

A Study of Free-Response ESP Performance and Mental Training Techniques¹

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ABSTRACT: This paper describes an ESP training study designed to take into account individual differences in learning style and preferences. The study was not intended to be a formal evaluation of techniques for training ESP; rather, its aim was to suggest promising techniques that could be explored more thoroughly in subsequent studies. Participants were presented with a variety of mental techniques suggested through folklore, reports from skilled psychics, and some experimental findings to be valuable tools for successful psi performance. Participants had many opportunities to practice these exercises in association with a free-response ESP target using an informal, "at home" procedure. It was hoped that individuals would learn for themselves their own particular style of responding to targets, with their trainer acting as a guide. Fourteen individuals took part in two preliminary sessions, twelve training sessions, and one follow-up session. Formal ESP testing occurred during each of the training sessions. There was no significant above chance ESP scoring on the primary overall psi measure ($z = 1.07$, $es = 0.083$). The primary across-session scoring analysis revealed a nonsignificant decline in ESP scoring across all the sessions ($r = -.138$), largely as a result of a "first session effect" (i.e., the best psi scoring was obtained in the first session). A secondary analysis examining performance in the first and second half of the sessions found nonsignificantly better scoring in the second half. The sessions associated with imagery exercises obtained better results than those associated with focusing of awareness (concentration) exercises, with the difference nearly reaching significance ($p = 0.057$, two-tailed).

Reports from gifted psychics and popular lore on "how to be psychic" suggest that with practice one's ESP performance can improve. For instance, White's (1964) Waiting Technique² was developed from common features contained in the methods used by gifted participants to gain psi impressions. Mishlove (1983) reviewed a wide range of techniques reputed to develop various aspects of psi ability. Morris (1977) surveyed the advice given in 74 books on developing psychic abilities. Some consensus emerged regarding the type of person, attitude, and routine recommended for developing psi. It was generally thought that the individual should be confident, mature, and accepting of psi and the consequences of becoming psychic. Also, relaxation followed by mind clearing and imagery or meditation techniques to facilitate the psi process were often recommended. Clearly these popular guidelines receive some support from experimental studies of psi-conductive states of awareness as well as from the literature on individual differences. For instance, Braud's (1975) psi-conductive

syndrome, which was based on a noise-reduction model of psi, recommended physical relaxation and an increased awareness of internal processes. Also, involvement with various forms of mental training has been correlated with psi scoring success (e.g., Honorton, 1997). Additionally, reviews and meta-analyses have found a small but fairly consistent relationship between attitude toward psi and psi performance, whereby those who are accepting of ESP tend to have higher ESP scores than those who do not accept the idea of ESP (Palmer, 1978; Lawrence, 1998).

The identification of training techniques that improve or stabilize psi performance has an obvious appeal to parapsychologists. If means can be found to make psi more reliably and more readily accessible under experimental conditions, then process-oriented research is more likely to produce meaningful results. In the laboratory, this question has been addressed in various ways. Tart's (1975a, 1975b) learning theory approach suggested that immediate feedback after correct ESP responses should enhance ESP performance by increasing the participant's motivation, decreasing their boredom, and facilitating their learning of subtle psychological cues that might be associated with correct responding. Several researchers have explored training to enhance mental imagery because imagery has been considered to be one of the mediating "vehicles" for psi impressions (Tyrrell, 1947; Rhine, 1978), yet literature reviews reveal no consistent evidence in support of the utility of imagery training (George & Krippner, 1984). In fact, to date there has been no well-replicated successful technique for training ESP (Palmer, 1978, 1982, 1986; Schmeidler, 1988, 1994).

This inconclusive experimental literature means that the question of whether ESP can be trained remains open. Yet the potential benefits to parapsychology of finding ways to produce stable and enhanced levels of ESP performance suggest that we should persist until a clearer picture emerges. Morris has conducted training research based on three broad considerations (e.g., Morris & Morrell, 1985). The first of these involves trainees' orientation: They should be open and positive towards psi, have a healthy self-attitude, feel comfortable with the idea of participating in controlled experimental research, and be familiar with its rationales. Furthermore, all potential trainees should be given preliminary exposure to the specific environment, procedures and personnel to be employed, so they can make an informed decision on whether to participate. The second consideration involves the experimenters or trainers. They should be given training in how to train others and have personal experience with any techniques they are training others to use. They should enjoy working with people, be accepting of psi and be enthusiastic for success. There also may be advantages if participants work with two trainers, with the second trainer acting as an assistant. This allows trainees to work with one trainer if preferred. The third consideration is that the training should consist of mental skills and psi practice. The basic mental skills of relaxation, concentration, and visualization are recommended. These skills are helpful

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² "Waiting Technique" is the name the authors have used to describe the set of procedures described by White (1964).

within the context of a noise-reduction model of psi (e.g., Honorton, 1978; Braud, 1975, 1981). The psi practice should include giving participants materials to take home so that they can learn for themselves their own idiosyncratic style of responding to a psi target and develop a sense of what works best for them (e.g., ritual, environment, pacing of state induction, etc.). The psi practice is also intended to enable participants to learn to discriminate psi from nonpsi mentations (Braud & Wood, 1977; Delaney, 1982, 1986, 1988-89). Braud and Wood found an increase in Ganzfeld free-response performance from pretest to posttest when participants were given intervening practice sessions in which receivers heard a tone whenever the sender felt the receiver's impression description was relevant to the actual target. Those given practice sessions without the feedback did not improve.

Delaney (1982, 1986) examined the role of experience and practice in a twelve-sessions-per-participant Ganzfeld study aimed at improving participants' ability to identify possible target-related mentations. However, there was no increase in scoring across sessions, which suggested that participants did not learn to better discriminate psi from nonpsi mentations. In a further attempt to distinguish potentially target-related mentation from other responses, Delaney (1988-89) examined characteristics of both receiver and sender Ganzfeld mentation. Additionally, receivers received a training session aimed at improving their judging ability. Only one of the 15 receiver mentation characteristics that were explored, that of "undeveloped, vague imagery," was found to relate to the target significantly more often than the others. Given multiple analysis considerations, this study offers little support to the possibility that, across receivers, certain types of imagery may more frequently convey target-related information than others. Other findings from this study could be interpreted as suggesting that simply receiving training in how to judge free-response material is less valuable than having considerable judging practice. The psi scoring based on receiver judging was very near to exact chance scoring, whereas that from an experienced, independent judge approached significance ($p = .053$, one-tailed).

