production of the bag design we have been using. We are currently exploring ways of obtaining other bags with similar properties to the Loksure bags used in this study.

cut off, the chain pattern could not be reproduced upon the bag and then the bag heat sealed again without significantly reducing the standard size of the bags. There was no bottom seam to the bag, the material being one continuous sheet, folded at the bottom. Materials can be inserted through a slit opening near the top of one side of the envelope. This opening is protected by means of a self-adhesive strip, which folds over the envelope, adhering to both the back and front of the top of the envelope, including the slit. This strip reveals signs of physical tampering such as attempts to peel it off, the application of heat or cold, or the use of various solvents. To prevent an envelope being opened and then replaced by a duplicate, each bag carries a permanent and unique number. This number is also printed on a removable flap, which is initially attached to the envelope. After the bag has been sealed, this flap can be removed and used to check that bag has not been replaced by a duplicate bag carrying a different number. To protect against reproduction of the same number on a duplicate, un-numbered bag, each bag was also finger-printed with indelible ink by a staff member.

These bags were submitted to further tests by a variety of experts. They were given to members of the conjuring community, who were unable to gain access to the target material without leaving obvious traces of their entry. Also, forensic experts from the Edinburgh police were consulted. They kindly offered assistance with finger-printing examinations. Chemists from Heriot-Watt University examined the properties of the polyethelene material to ensure that it could not be slit open and resealed without leaving easily detectable evidence of the entry. To ensure that the contents of the bags could not be revealed by various scanning devices, the sealed bags, containing the appropriately housed target material (as described below), were tested by medical technicians, airport security and a physicist, Dr. Walter von Lucadou. From these tests it was determined that target information could not be obtained by any readily available scans (e.g., xrays, high and low frequency electrical fields, magnetic fields, and infrared measurements).

Each security bag is used in one trial only, and after being used is retained for future examination. To remove the target picture, each bag is cut open in a specified manner, leaving the seal over the slit intact for further inspection. Thus, for any given trial, the specific security bag which contained the target for that trial can be produced for future examination, if required/requested. The security measures taken to protect the used and unused bags are described below (see the 'Randomisation Procedure and Additional Security Measures' section).

Other Measures Involving the Target Pictures

Before placing targets in a Loksure security bag, a variety of other security measures were taken. Each picture and its duplicate were mounted on similarly sized light grey carding paper of approximately 21cm x 14 cm. A target pack was to consist of: a) a securely housed target picture; and, b) a judging pack, consisting of two possible targets, one of which was a duplicate of the actual target contained in the security bag, the other a picture equally likely to have been randomly selected to be the target (see below for picture and randomisation details). Before being placed in a security bag all potential target pictures were placed in separate opaque, padded envelopes of sufficient thickness to ensure that neither the size nor thickness of the target picture (whilst on its mounting) could be determined by touch. This was accomplished by housing

the target picture in a "Jiffy Padded Bag", size: "No.0". The back of each padded bag is labelled with the picture's identity number. Each picture is placed in the padded bag such that the target picture will face onto the unseamed, unmarked side of the padded bag.

As the sizes and the weights of the various pictures used in any given target pack vary slightly, it was feasible that someone could discover the weight of the various target packaging materials, and from this deduce the identity of the actual target, given that they would have the unpackaged target picture and its foil in their possession in the judging pack. To prevent this, the weight (as determined by electronic postal envelope scales, measuring in gram increments) of the two potential target pictures, when each was contained within its padded envelope, was equalized to well within a gram of each other by adding blank pieces of paper to the lighter one. These blank sheets were added such that they were lying on the back mounting, not on the 'face' of the target picture.

At the beginning of the study, each target pack had the duplicate targets divided as follows: one pair of duplicate targets (the judging pack) was placed in an opaque, manila envelope (16.5cm x 24cm) with the number of each of the two pictures listed on the outside of the envelope. The other pair of duplicate pictures was placed in the padded envelopes, balanced for weight, and then sealed with sticky tape for future placement in a security bag, as dictated by the randomisation process (described below). After randomisation, the chosen target was sealed in a security bag. The security bag was then placed into another opaque envelope which was labelled according to the target pack number and then sealed conventionally (gum sealing) and by means of sticky tape. The target and the appropriate judging pack were then put into a further envelope, which comprised the 'target pack', and labelled according to target pack number.

For convenience, six such target packs were grouped together to form a "mega-pack", before being given to participants. When grouping six target packs together to form a mega-pack, the content and theme of the pictures in the target packs were varied as much possible, as judged by CW for the purposes of the present study. Then, each mega-pack was assigned an identifying number by the randomiser. The single mega-pack envelope containing the six target packs can be sent through the post or the participant can visit the lab to obtain and/or return their testing materials.

Randomisation Procedure and Additional Security Measures

The precise randomisation procedure may be altered to fit the specific requirements of any given experimental design (e.g., a precognition study would have different procedural requirements). The following describes the randomisation procedure used in the present study.

A person not otherwise connected with any on-going study involving this methodology performed the randomisation procedure. They chose targets for each trial using random number tables (Rand Corporation, 1955), the entry point into the tables being determined by a prescribed means using the daily weather reports of international cities, as reported in The Scotsman Newspaper.

All potential target pictures were housed in padded bags (described above), which were labelled with the number of the target picture. Once a target for any given target pack was chosen, the randomiser took the appropriate padded bag (note: the randomiser did not see the target material contained within the sealed, padded bag), placed it in a security bag, and carefully sealed the bag. If the seal of any bag was smeared or otherwise disfigured during the sealing process, the bag was cut open, the target removed and a new security bag chosen for that target. The randomiser kept records detailing the use of each, uniquely numbered, security bag. After having sealed the security bag, the randomiser carefully folded and placed the bag in a manila envelope, labelled with the appropriate target pack number, and sealed the envelope using both the conventional gum and sticky tape. During the above procedure, the randomiser ensured that the face of the picture was always facing the proper direction, so that the percipient could direct their attentions to the target picture (as opposed to its back), if they so wished. The randomiser then placed the target in its target pack envelope which also contained the judging pictures.

When a mega-pack, containing its six target packs, was returned by a participant after being used, each security bag was opened, as described above, in a manner which facilitated the detection of any tampering with the bag. The randomiser removed each target from its security bag, without opening the padded envelope containing the picture. After having removed the padded envelope containing the target picture, the security bag was checked by the randomiser for signs of entry, and was then saved for future inspection if needed. The randomiser kept records detailing the use of each security envelope, and these records were doubled-checked when a target was removed to ensure that the correct target picture was in the security bag. Target packs were re-randomised after each use.

Also, the randomiser prepared the feedback material for each mega-pack randomised. The feedback information was housed in a sealed, opaque manila envelope, which listed the mega-pack number and number of the six target packs contained within that mega-pack. This mega-pack feedback envelope contained six smaller, opaque envelopes, one for each of the six target packs, labelled according to the number of the mega and target pack. The randomiser wrote the identity number of the actual target, along with the number of the target pack, on a slip of paper which was then folded several times before being placed in the smaller envelope. Once the six target packs for each mega-pack had been randomised and the feedback information for these target packs compiled, the randomiser attached the sealed envelope, containing the six smaller feedback envelopes, to the appropriate mega-pack. The feedback information envelope was removed by the experimenter before the mega-pack was distributed to the participants.

Each experimenter stored their participants' feedback information in a sturdy plastic security pouch which was opened and closed by means of a zipper. The zipper could be 'locked' into the closed position by means of uniquely numbered tabs, which were removed every time the pouch was entered, being replaced by a new tab each time the bag was sealed. The pouches were opened only to add new and remove old feedback envelopes and to provide feedback to participants, and were immediately resealed after each use. A record sheet detailing the use of each tab was kept by each

experimenter inside the sealed bag, as were the tabs assigned to them. The experimenters kept their security zipper-locked feedback pouches in a secure place in their offices during work days, and took them home with them each evening.

A locked large, metal cabinet ensured the security of the randomisation record sheets, the used and unused security bags, and all target materials which were not in use at any given time. Such target materials included the 'unused' target picture from any given target pack, randomized mega-packs which were awaiting distribution to a participant, used mega-packs awaiting re-randomisation, and used feedback envelopes. The doors of the cabinet were secured by means of three different locking systems, including a conventional key lock, and two different systems similar to that used to close the experimenter's feedback pouches (these security measures were chosen in consultation with RW). Only the three experimenters and the randomiser had keys to the conventional lock. The various tabs used to secure the other two locking systems were each uniquely numbered, and both used and unused tabs were stored in the locked cabinet, along with records detailing the use of each tab. It was not possible to enter the cabinet other than via the doors as the metal panels of the cabinet were joined by screws and welds on the inside of the cabinet, and hence were not accessible from the outside. Furthermore, the doors could not be opened by removing their hinges as the ends of the hinges were welded, making it impossible to remove them without leaving obvious entry signs. The cabinet was housed in one of a suite of six rooms that are used solely by the parapsychological research unit students and staff.

The Testing Procedure

There are many possible variations to the following procedure. The procedure listed below represents its current use in a 'real-time', clairvoyant design. Of course, different experimental designs would require various alterations to be implemented.