Focusing on the mental skills of visualization and concentration, Morris and Bailey (1979; see also Morris, 1980) found that individuals reacted differently to visualization than to concentration, with those individuals practicing visualization either maintaining or improving their free-response ESP scores between pretraining and posttraining sessions, whereas the concentration group showed a significant ($p < .005$, two-tailed) decline in scoring. Morris and Morrell (1985), in a study incorporating body concentration and visualization exercises, in that order, found a significant overall decline in scoring. To explore the different effects of visualization and concentration, one might counterbalance their order of presentation to participants to see if there is any preference for visualization first, or visualization trials in general. One might also encourage participants to choose for themselves the extent to which they focus on visualization, or

concentration, or both. Several participants in the Morris and Morrell study also commented that the decline in scoring might be due to anxiety in the posttraining ESP measure. These studies have employed pretraining and putting pressure on participants to perform well during the posttest.

PILOT STUDY

The present authors (DD, RM, & CW) conducted a pilot training study from December, 1989 to April, 1990. The aims of the study were to refine our methodology and to get participants' feedback on it, to train DD and CW as trainers, and to explore the use of Honorton's dynamic video clips as targets (Honorton et al., 1990). Prior to that study, the three authors and other staff and students at the Koestler Parapsychology Unit (KPU) had personally explored a wide variety of mental techniques and exercises pertaining to relaxation, mental imagery, concentration, self-esteem, fear of psi, and stress reduction. These explorations were relatively informal, occurring approximately once a week in the evening over a period of many months. An ESP exercise would usually be done in conjunction with each mental exercise to examine its utility in helping gain target-related impressions. These evenings allowed the experimenters to experience a wide range of mental techniques and to decide which of these exercises would be used in subsequent training studies.

Seven participants, most of whom were well known to the experimenters, took part in the pilot study. They knew the study was a pilot for future training work and was designed to be a "learning experience" for both participants and experimenters. All participants agreed to provide constructive feedback about the experimental procedure. The study consisted of one preliminary meeting when the procedure and goals of the study were described. Each participant then took part in eight formal laboratory sessions, occurring approximately once a week. In each session, the participants were introduced to a new set of mental exercises, with each set having a theme (e.g., relaxation, mental imagery, etc.). Participants were fully led through each exercise in the lab and were given handouts describing the exercises to enable home practice. Participants were asked to try to spend approximately 30 minutes a day, 6 days a week, practicing the techniques. Also, they were given informal free-response ESP exercises that used static pictorial targets in conjunction with practicing the mental techniques. providing practice in gaining psi impressions and in performing blind judging. Each lab session also incorporated a formal free-response ESP exercise in which participants were verbally given a relaxation exercise, thus one of the experimenters were verbally given a relaxation exercise. ESP impressions they were receiving in response to a remote dynamic video clip being viewed by a sender. All three experimenters were present at each lab session (although only one was the sender).

providing a thorough training in presenting the mental and ESP exercises. Each session lasted for approximately two to three hours.

The formal, in-lab ESP results were judged by two independent judges, Charles Honorton and Carl L. Sargent, each of whom had considerable previous experience in judging free-response material.³ The outcome, based on an average of the independent judges' two sums of ranks, was nonsignificantly negative ($n = 56$, obtained sum of ranks = 145.5, $MCE = 140$, $z = -.60$, effect size = $-.08$). A weak, nonsignificant scoring decline across sessions was indicated by a Spearman correlation between the average of the judges' sum of ranks correlated with session number ($r_s = -.173$, $n = 8$). Feedback from the participants indicated that the study had incorporated too much new information in too short a time. They also remarked that the dynamic video clips were rather complex and too unlike the static pictures with which they were practicing at home. Participants felt that they had performed better with their practice ESP exercises at home than they had in the formal lab testing, although they enjoyed the lab sessions and the personally delivered relaxation exercises. A few of the participants commented that having all three experimenters sitting in on each session was somewhat daunting. It was decided to conduct a formal training study remedying the drawbacks that had been identified for this study to see whether the changes would make the methodology more psi-conductive.

CURRENT STUDY

The present study examines whether training in physical and mental relaxation, mental imagery, and focusing of attention⁴ might correspond with improvements in free-response ESP performance. The study was not intended to be a formal evaluation of the utility of these techniques for training psi; rather, its aim was to examine and explore techniques that seemed most promising. If deemed appropriate, these could then be investigated more rigorously in subsequent studies. The research was guided by a general humanistic philosophy, with several consequences for the way in which the study was conducted and the conclusions that might be drawn from it. First, participants should be of all ages (i.e., not just students) and should feel comfortable with the idea of developing their ESP. Furthermore, they should have the time and the motivation required to participate in what would be a fairly lengthy and intensive study. Second, participating in the study should be a rewarding and worthwhile experience. Principally for this reason there was no "no training" control group of participants. Thus, in this study we were not attempting to show a causal relationship

³ The authors would like to thank Charles Honorton and Carl Sargent for kindly performing the independent judging for this study.

⁴ It was felt that *concentration* could be a term with rather negative connotations for some people, so we chose instead to refer to *focusing*.

between mental training and any observed improvement in ESP scoring. Third, participants would be presented with a variety of mental exercises and ways of responding to ESP targets. There would be an emphasis on flexibility, so that participants would try everything presented to them but would be encouraged to select and develop whatever mental techniques they found most useful and similarly develop whichever means of responding to the ESP target they found most productive. In the evaluation of the results, therefore, it would not be possible to ascertain quantitatively whether a particular mental technique, or combination of techniques, was associated with any improvement in ESP scoring. Finally, there would be regular formal and informal assessment of ESP performance, so that participants would become quite accustomed to the ESP tasks. We hoped that, as a result, participants would not feel the "performance anxiety" that could be associated with a study taking only pretraining and posttraining assessments of ESP.

METHOD

Participants

The primary criteria for participation were that volunteers had the time and the motivation to do so, and had a favorable home environment in which to practice the exercises they would be given. All were recruited from a pool of individuals who had, on their own initiative, contacted the Koestler Parapsychology Unit indicating their interest in parapsychology and their willingness to take part in research. Of 18 who started, 14 participants completed the study (4 men and 10 women, median age 44, range 20–66). Two individuals dropped out at the preliminary interview stage before any psi measurements were taken; the other two dropped out after two and four training sessions respectively.