The actual testing session is tailored by each participant to best fit their own desires/requirements. They are free to gain impressions to a target whenever they wish, and upon as many occasions as they wish. They can choose to generate their impressions in whatever setting they think is most conducive to gaining target-related information, and are free to vary the setting when and as they desire. Furthermore, they may choose to gain impressions by whatever means or combination of means they wish (e.g., via dreams, following a relaxation procedure, whilst meditating, by simply asking for impressions to appear, etc.). As they have the target picture in their possession, they may place the target wherever they deem suitable (e.g., under their pillow, upon their laps, over their forehead, in their hand, etc.). Participants are able to know which side of the envelope is the 'face' of the target picture via the labelling of the manila bag in which the target is housed.

Participants are provided with forms on which to list and/or draw their impressions. After generating as many impressions as they wish, they are able to perform the judging task using the duplicate judging pictures. The judging information is listed on the same form upon which they entered their mentations. After generating their mentations but before viewing the judging pictures, on the form participants rate how confident they

are that their impressions were accurate, using a 1 - 100 scale where 1 = no confidence and 100 = strong confidence. Then they list the numbers of each of the pictures contained in the judging pack on the form, and rate the degree of correspondence between their impressions and each picture using a 1 - 30 scale, where 1 = no correspondence and 30 = excellent correspondence. Different scales are used for the two ratings made by participants in order to help them differentiate between the two questions each rating addresses. The participants also list the date and time that each trial has been conducted, and the numbers of the mega-pack and target pack. Also the form provides space for the participant to make other comments about anything that they think may have influenced the session.

To obtain feedback about the target identity, the participant contacts the experimenter with whom they are working. If for some reason (e.g. holiday or illness) their usual experimenter is unavailable, arrangements are made for participants to receive feedback from another staff member whom they have previously met. Feedback can be provided via the telephone either immediately after the trial or at another time of the participant's choice, or via the post, or in person, again using whatever means best suits the participant. The participant is free to choose how often they receive feedback, i.e., after every trial, every other trial, etc.), although all participants are encouraged to receive feedback at least once every three trials. Before learning the target identity, the participant relays the judging information to the experimenter, conveying their ratings and describing the correspondences they observed between their impressions and the pictures they judged. The experimenter makes a record of this information on a form devised for this purpose, also listing the date and time that feedback was provided. Up to this point, the experimenter is blind as to the target identity. Once they have made note of the relevant judging information, the experimenter opens their zipper-locked pouch containing the feedback information, obtains the relevant envelope for that target pack, opens it and conveys the actual target identity to the participant.

THE STUDY

This study was conducted to test the efficacy of the above described methodology in eliciting positive psi scoring. To test the methodology under the most favourable circumstances, participants were chosen on the basis of their familiarity with and positive attitude towards the general testing procedure. Hence all participants had been involved in either the pilot or training study (both reported in Delanoy, Morris, and Watt, 1991) and already had considerable experience with the informal practice psi exercises from which the methodology evolved.

There had been a gap of two to three years between the two previous studies and the current one. Thus this study incorporated a three week 'refresher course' designed to review the mental exercises which had been a feature of the previous studies. The reviews of the previous exercises were included for several reasons. Firstly, they provided a very familiar context to help participants get back into the routine of doing a psi exercise on a regular basis. Secondly, they reminded the participants of what strategies and exercises had and had not been beneficial to their gaining target-related impressions previously, and it allowed them to further explore any specific exercises, if they so wished. Also, the three

week refresher period was used to provide a structure to the gradual introduction of new options available to participant in doing their exercises (e.g., when they receive feedback). Hence the primary benefit of these exercises was psychological and structural; there were no planned analyses of the impact of these exercises upon psi performance.

One feature of the new methodology is that it does not require participants to come into the lab to be tested, receive test materials or receive feedback. However, as the participants in this study previously took part in a study in which a great deal of laboratory experimenter time was individually and regularly lavished upon them, it was thought advisable to offer weekly laboratory visits to those who wished it. In all cases, participants chose to come into the lab to receive new mega packs (i.e., six target packs for at home trials) and to return their used ones. During this lab visit, feedback was given for any trials whose outcome participants did not already know via telephone contact with their experimenter, and the six trials they had done since their last visit were reviewed in depth.

Setting

All trials were conducted at a time, place and manner of the participants' choice. The weekly laboratory visits were conducted in the Psychology Department of the University of Edinburgh. Usually these visits took place either in the participant reception room in the parapsychology unit's experimental suite, or in the offices of the individual experimenters (DD, RM, & CW). The study commenced in late January and all the trials reported herein were collected by mid-May, 1993.