The three experimenters had experienced a wide variety of mental techniques, including those incorporated in the present study. Both RM and DD had extensive prior experience with free-response ESP methodologies and had conducted research exploring aspects of the development and training of psi abilities; CW received training in the use of these methods during the pilot for the present study. During this study, DD and RM took on the role of "trainer" for five individuals, and CW for four; each experimenter acted as "assistant" experimenter for another four to six individuals who were being trained by the other two experimenters. Originally each experimenter had been assigned six participants for training. The assistant was present at the start of each session and was responsible for laying out or sending the target, and left after giving the participant feedback about the target's identity.

Setting

The study was run primarily from January to May, 1991 (a final, follow-up interview session with each participant was held during the summer of 1991). During this time each participant attended two preliminary and twelve training sessions, usually at weekly intervals, held in a suite of experimental rooms in the Department of Psychology of the University of Edinburgh. (See Appendix A for a plan of the experimental suite and the sending rooms.) The suite includes an initial greeting area where refreshments were offered, a comfortable reception room where most discussion with participants took place, and a partially sound attenuated and electrically shielded room (referred to as the *relaxation room* in this study). This last room contained a comfortable reclining chair in which the participant sat during the ESP session, as well as two other chairs and a table used by the trainer and by the participant during judging. DD's and RM's offices, located several rooms away and sensorially isolated from the experimental suite, were used as sending rooms and to house the targets when no active senders were involved.

Questionnaires

All those interested in participating in KPU research were asked to fill out a 72-item Participant Information Form (PIF). This requested general background information about potential participants that would enable us to screen out potentially unsuitable participants (e.g., for this study, those who had extremely negative attitudes to psi) and to select participants according to their stated interests in the different research topics (e.g., psi training, machine PK, etc.). Prior to any formal ESP testing, all participants in the present study completed the Myers-Briggs Type Indicator (MBTI, Form G; Briggs & Myers, 1977). This was not scored until all ESP sessions had been completed, therefore participants and experimenters were blind as to participants' MBTI profiles. Previous free-response ESP research conducted in the USA (Honorton & Schechter, 1987; Broughton, Kanthamani & Khilji, 1990; and Honorton, 1997) has suggested a four-factor "success model." High ESP scoring was associated with Feeling-Perceptive types on the MBTI, prior psi testing other than in the Ganzfeld, involvement with a mental discipline, and personal psi experiences. With the information contained in the PIF forms and the MBTI, we could therefore explore whether this success model would be found with the Edinburgh participant population.

Equipment

A cassette tape recorder was used to record the participants' mentations and their later elaboration on their mentations during the lab psi exercise.

The trainer's voice was also recorded. Two stopwatches were used to enable the assistant and the trainer to coordinate the sending period with the participant's mentation period, when a sender was used.

Targets

Targets were pictorial, consisting of approximately postcard-sized art prints and photographs mounted on standard-sized, light gray cards. The three experimenters created approximately 150 target packs, each consisting of four pictures chosen by the three experimenters to be as different from each other as possible in terms of dominant colors, shapes, themes, and content. Furthermore, the three experimenters, by means of mutual consensus, roughly matched the four pictures in each pack according to the complexity of their content: low, medium, or high complexity; these three categories of target packs are referred to respectively as simple, medium, and complex. Duplicate target packs were used for judging. The participant's judging pack contained four pictures within a single opaque envelope. The assistant's sending pack consisted of an opaque envelope that contained four pictures, each within its own numbered opaque envelope. The assistant was therefore able to remove the designated target from the pack without viewing the other pictures contained in the pack, when appropriate (see below).

Randomization

The jobs of allocating target packs to participants for the formal lab and remote ESP tests, and designating of the specific target for each pack, were randomly assigned prior to the commencement of the study by a person not otherwise involved in the study. Published weather data were used to find an entry point in a standard random number table (Rand Corporation, 1955). The last digit was selected from the "highs" (in Fahrenheit) for the first six cities in the World Weather section of *The Scotsman* newspaper of 14.1.91 [January 14, 1991], to provide a six-digit number. The first five digits of this number were used to locate a specific row in the Rand table and the sixth digit indicated which block of numbers would form the starting point. All randomization proceeded from this entry point. The first randomization task was to assign target packs to each trainee for each of their twelve sessions from 64 possible target packs (32 simple and 32 medium complexity). Continuing to work through the random number tables, targets were then designated for each target pack. No trainee was assigned the same target pack twice (if this did occur, that number in the random tables was skipped, and the next used). The randomizer filled in envelopes identifying the participant and trial. The target pack designation was written on the inside flap of each (unsealed) envelope. The target designation was written on a piece of paper that was folded three times and

placed inside the envelope. This enabled the sender to retrieve the appropriate target pack without knowing the target designation. The designation envelopes were kept in a locked box in a room in the experimental suite that was not otherwise used in this experiment. The three experimenters had the only keys to the lock on the box. The algorithm used to select the entry to the random number tables was unknown to the participants. As the participants had no access to either the keys to the locked box or the algorithm used in the randomization process, it is unlikely that they would have been able to gain knowledge of their targets for each trial.⁵

ESP EXERCISES

All the participants of this study undertook three different types of ESP exercises. The formal measures are referred to as the *lab ESP exercise* and the *remote ESP exercise*. Additionally, participants practiced receiving psi impressions for targets that we gave them to work with at their home. These *home exercises* are not formally evaluated, as there were no measures ensuring security of target identity.

Lab ESP Exercises

The procedure used by the majority of the participants is described here. Some participants requested minor changes to this procedure and they were incorporated if security precautions could still be maintained (e.g., under no circumstances were participants allowed any access to the envelope containing the target for a session). A couple of participants, for instance, requested having the target envelope in the room with them (as they did for their home ESP exercises). Although we could not allow this, we could let them have a "surrogate" empty envelope, which they appreciated. As the sessions progressed, some participants chose to work primarily with one trainer so that the assistant's only involvement was to set out targets, when required.

The trainer and assistant escorted the participant into the relaxation room, where the participant sat or reclined in the comfortable chair. The assistant and trainer synchronized their stopwatches, the assistant wished the participant well and then both left. The assistant next obtained the target pack designation from the locked box and retrieved the designated target packs from an otherwise locked filing cabinet. Only simple and medium

⁵ In order to gain useful information about the target identities, a participant would either have to access the locked box or discover the randomization algorithm in its entirety, then work out exactly where the numbers pertaining to their particular targets would be in relation to those assigned to the other participants. To accomplish the latter, detailed knowledge of the targets assigned other participants would need to be obtained, requiring a fraudulent exchange of information among most of the participants, who by and large were unacquainted with each other until the study had been completed and they attended a poststudy party.

complexity targets were used for the lab ESP exercise, with packets from each category equally likely to be chosen for any given trial. The participant's pack of pictures was left on a table in the central greeting room to be retrieved by the trainer for the judging procedure. Then the assistant took the pack of duplicate pictures to the sending room.

Once in the sending room, the assistant looked at the target designation slip and removed from the target pack the envelope containing the appropriate target. Initially the assistant actively experienced the approach whole of the stimulus period. As the sessions progressed the target for the generally became less active, looking at the target and then laying it out on a table or chair and turning his or her mind to other business which would not require intense mental involvement. After the initial trials, some participants requested to have no sender, which better reflected the conditions of their informal home psi exercises. For these trials, the target was left inside its envelope so that even the assistant was unaware of its nature. On all of the lab ESP trials the target identity was always unknown to the trainer and unavailable for any observation by the participant. Both sending rooms were on the top floor of the building and the targets could not be viewed through any window.

Meanwhile, in the relaxation room the trainer ensured that the participant was comfortable and ready to begin the session. The structure of these sessions was as flexible as possible, so that if participants had a favorite way of responding to their home targets then every effort was made to incorporate their wishes, with the obvious exception of anything that might compromise the security of the target identity. The participant did a 1-15 minutes (either self-guided or trainer-guided, according to the participant's wishes) mental and physical exercise of his or her choice (except for the first training session, see procedures below). The prementation exercise usually consisted of a period of relaxation, sometimes followed by some mind clearing, focusing, or imagery exercises. At a prearranged time, the trainer activated the tape recorder and informed the participant that the mentation period had begun. The participant was requested to silently make a gentle wish to receive impressions related to the target picture.

The participant then made a continuous verbal report of all of his or her experiences during the mentation period. The mentation period was approximately 5 to 15 minutes in duration, depending on the participant's preference. The trainer usually remained in the relaxation room with the participant throughout the lab ESP exercise and simultaneously noted the mentation on a judging form. The participant was free to terminate each impression period at any time. Following termination, the trainer read back the mentations and elicited any further associations, elaborations, drawings, etc., that the participant may not have verbalized during the mentation period. Following this, the tape recorder was switched off, the trainer retrieved the participant's target pack from the greeting room, and both proceeded to complete the judging procedure. To better mimic their home exercises, a few participants requested to be left alone during the

period. In this case, after the mentation period, the experimenter would usually return to the relaxation room and the mentations were reviewed by listening to the tape-recorded impressions, which the experimenter would then note on the judging form. Further additions were then elicited and the procedure described above was followed. Occasionally, a participant chose to review recorded mentations alone; in these infrequent sessions, the participant would write out each mentation item on a judging form before summoning the experimenter for the actual judging procedure.

Judging procedure. For the lab ESP exercise, both holistic and atomistic judging procedures were used. The overall scoring for the session was based on a combination of these two methods. The holistic procedure was completed first. The participant studied the four pictures while the trainer read aloud the mentation. The participant was asked to rank order the four pictures according to the participant's overall impression of the correspondence between the mentation and the pictures, and each picture was given a rating on a 1-30 scale to reflect the degree of correspondence between each picture and the mentation (no tied ratings were allowed). Then the atomistic judging took place. Our atomistic judging method differed from the "descriptor list" methods used in some other labs, as it was not tied to specific, predetermined elements. Instead, it was based on careful consideration of each separate mentation item made by the participant. The trainer read aloud each mentation item and the participant rated its degree of correspondence to each of the four pictures on a 0-5 scale (i.e., each picture received a rating for each mentation item). The trainer played a more active role here than for the holistic judging by pointing out apparent correspondences that the participant failed to notice. The points (i.e., 0-5) allocated to each picture for each mentation item were totaled across the entire session, giving a total, atomistic session score for each of the four pictures. These totals were used to rank order each picture for the atomistic judging; then based on the rank ordering, the participant once again gave a 1-30 (atomistic) correspondence rating to each of the pictures, so that these ratings would be comparable to those done without knowledge of the atomistic outcomes. The overall correspondence rating points given for each picture for the holistic and atomistic judging were totaled to provide the overall ranking for each picture for that session. In the event of a tied rating (after adding the atomistic and holistic ratings) the participant was asked to break the tie according to his or her own personal preferences.

On completion of the judging, the assistant was summoned by telephone to reveal the target identity, and all three discussed the session together. Experimenters kept the session records for each of their participants in a secure location in their offices. At the completion of the study, all target records were compared with the original records kept by the person who did the randomization.

Remote ESP Exercises

Throughout the study, each participant had a remote target located in the office of his or her trainer. The participants of DD and RM were able to choose where their target was to be placed (e.g., on a wall, etc.); DD and RM sought to keep their office locked whenever it was left unoccupied. As it was impractical for CW to keep her office locked, her participants' remote targets were kept in a locked file cabinet in her office; her participants chose where in the file cabinet they would be kept. The remote target was changed after each participant's visit to the lab. The target was selected by someone other than the trainer, using preset instructions from the randomizer as with the lab targets. The target was placed inside two opaque envelopes and the trainer remained ignorant of the target identity until judging was completed. Participants were encouraged to generate impressions of this remote target as part of the ESP practice that they would be doing at home every day. They were given sheets on which to write these mentations and were asked also to include any drawings they might wish to make. At each visit to the lab, participants judged the remote target for the previous week using a duplicate target pack. Each of the four pictures was ranked holistically according to its correspondence to the participant's impressions, then it was given a 1-30 rating to convey the degree of this correspondence. On completion of the judging, the opaque envelopes were opened and the actual target was viewed for feedback. Complex targets were used for all the remote trials because we thought that a rich content would be more stimulating for the participants who would be repeatedly attempting to gain impressions of the target.

Home ESP Exercises

These exercises were designed to give the participants the opportunity of daily practice at gaining ESP impressions of a hidden target, in a situation where they could receive immediate feedback as to the target identity.