Participants

Twelve participants, four males and eight females, ages ranging from mid twenties to mid-seventies, contributed to this study. Nine of these had acted as participants in the previous pilot or training study, two having participated in the pilot study and seven in the training study. The three experimenters, DD, RM and CW, also took part as participants in this study. The three experimenters had several reasons for participating. Firstly we wished to gain a first-hand, 'insider', experiential understanding of working with the new methodology, and gain insights as to its strengths and its weaknesses. Secondly, we thought it would help improve our personal, subjective understanding of the process of gaining ESP impressions. Thirdly, we were interested in trying to reduce the traditional divide between experimenters and 'subjects' in experimental research. And, last but not least, we thought it would be fun.

The choice of participants from the previous pilot and training studies was based upon their desire to participate and, to a lesser degree, upon their previous ESP performance on the informal, take-home trials. All participants agreed before starting the study to complete 48 ESP trials.

While the study participants include the three experimenters, it was pre-specified that their data would be looked at separately from the non-staff participants, although the outcomes from the experimenters would also be reported. The reasons for this stem from the objective of wishing to evaluate the methodology under the most favourable circumstances. As the experimenters did not take part as participants in the previous pilot or training studies. they did not have established, favourable track-records in doing the informal exercises, as did the other

participants. Also, not all of the security precautions could apply as equally to the experimenters as to the other participants, as they had access to the security cabinet.

Target Materials and Randomisation

The target material consists of still (static) pictures of a roughly similar size, composed of postcards, art prints, and cut-outs from books and magazines. Duplicates of each picture were used for the judging pack.

No picture containing strong emotional content which might conceivably lead to target avoidance (e.g., sexual, frightening, violent, depressing, etc.), or which has a very boring and/or uninteresting content, as judged by mutual agreement of the experimenters, was included in the target pool. The two pictures comprising any given pack were judged by the experimenters to be dissimilar in terms of actual content, dominant colours and shapes, and theme. Each target pack consists of two pictures of either simple or medium complexity, as judged by mutual agreement of the three experimenters. Mega-packs contained target packs of both simple and medium complexity, the ratio of simple to medium complexity target packs in each mega-pack being either equal or two simple:four complex. Other information about the target materials, including the randomisation procedure, are described above in the presentation of the new methodology.

Procedure

The study was briefly described to participants when they were first contacted by telephone about possible participation. If they expressed initial interest in taking part in the study, they came into the lab for a meeting during which the study and new methodology were described in depth. Prior to this meeting the experimenters had decided who would act initially as the experimenter for each participant, this decision being based usually upon who had the most contact with each participant in their previous study. All participants knew the three experimenters, and were free to work with other experimenters whenever they wished, but no one took up this option.

During the first in-lab meeting of the study, the participant was offered the option of doing one of the psi exercises, using the new methodology, in the lab to ensure that they understood the procedure. This was the only psi trial which could be conducted in the lab, and only a few participants chose to make use of this option. This meeting was the first of the three refresher courses, and contained a review of the exercises involving mental and physical relaxation, self-esteem training, and an exploration of participants' attitudes to psi. The participants were given hand-outs summarizing that week's exercises, and these were discussed during the meeting. Before leaving the lab, the participant was given a mega-pack, containing six target packs, to work with during the coming week. Times were arranged when the experimenter could be contacted for feedback. During this first week the participants were strongly encouraged to obtain feedback after each trial. They were given one mega-pack to work with and were encouraged to do only one psi trial a day. As in the previous training studies, participants were also provided with a 'diary' in which they were to note anything which they felt may relate to their psi exercises. This diary was for 'their eyes only', but it was explained that we hoped they might notice trends and patterns in their work with the psi exercises which would enable them to gain a better understanding of and to improve their ESP abilities.

The exercises for the second week of the refresher course involved reviewing a variety of mental imagery exercises and the third week covered their previous focusing of awareness exercises, and the 'Waiting Technique' (White, 1964). Hand-outs were given that reviewed each group of exercises. During the second and third weeks of the refresher course, the in-lab meeting consisted of a discussion of the practice of the previous week's exercises, the presentation of the next weeks' exercises and an in-depth review of the six psi trials they would have completed at home. Starting with the second week of the refresher course, participants had the option of taking more than one mega-pack home with them to explore the advisability of doing several psi trials a day. However, during these two weeks only the first target done on a given day would be counted in the results. After the refresher course had ended, participants would have all trials count in the results, unless otherwise specified in advance.

Feedback, conveyed via the telephone, was generally given on an on-going basis throughout the week. Starting with the second week of the study, participants were no longer strongly encouraged to receive feedback after every trial, but rather to obtain it as often as they wished, ideally at least once every three trials. While some discussion and review of each exercise was done via the telephone, a more thorough review of each psi session was conducted during the weekly in-house meeting. After the three week refresher course was completed, the 'business' aspects of the in house meeting primarily consisted of this thorough examination of the previous week's exercises, which would typically include a review of correspondences between the participant's mentation report and the pictures, and allowed for used mega-packs to be exchanged for new ones. It should be noted that by this time the experimenters knew their participants quite well, and it was not unusual to spend a considerable period of time (often the majority of the meeting) chatting on a variety of psi-related and unrelated topics.

There were slight variations of the above procedure for the staff participants. The experimenters provided each other with feedback. After completing a mega-pack, each experimenter could review those six sessions with another experimenter, but this review would generally be less detailed than that received by the non-staff participants. Also, as the experimenters had not practised the mental technique exercises in a previous study, they did not participate in the review of these exercises provided by the 'refresher course'.

Other procedural information is provided above in the description of the new methodology. With regard to this study, each participant was allowed to tailor the procedure to best fit their requirements. For example, during the refresher course if someone had not liked or had much success with a particular exercise previously, and they had no desire to explore it further, they were encouraged to work with some other, more promising and rewarding, exercise. Also, there was considerable variation between participants with regard to obtaining feedback. Some enjoyed receiving feedback after every trial, while others felt simply doing the judging provided adequate feedback, and thus did not seek frequent feedback from their experimenter. Some took breaks of varying lengths during the course of the study. Others did not wish to do this, with one participant even taking two mega-packs on holiday to Australia and telephoning long-

distance for regular feedback. Also, the role of the experimenter in this study varied from participant to participant. Some participants relied heavily upon the experimenter for guidance, whereas others required very little. Generally, the experimenter's role was that of a guide who would offer encouragement and advice as appropriate, while realizing that in many respects their participants were the true 'experts', possessing considerable knowledge and insight into their own psi processes.

Results

The study was planned to have 576 free-response ESP trials, of which the 432 trials contributed by non-staff participants were to be the data used to represent the study outcome (e.g., for future meta-analyses), with the additional 144 trials contributed by the experimenters also being reported for the sake of completeness. However, one participant has withdrawn from participation, at least temporarily, for personal reasons, after having completed only 12 trials, and another has completed only 18 trials to date, due to illness. The incomplete data from these two participants shall be included in the overall results, and in other appropriate analyses, but will be excluded from any across session analyses. Thus, the main overall analysis reported herein will be based on the 366 trials contributed by the non-staff participants, the across session analysis being based upon 326 trials (from the seven non-staff participants who have completed all their trials), with the outcomes of these analyses including the experimenters' data also being reported.

All the analyses reported herein were pre-planned. These analyses are those most germane to the overall effectiveness of the new methodology. Other analyses have been planned and will be reported elsewhere.

1. The non-staff participants contributed 366 trials, with 205 hits, achieving overall significant, positive psi-scoring, $p = 0.01$, one-tailed, as measured by an exact binomial. The effect size (es) = .121 (Cohen's h). The overall hit rate was 56%, whereas MCE was 50%. See Table 1 for each participant's hit data, listed by study week (i.e., a 'week' being equated to the completion of one mega-pack or six trials), and overall.

1a) The experimenters contributed 144 trials, obtaining 66 hits, scoring non-significantly below chance (46% hit rate). When added to the participants' data the overall results are nearly significant ($p = 0.072$, one-tailed, $es = .067$).

2. Examining the non-staff participants' scores individually, six of the nine participants scored above chance, two to a significant degree (participants 1 & 8 in Table 1) as measured by an exact binomial (32 hits in 48 trials, $p = 0.015$, one-tailed; 13 hits in 18 trials, $p = 0.48$, one-tailed). See Table 1 for further details.

2a) Examining the experimenters scores individually, two scored non-significantly above chance, and one scored strongly below chance (16 hits in 48 trials, binomial z equivalent = -2.48).

3. The results were examined for experimenter differences by determining if the three effect sizes produced by combining the scores of each experimenter's participants differed significantly ('Program F' in Mullen & Rosenthal, 1985). No significant difference was obtained ($\chi^2 = 1.391$, 2 df , $p = 0.499$).