At the end of every session in the lab each participant was given a pack of pictures to practice with at home. Each pack had six pairs of pictures (three pairs of *National Geographic* pictures and three pairs of pictorial targets of a similar nature to those being used for the lab ESP exercise). Each picture was enclosed within an opaque envelope labeled with an identifying number on the back so that the participants could not accidentally see the contents of the target. At home, and keeping themselves blind as to the actual target contents, the participant generated impressions to one or both of the target pictures using a variety of techniques as detailed below (see Training Sessions 1-12). Their impressions were noted in a diary that had been given to them for this purpose. Participants then blind judged their impressions against the target pair, knowing from the target envelope the identification number but not the contents of the target. They then

discovered the target identity by turning over the two possible targets to see their identification numbers on the reverse side of the card.

The results from these informal home ESP exercises were thoroughly reviewed and discussed with the trainer at the next lab session. The participants were also encouraged to phone their trainers at home or at work if anything arose that they wanted to discuss immediately.

SESSION PROCEDURES

The study consisted of 2 preliminary sessions (P1 & P2), 12 training sessions (T1-T12), and 1 follow-up session for each participant. During the course of the 12 training sessions, participants were encouraged to spend approximately 30 minutes daily practicing various exercises at their homes. The first 14 sessions were spaced at approximately weekly intervals (with breaks due to holidays, illness, etc.) and the 15th session took place 3-4 months after completion of the last training session. In order to provide what may be a valuable resource for other researchers, we give below a detailed description of the procedure and specific contents of these 15 sessions.

Preliminary Sessions

The purpose of the first meeting, P1, was to inform potential participants about the details of the study so they could decide whether they wished to participate. Our stated objective was to examine the utility of exercises reputed to enhance psi scoring, with the goal of improving people's psi scoring. We also pointed out our objectives for the participants: that they would develop an increased awareness of any possible psi abilities and that they would benefit from the mental exercises they would be practicing (e.g., relaxation, focusing of awareness, mental imagery, etc.). Participants were informed of the practical requirements of participation in the study (i.e., weekly lab meetings, plus take-home exercises). Participants detailed description of a typical lab ESP session and of the likely format of their home practice sessions. We described the data that would be collected and the uses to which that data would be put (stressing that participants' identities would never be revealed) and requested that participants' similarly refrain from making any public comments about their participation in the study. We also asked participants to consider whether their participation would help or hinder their participation in the study. For instance, would they be able to find time and a quiet place off to themselves for practice? Did their "significant others" have a positive and supportive attitude towards their participation?

All three experimenters were present for the first part of this meeting so that participants had a chance to get to know them; then each participant was assigned a trainer and the other two experimenters left. Trainers were

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assigned to participants according to our assessment of who would work well with whom, and according to general age (e.g., youngest experiential opportunity to change trainers at any time during the course of the study they wished to do so (no participant chose this option).

The objective of session P2 was to make the final decision about participant's involvement in the study and to administer questionnaires. The session was initially attended by all three experimenters, but we also confirmed whether or not the participant wished to proceed with the study of this decision. The trainer then asked the participant to select one of the remaining two experimenters to act as sender or assistant for the lab exercise. Only three of the participants expressed a preference for an assistant, and for the remaining participants an assistant was allocated to them using the same criteria as had been used to select one of the two experimenters (though none did), or to opt not to have an active assistant (which two participants acted as trainer or assistant for any given participant throughout the study). Participants were then given a description of the procedure for the lab exercise (included in handouts that participants could take home with them; see Appendix B). We also gave them examples of good hits taken from the pilot training study, noting the different forms in which P1 correspondences were found between the mentation and the target. Prior to their first practice ESP trial, and at any later time during the study that it was desired, the participants were taken to view the sending room to help them visualize where the sender and/or the target would be located.

The trainer and assistant then led the participant through a practice lab ESP session, conducted in the same manner as the subsequent lab ESP exercises. Participants then completed the Myers-Briggs Type Indicator and were given materials for the study, consisting of a folder in which to keep the handouts they would receive after each training session detailing the exercises they were to practice. They were also given a diary in which to enter their home ESP impressions and any other observations relevant to their participation in the study. The diary was for their eyes only and was not to be shared with their trainer unless they wished.

Below we outline the general procedure followed for each lab training session, followed by a more detailed description of the exercises given during each of the 12 training sessions.

Training Sessions: General Procedure

These sessions, comprising the main part of the laboratory aspect of the study, varied greatly in length from just over one hour to four hours.

hours, depending on the talkativeness of the participants and trainers and the details that had to be covered in each session. The average session length was just over two hours. These sessions typically had certain common features:

1. The participant arrived for a session and was greeted by both the trainer and assistant. Refreshments were offered and the three chatted for some time. General questions were asked about the participant's experiences with the mental and ESP training exercises he or she had been working with during the previous week and the implications for this week's lab exercise were discussed.
2. The lab ESP exercise occurred as detailed above. After feedback of the target identity was given, the assistant left and the rest of the session was conducted by the trainer. For two participants not using an active assistant, one of the other two experimenters selected the target and prepared it while maintaining the blindness of the trainer.

3. The remote ESP exercise was judged as detailed above.

4. The participant and trainer reviewed in detail the home ESP exercises as described above. There was also further discussion of the mental exercises that the participant had been practicing. The pair discussed means of improving ESP performance, based on the outcome of the various ESP exercises and the participant's impressions of the utility of the mental exercises that had been practiced.

5. (Applicable to training sessions 1-9 only.) The trainer presented the handout for the week and reviewed with the participant the new mental techniques that he or she was to practice during the coming week. The trainer suggested how the participant could incorporate these techniques into home ESP exercises. Apart from practicing new techniques, the participant was encouraged to continue practicing and developing those methods of gaining target-related impressions that had previously been most helpful to him or her.

Training Sessions: The Exercises

Relaxation (1) and free-response ESP. T1 introduced the participant to the benefits of relaxation and to several relaxation techniques to be used prior to a free-response ESP task. First, we described the need to find a suitable context for the relaxation to minimize external interruptions and to minimize internal physical and mental distractions. There were five aspects to the relaxation techniques and practical experience in the use of these techniques was provided by using them at the start of the lab ESP exercise:

1. Participants were encouraged to take a couple of deep breaths to calm themselves and focus on the experience at hand.
2. They were to imagine themselves in a comfortable and relaxing place (a "safe harbor") while they practiced the relaxation exercises.
3. They were taken through a version of the Jacobson Progressive Relaxation exercise. This consists of alternately tensing and relaxing the different muscle groups (starting from the toes and progressing towards the head) so that the participant becomes aware of these muscles and of the difference in feeling between tension and relaxation. The rationale provided for this exercise was that participants were training themselves to notice and send relaxation messages to their muscles. Additionally, tensing muscles would lead to these muscles subsequently becoming more relaxed.