TABLE 1
Number of Hits of Each Participant, by Study Week (mega-pack) and Overall

Ss	Week (MCE = 3)								Total	
	1	2	3	4	5	6	7	8	Hits	N
1	3	3	4	6	5	2	6	3	32*	48
2	3	3	5	2	3	4	3	4	27	48
3	3	3	3	3	1	2	4	5	24	48
4	3	4	3	3	2	4	2	2	23	48
5	2	2	4	4	4	3	4	3	26	48
6	3	4	4	2	5	5	4	2	29	48
7	5	4	4	1	2	2	5	3	26	48
8	4	4	5						13*	18
9	4	1							5	12
\bar{x}	3.33	3.11	4	3	3.14	3.14	4	3.14	205**	366
staff Ss:										
10	2	2	3	3	1	2	1	2	16	48
11	4	4	5	3	3	3	1	2	25	48
12	2	4	6	3	3	3	2	3	26	48
\bar{x}	3.17	3.17	4.18	3	2.9	3	3.2	2.9	272	510

*p < 0.05

** p = 0.01

4. Spearman rank-order correlations between number of hits and study week (a 'week' = 1 mega-pack or 6 trials) were used to examine across session effects. The first and last weeks were omitted from this analysis as there were strong first and last session effects (hitting and missing, respectively) in the previous study. No significant across session effects were found (non-staff participants: $N = 6$, $Rho = 0.116$; all participants: $N = 6$, $Rho = -0.492$). As will be apparent from Table 1, if the data from the two participants who have not finished the study were included, the outcome would still be non-significant.

Discussion

The overall significant scoring by the non-staff participants is very encouraging. Whether their results were positively influenced by their previous experience with the informal trials is unknown, although it should be remembered that they had considerable previous practice with this general method, whereas the staff participants (the experimenters) did not. However, the lack of any improvement across sessions in either this study or in the informal trials in the previous studies, may suggest that practice in obtaining psi impressions does not lead to improvement in performance. Of course, this lack of improvement could be due to a large number of other confounding variables. While there was no significant increase in scoring across sessions, neither was there any significant decline. This suggests that using this methodology, 48 trials per participant were not too many.

It is interesting that the non-staff participants scored significantly above chance, whilst the experimenters did not, with one scoring well below MCE. In fact, it was the senior author, DD, who only obtained 16

hits, whilst all of her participants scored at or above chance, two to a significant degree. It is tempting to speculate that DD, as primary developer of the methodology, was especially concerned that the study be successful. This may have resulted in a 'performance anxiety' that adversely affected her own results, but not those of her participants.

The overall significant outcome obtained by the non-staff participants is especially encouraging in light of the many experimental advantages provided by the new methodology, which are not commonly found in laboratory-based free-response ESP testing procedures. These advantages extend to both the experimenter(s) and the participants. From the perspective of the participant, the most obvious advantages relate to control, convenience and spontaneity. This methodology frees participants from many of the artificial constraints imposed by lab-based testing procedures, and gives them control over many of the factors influencing a trial by offering them a virtually unlimited number of choices as to how their sessions are conducted.

Robinson (1982) has detailed the potential importance of participants having choices in how they conduct psi tests. Robinson summarises the psychological literature on choice and perceived control, which has shown that if participants believe they have control (i.e., perceived control) when performing many types of tasks, their performance will improve. This improvement is credited to increased feelings of competence which in turn leads to increased motivation. Whilst participant motivation has long been recognized as an important component in psi research, Robinson notes that many motivating factors are positively correlated with arousal. As high arousal may be psi-inhibitory, as indicated by work examining psi-conducive states and Braud's (1981) finding of a curvilinear relationship between psi performance and arousal, psi researchers face the dilemma of trying to enhance motivation without interfering with a psi-conducive state. One means of solving this dilemma, postulated by Robinson, is to create a testing environment in which participants are able to make choices which might make them feel more in control. The significant psi scoring obtained in this study appears to endorse Robinson's ideas regarding the psi-conducive nature of giving participants some control over their psi testing sessions.

While participants' ad hoc comments indicated that they appreciated the freedom, control and spontaneity offered by this methodology, it is not known whether less experienced participants would find the many choices offered by this methodology psi-conducive or psi-inhibiting. Naive participants may need more experimenter support, guidance and contact than do experienced participants. This methodology allows for frequent, trial by trial, contact between experimenter and percipient (e.g., telephone conversations to give feedback), and provides for regular lab meetings, if desired. Furthermore, it gives the participant control over how much interaction they have with the experimenter (e.g., the participant phones the experimenter when they wish to speak to them, and also decides when/if to have a lab meeting). Thus, this methodology should enable naive participants to have as much interaction with their experimenter as they require/desire. Nonetheless, evaluating the impact upon naive participants of not having experimenter support and presence during the actual testing period will have to await future experimentation.

This methodology offers many advantages from the perspective of the experimenter also. Among these is a very economical use of experimenter time. Conducting free-response trials in the lab can be very time-consuming. Yet, even though this methodology offers the participant as much interaction with the experimenter as they wish, in the present study we were able to collect six trials in the same approximate amount of interaction time that was required for a single, in-lab, trial in the previous training studies (we estimate that the collection of six trials required an approximate average of 1 1/2 to 3 hours of experimenter time, with roughly a 50/50 division between telephone contact and in-house visits). Thus, this methodology enabled the collection of over 500 free-response trials in the relatively short period of three to four months. Furthermore, we were able to collect these trials without monopolising limited experimental facilities, which were then available for use with other, laboratory based, procedures. Indeed, the in-house review sessions were frequently conducted in the experimenters' offices, as our experimental rooms were being used for sessions from other studies that had in-house procedures.

Another advantage of this methodology for both the participant and the experimenter is the ease with which testing circumstances can be tailored to fit the needs, requirements and/or desires of a participant. The latter can explore different settings, methods of gaining impressions, judging strategies, and so on, while the experimenter does little more than provide helpful advice and suggestions. This freedom was appreciated by the participants, some of whom adopted creative and spontaneous approaches to doing their trials. For instance, one participant felt distracted by her cats when trying to do a trial one evening, so hopped in her car and drove to a peaceful spot in the surrounding countryside, where she generated her impressions.

In this study participants were able to contact their experimenters for feedback at their homes in the evening and on the weekends, and many made use of this option. Thus, this study 'went home' with the experimenters, and could be characterised as being more a part of our daily life than are studies where sessions are done only in the lab. This could be viewed as inconvenient and/or intrusive by some researchers, although these three experimenters did not find this aspect of the methodology troublesome. In this study, DD worked with four participants, RM with three and CW with two, not including ourselves, and we all felt that we could have easily accommodated more participants. Based on our experience, we suggest that no experimenter should work with more than six or eight participants at the same time, if frequent feedback is being given. However, this number is rather arbitrary, and would depend largely upon how much the experimenter enjoys frequent, telephone contact with their participants, and upon the time of day that feedback was requested and how these times fit in with the experimenter's schedule and life style. We feel that it is very important always to be genuinely glad to hear from one's participants, and that this should be the guiding principle in deciding how many participants one could pleurably work with. If researchers were concerned about this aspect of the methodology, a possible solution may be to limit to convenient periods the times that feedback will be given. The advisability of doing this will become clearer once we have completed a planned analysis to examine the influence of the amount of time elapsed between doing a trial and receiving feedback.

It was interesting to note that the partners of this study's participants tended to become involved with the trials, usually via the sharing of the results of the judging procedure. Whilst purely a post hoc observation, it did appear that this involvement increased as the study progressed, even when the partners were initially uninterested in the study or the study topic. In one extreme case, a participant's partner actually started attending the review session in the lab, and took an active role in the discussion and review of each trial. This suggests that the 'at home' aspects of this methodology may encourage the involvement of significant others in the study, perhaps more readily than does in-lab testing procedures. If this observation is accurate and others from the home environment do become increasingly involved in the study, this could facilitate the assimilation of psi experiences and/or psi testing into one's everyday life. While we think this integration has had positive implications for this study's participants, it is also recognized that it could be problematic if, for example, the significant other's involvement is distracting or becomes competitive.

The security measures of this study were felt to be relatively tight by the authors, but of course, nothing is absolutely 'fraud-proof'. In this study there were a set of procedures which were to be followed if any participant started scoring especially well. These procedures included a very careful opening and following examination of the used security bags by RW, to ensure that they had not been very cleverly and carefully entered. Also, he would add-in further 'booby traps' to the security bags given to especially successful participants. Given the ease with which these pre-planned procedures could be implemented, the experimenters did not need to be concerned if a participant did perform outstandingly well. In this study, the testing materials of only one participant were singled out for this special inspection, and they revealed no evidence of 'foul play'.

There is one feature of this methodology, involving the housing of the target picture, that will be changed before another study is conducted. For this study, the sealed padded envelope containing the target picture was labelled with the picture number, to assist the randomiser to identify the chosen target picture, without having to look at the labelling on the picture itself. While the number could not be seen via scans (which would not penetrate the security bag), it is conceivable that a very minute hole could have been made in the security bag, which may have allowed the picture number to be viewed with fiber optics. While such a very small hole might be overlooked in a casual inspection of the bag, it would be detected by a more thorough inspection. RW examined some bags from very successful sessions, and found no evidence of this form of entry (or any other). Thus while we see no evidence that this, or any other, form of cheating occurred in this study, we will in the future be cross-labelling the padded envelopes so that the number on the envelope will not be the same as that on the picture.