4. Autogenic relaxation.

5. Mental relaxation.

The latter two techniques formed the focus of T2. The task for the first week of home practice, therefore, was for participants to practice progressive relaxation. Once they were accustomed to identifying and relaxing the muscle groups, they might begin to omit the tensing stage and proceed directly to relax their muscles, though continuing to work through the body progressively. Participants were given packs of targets with which to practice ESP exercises at home, following each relaxation exercise. They were also encouraged during their home practice sessions to generate impressions of the remote target that was in their trainer's office throughout the week.

Relaxation (2) and "The Interview Technique." T2 introduced two further relaxation exercises and an interview style for gaining ESP information. The autogenic relaxation exercise is a progressive relaxation that omits the muscular tensing seen in the Jacobson exercise. As one focuses on the relaxation of different body parts, the suggestion is repeatedly made that each part is becoming warm and heavy and that this pleasant sensation is gradually spreading from one area to another. Although it is possible to regard autogenics as a form of self-hypnosis, we did not highlight this aspect to our participants. The final relaxation exercises focused more on mental than on physical relaxation, with the idea that the mental and physical relaxation exercises be combined for optimum relaxation. To illustrate the mind-clearing exercises, we gave participants two scenarios to visualize—either shrinking down any worries until they vanished or became so light they were carried away by a gentle breeze, or imagining a warm fluid flowing down through their body from the head to the toes, with the fluid collecting concerns and worries as it went, carrying them out and

related to practice of the different types of exercises. We describe the procedure with imagery first.

Imagery (1) introduction to mental imagery exercises. T4/T7 provided the participants with an introduction to visual imagery-enhancing techniques. We described the utility of mental imagery, both for everyday activities and as a vehicle for psi impressions. The particular aspects of imagery that we focused on were: vividness, abundance, cohesiveness, sense modality, and controllability. We also noted that imagery could either be directed (when one wished for controlled and cohesive imagery) or undirected (when imagery need not be controlled or cohesive).

Referring back to their Participant Information Form, which contained information on the quality of participants' mental imagery, we suggested various elementary imagery tasks that would increasingly stretch to the participants' natural abilities. For example, the most basic level of task was to hold a simple object (such as a pencil) and look at it, then close the eyes and visualize it, then open the eyes and notice any details that had been missed, and so on, with the goal of achieving an increasingly realistic mental image of the object. This exercise could be made more advanced by rotating the object through three dimensions, eyes open and then eyes closed. To develop the imagery exercises towards the use of imagery in an ESP task, we asked participants to practice with their take-home picture target packs as follows: (a) Remove one picture (already used in an exercise, see below) from its envelope and look at it, (b) put it back into the envelope and try to image the picture on the cover of the envelope, (c) take the picture out again and notice its details, and (d) repeat until a good mental representation of the picture was achieved. Participants were asked to notice what parts of the picture were most readily imaged and remembered; this might suggest what aspects of the ESP target would be most likely to be represented through psi impressions.

Apart from asking the participants to practice the above simple imagery exercises, we asked them to incorporate the use of imagery in their home ESP exercises by holding an unopened target envelope in their hands, closing their eyes, and recording their mental images. Participants were also asked to practice the same task (with a different target) with eyes open, attempting to "project" their mental images onto the unopened envelope. They were encouraged to use similar strategies to gain impressions of their remote target (e.g., imagine they were holding the remote target envelope in their hands, etc.).

Imagery (2) introduction to imagery trips. T5/T8 provided an introduction to imagery trips incorporating several sense modalities. We told participants that imagery trips involved creating a scenario and experiencing its events in one's imagination. All aspects of imagery could be involved in imagery trips and their practice would assist in the further development of these aspects. Also, imagery trips could be used in conjunction with obtaining psi impressions. Participants were given suggestions for a variety of different contexts in which to practice taking such

imagery trips at home. A distinction was drawn between directed and undirected imagery, with response to the target an example of the latter. In a directed imagery trip, one is in control of the imagery and the cohesiveness of the imagined scenario, for instance, imagining walking through the various rooms of one's home. In a semidirected imagery trip, one has some expectations of what to image, but some components of the scenario occur more spontaneously, for instance, imagining walking around a home with the same physical layout as one's own, but decorated differently. In an undirected imagery trip, one has no definite expectations of what will be encountered, for instance, imagining walking through a totally unfamiliar home. While vividness, abundance, and sense modality were equally important factors in each of these kinds of imagery trip, they varied in terms of cohesiveness and controllability, with the undirected trip being the least controlled and cohesive of the three.

Participants were asked to practice the above kinds of imagery trips at home, choosing their own scenarios. They were to incorporate imagery trips in their home ESP practice by placing the target somewhere in their home and using guided imagery to approach it, open the envelope, and visualize the target. Also, they were encouraged to use imagery trips to "visit" their trainer's office to view the remote target that was stored there; for example, they could imagine traveling to the Psychology Department, going into their experimenter's office and removing the picture from its envelopes. When using imagery trips to gain ESP impressions, participants generally began with directed imagery and then shifted to undirected imagery.

Imagery (3) further imagery exercises. T6/T9 was the culmination of the imagery exercises, providing training designed to expand the participants' ability to use their imagery flexibly and creatively. These exercises centered on more creative imagery trips where the end goal was always to retrieve target-related information. These imagery trips allowed for target-related information to emerge more spontaneously than exercises in previous weeks. For example, participants could imagine an adventurous journey to the target—say, climbing a mountain, exploring a cluttered attic, or finding a treasure chest on a desert island. Alternatively, participants could imagine having an adventure within the target, such as imagining falling asleep and waking up in a part of the target picture. Based on their past experience and practice with ESP tasks participants were asked prior to judging their home practice targets, to examine their mentations with a view to identifying any items or characteristics that participants felt most likely to be target-related.

Focusing (1) introduction to passive focusing of awareness. T7/T4 introduced participants to passive focusing of awareness exercises. Passive focusing consisted of accepting and acknowledging that one had been distracted, whereas active focusing consisted of forcibly expelling distracting thoughts to keep the mind completely blank. These exercises were given to help participants focus on their ESP tasks and prepare for using the

Waiting Technique (see below) for gaining ESP impressions. The three main goals of these exercises were (a) to help the participants notice the cause of their distraction from a task, (b) to notice when and how they became distracted; and (c) to learn how to deal with distraction and return their attention back to the initial focus of attention. Causes of distraction could be environmental, physical, and/or internally generated; however, we acknowledged that some distractions were beneficial. If participants discovered they had become distracted during a task, we suggested that they try mentally to back track to discover the source of the distraction. Finally, they should acknowledge the distraction and gently but firmly return their attention to the task at hand.

Participants were given a variety of passive focusing exercises to practice—for instance, with eyes closed, focusing on a thought or a simple internal mental image. They could also focus on a physical process such as breathing, noticing the incoming and outgoing breaths, and counting the breaths for feedback as to how long they focused before being distracted (losing count). In order to introduce participants to focusing of awareness as a means of approaching the ESP target, we encouraged them to practice with their home targets by focusing on a mental image of a blank white card, with the intent of allowing impressions of the hidden target to emerge onto the card.

Focusing (2) active focusing of awareness. T8/T5 extended the exercises of the previous week, stressing a more active approach to the focusing of awareness by striving forcefully to exclude any distractions. While the passive exercises were intended to foster a greater awareness of the process involved in becoming distracted, the active exercises were aimed at helping to reduce the impact of any distractions. Individuals vary greatly in their ability to focus awareness in this way. Participants practiced active focusing, using the same objects of focus as the previous week. This time they were to try to stop themselves from drifting as soon as they noticed they were becoming distracted. They were to shift gradually towards dealing more firmly with distractions, and they were also encouraged to practice keeping their minds as blank as possible. To help with this latter goal, they might try to focus on the image of a blank wall or a white sheet of paper. More challengingly, they could focus on the thought of being in a void of space, where even the sense of self might periodically be lost. When using active focusing in conjunction with their home ESP practice, participants were asked to exercise by keeping extraneous thoughts away, and then to wish mentally that their mind be open to incoming target-related thoughts.

Focusing (3) the "Waiting Technique." T9/T6 represented the culmination of the focusing exercises, where participants were introduced to the Waiting Technique (White, 1964). This technique is based on the assumption that the best way to discover how to achieve success in ESP experiments is to learn what it feels like to obtain accurate ESP impressions. From the descriptions of successful ESP percipients, White derived a four-step model for bringing into consciousness the spontaneous and

normally unconscious ESP impressions. The four stages of the technique described by White were presented to participants. These were:

1. Relaxation is very important as a first step.
2. Engage the conscious mind to prevent it from interfering with the unconscious ESP processes. This engagement can consist of focusing the conscious mind on one mental image (as participants had been practicing over the previous few weeks).
3. Wait and build tension. While focusing on a single image, tension gradually builds because the conscious mind becomes impatient to respond to the target.
4. Following a period of waiting, participants could either make a demand on their unconscious minds to let them "see" the target or wait until an image would spontaneously "burst through," perhaps accompanied by a feeling of conviction that the impression was related to the target.

Once the image has been noted, it is expelled and participants return to step 2. During their home practice with their ESP target packs, participants were encouraged to use the Waiting Technique or their own approximation to it, when trying to obtain impressions of the hidden targets.

The final three training sessions (T10–T12) did not present participants with any new mental or ESP exercises. These sessions were aimed at reviewing participants' performance to date and consolidating and refining the techniques that they had found to be most useful and successful for gaining impressions of an ESP target.

In T10 we reviewed participants' ESP performance and encouraged them to look back over all the exercises they had been practicing, to build some picture of what had worked best for them. Participants were also given a four-page handout detailing a variety of practical uses (i.e. not necessarily psi-related) of the various techniques we had introduced. This handout helped to fulfill our hope that all our volunteers would find their participation in the training study to be beneficial for them, regardless of whether their psi ability was enhanced. The handout suggested how the relaxation, imagery, and focusing skills to which they had been introduced during the study could possibly be used to facilitate decision making, the discovery of hidden attitudes and feelings, enhancement of creative activities, overcoming fears/anxieties of a future event, pain management, memory enhancement by mnemonics, improving awareness of surroundings, improving concentration, finding lost/misplaced items, recovering memories of past events, stress reduction, and so on.

In T11 we further reviewed and revised the utility of the various exercises with regard to participants' ESP performance. T12 was the last session of the main part of the study. The same procedure as in the other

training sessions was followed, and at the end participants were asked a variety of questions about the study, such as their opinions about the mental exercises, the pacing of the study, possible improvements, etc. Participants were offered the opportunity of continuing to practice their ESP work if they wished. They were invited to a party for all the participants, to be held at the conclusion of the study, and they were asked to come in for a final debriefing session three to four months later so we could enquire as to any lasting impressions they had of the study.

HYPOTHESES

Planned Primary ESP Measures

1. Overall significant, positive ESP scoring for the lab ESP exercise data will be found (based on the combined holistic and atomistic judging data). The planned analyses were: (a) a sum of ranks (corrected for continuity), one-tailed; and (b) an effect size (based on z obtained in analysis 1a.).
2. An increase in positive ESP scoring across sessions for the lab data will be found. The planned analysis was a Spearman correlation (with tie correction) between session number (1–12) with the total of target ranks for each session number, one-tailed.

Planned Secondary ESP Measures

Apart from the above two primary analyses of the study, additional data will be presented to give a more complete picture of the participants' performance in the study. Overall lab ESP scores will be broken down to reveal performance for atomistic and holistic judging separately. These will be further broken down to give scores for the first and the second halves of the study (T1–T6, and T7–T12, respectively). Scores for the remote target will also be given (recalling that the remote ESP task was conducted under secure conditions), also broken down for the first and the second half of the study. When planning the analyses to examine improvement across sessions, both the use of Spearman correlations and comparing performance between the first and second half of the study were considered. We decided to use a Spearman correlation for the primary analysis as we thought this would be the more sensitive measure if the various training procedures had a cumulative, positive effect on psi scoring, as was anticipated. However, given the possibility that the various mental training techniques could impact differentially upon psi scoring (e.g., some training procedures could impact positively and some negatively, etc.), we decided to explore other training-impact possibilities via a comparison between psi performance in the first and second half of the study in the secondary analyses using sum

of ranks measures. These analyses were one-tailed as we were interested in the detection of improvement and did not expect any decline.