The target pool for this study consisted of over 650 different pictures. Yet even with such a relatively large target pool, problems did arise stemming from over-familiarity with the pool, not only for the experimenters who were familiar with all the targets, but also for participants who had encountered some of the pictures in their previous study. Specifically, participants tended to have impressions which

corresponded with pictures they had previously seen and which they knew could again be the target. In future studies, we will seek to ensure that a participant never encounters the same picture twice.

Given the current format of this methodology, some of the experiential richness of the data is lost, as there are no tapes of the sessions which would enable various qualitative analyses (e.g., discourse analysis). Indeed, no formal use can be made of the qualitative data, as the participants have the judging materials in their possession, and could easily 'write their impressions' after having peeked at the possible target pictures. While this would have no effect on their overall scoring rate, it could result in strong correspondences to target and non-target pictures (i.e., apparent displacement). The possibility of doing the judging at a later date, after the mentations had been collected by the experimenter, is an approach that we intend to explore in future studies.

While there are some process-oriented analyses planned for the data collected in this study (e.g., analyses examining feedback intervals, geo-magnetic effects, target complexity and successful vs. unsuccessful target characteristics), the primary purpose of this study was to explore the efficacy of the methodology. Given the encouraging outcome of the primary analysis, we have plans to conduct more studies using this methodology. Also, several participants from this study are keen to do more work using this method. Our current aim is to identify factors which are frequently associated with a successful trial for individual participants. Such factors might be an especially high confidence rating, a large difference between the correspondence ratings given to the two pictures or some combination of those factors. We will be exploring the possibility of identifying such factors for each individual participant, and then specify that only those trials which contain this factor will be counted in any study, which would substantially increase the power of this methodology. Another way of increasing the power might be to increase the number of pictures in the target packs from two to four.

We believe the methodology could be adapted to examine a variety of hypotheses and models. Whilst our current usage of it is in a clairvoyant, real-time design, we have plans for precognitive and telepathic designs. Some of the first process-oriented studies we would like to pursue would be those directed towards helping us better understand the limits of the methodology. For example, we would like to examine the influence of systematically varying the length of time between judging a trial and receiving feedback, and also examine whether feedback is even required. It is interesting to note that as the study progressed, some participants felt that simply doing the judging procedure provided the feedback they needed.

As previously mentioned, this methodology requires a greater degree of on-going involvement on the part of the experimenter than do most in-lab methods. Similarly, it is well suited to participants who are interested in exploring psi in a more involved, in-depth way than is offered by simply taking part in a few lab sessions. Our previous training studies have provided us with a small number of participants who have already devoted considerable time and energy to our research, are scoring well and are keen to do further work. And we have further training studies planned, similar to the previous ones but utilizing the new methodology,

which we anticipate will produce more participants interested in a long term involvement with our work. One problem we have had previously is how to keep these participants actively involved in between our formal studies. Another concern has been how to keep them contributing to studies in a way that is meaningful and interesting to them. Again, we hope that the methodology presented herein will help us achieve a motivating testing environment for these participants, while providing answers to some of our concerns. This will require varying conditions from study to study to keep the participants interested, and also will necessitate continuously expanding our target pool. We have planned to have a variety of different studies on offer at any given time to which any participant can contribute a set number of trials using the methodology, with minor alterations to the procedure being instigated as required. Ideally, participants will be able to choose to which study they wish to contribute (e.g., precognition, feedback interval, etc.).

Hence, we are very excited about the many possible applications of this methodology. Our first study exploring its efficacy has lived up to our expectations, and we shall be seeking the funds to enable us to carry out our planned research utilizing it.

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References

- Braud, W.G. (1981) Psi performance and autonomic nervous system activity. Journal of the American Society for Psychical Research, Vol. 75, pp. 1-36
- Delaney, D.L., Morris, R.L., & Watt, C.A. (1991) A study of free-response ESP performance and mental training techniques. Proceedings of the Parapsychological Association 34th Annual Convention, Heidelberg, Germany, August 8 - 11, 1991, pp. 101-115
- Mullen, B. & Rosenthal, R. (1985) BASIC Meta-Analysis: Procedures and Programs. London: Lawrence Erlbaum Associates
- The Rand Corporation (1955) A Million Random Digits with 100,000 Normal Deviates. London: Collier-Macmillan Ltd.
- Robinson, D. (1982) Motivation in parapsychology: competence, control and the choice effect. In W.G. Roll, R.L. Morris & R.A. White (Eds.) Research in Parapsychology 1981, Metuchen, N.J.: Scarecrow Press, Inc., pp. 103-106
- White, R. A. (1964) A comparison of old and new methods of response to targets in ESP experiments. Journal of the American Society for Psychical Research, Vol. 58, pp. 21 - 56