On the question of individual differences in ESP performance (specifically, the aforementioned four-factor success model), MBTI results will be given, together with a description (from PIF forms) of whether participants had prior psi experience and prior practice with mental disciplines. These were also one-tailed as we were looking for conformity with the four-factor model and did not expect reversals.

Participant Feedback

Finally, and perhaps most importantly from the point of view of the lessons that may be learned from this study, we give detailed information on the feedback from participants obtained three to four months after they had completed the study. What aspects of the study did they find most or least helpful? How did their attitudes to psi change? Was their participation in the study the rewarding experience we had hoped for? What suggestions do they have for improvement for future training studies?

RESULTS

Primary Analyses

The rank data for the overall ESP measure (based on the combined holistic and atomistic data) for this study are presented in Table 1 in Appendix C.

Hypothesis 1. The overall ESP scoring results, based on a sum of ranks (with continuity correction) of the combined holistic and atomistic judging data, was not significant ($n = 168$, obtained sum of ranks = 404, MCE sum of ranks = 420, $z = 1.07$). The effect size (es), based on dividing the z -score by the square root of the n , was .08. Thus, while positive, the obtained level of ESP scoring was not significant, and hypothesis 1 was not supported.

Our overall ESP scoring measure was based on the data from the fourteen participants who finished all twelve sessions of the study. Two participants dropped out of the study, one after completing two sessions and another after completing four sessions. Their combined sum of ranks is exactly at MCE and adding these data to the obtained overall results from those who completed the study does not greatly change the overall results ($n = 174$, obtained sum of ranks = 419, where $MCE = 435$, $z = 1.05$, $es = .08$).

Hypothesis 2. The second hypothesis predicted that there would be a significant improvement in scoring across sessions. A Spearman rank correlation (with correction for ties) between the session number (1–12) and the total ranks assigned to the target for each session number was not

significant ($n = 12$, $r_s = -.152$, $z = -0.505$, $es = .15$). Thus, the second hypothesis was not supported. Indeed there was a slight tendency for psi scoring to decline across sessions. However, this finding was influenced by a (nonsignificant) "first session effect," i.e., the best psi scoring was obtained in the first session (obtained sum of ranks = 29, $MCE = 35$, $z = 1.31$, $es = .35$). The next best psi scoring was obtained in the fifth, eighth, and tenth sessions, where obtained sum of ranks = 31, $z = 0.84$, $es = .22$ for each of them.

Secondary Analyses

See Table 2, Appendix C, for the sum of ranks data for each of the three in-house judging measures (atomistic, holistic, and overall) and the remote trials; these are presented for each participant and totaled for the whole study.

Atomistic Judging. Combining the ranks assigned to the target for all 12 sessions, a sum of ranks with continuity correction performed for the atomistic judging during the laboratory ESP session yielded nonsignificant scoring, slightly in the positive direction ($n = 168$, obtained sum of ranks = 407, $MCE = 420$, $z = 0.86$; effect size (es) = .07). There was a nonsignificant trend towards improved scoring from the first half of the study ($n = 84$, obtained sum of ranks = 209, $MCE = 210$, $z = 0.05$, $es = .005$) to the second half of the study (obtained sum of ranks = 198, $MCE = 210$, $z = 1.12$, $es = .12$). (Note: In this and following analyses, nonsignificant differences between z 's are not reported.)

Holistic Judging. The highest ESP scoring for this study was for the holistic judging for all 12 sessions combined, with this finding approaching significance ($n = 168$, obtained sum of ranks = 398, $MCE = 420$, $z = 1.48$, $p = 0.069$, one-tailed; $es = .11$). Again, scoring appeared to improve from the first to the second half of the study (first half of study: $n = 84$, obtained sum of ranks = 202, $MCE = 210$, $z = 0.73$, $es = .08$; second half of study: obtained sum of ranks = 196, $MCE = 210$, $z = 1.32$, $es = .14$).

The overall judging measure revealed similar first and second half of study trends, although the improvement in the second half was far less marked (essentially chance) than that found in either the atomistic or holistic judging methods (first half sum of ranks = 203, $MCE = 210$, $z = 0.63$, $es = .07$; second half sum of ranks = 201, $MCE = 210$, $z = 0.83$, $es = .09$).

Remote ESP Exercise. Scoring for the remote ESP target was slightly below chance expectations for two of the three planned analyses, with only the analysis on the second half of the study marginally in the psi-hitting direction (all sessions: $n = 147$, overall sum of ranks = 374, $MCE = 367.5$, $z = -0.52$, $es = -.04$; first half: $n = 64$, sum of ranks = 170, $MCE = 160$; $z = -1.17$, $es = .15$; second half: $n = 69$, sum of ranks = 171, $MCE = 172.5$, $z = 0.11$, $es = .01$). Note that seven trials were

uncompleted and are not included in the analysis, hence the different sample sizes for the two halves. Because each participant completed only 11 remote trials, all data from the middle session were excluded from the half analysis, giving data from 5 sessions in each half.

Individual Difference Measures. As was noted earlier, previous studies have reported evidence for particularly high ESP scoring from individuals classified as Feeling/Perceptive types on the MBTI who have had previous psi testing, previous experience of mental discipline, and previous spontaneous psi experiences as indicated by the PIF. Five of our participants fitted this four-factor model. The z -scores for these participants were as follows: For the overall lab ESP measure, $z = 0.44$ (compared to $z = 1.07$ for all 14 participants). For the atomistic judging, $z = 0.36$ (compared to $z = 0.86$ for all participants). For the holistic judging, $z = 0.44$ (compared to $z = 1.48$ for all participants). For the remote target, $z = 0.18$ (compared to $z = -0.52$ for all participants). Therefore, for this small sample, the results do not support the four-factor success model.

Considering the three overall psi measures for the in-house session (overall, atomistic, and holistic), only two participants had independently significant ESP performance. Both were for the holistic judging measure (one-tailed). One fit the four-factor model (holistic sum of ranks = 22, $MCE = 30$, $z = 1.94$) and one did not (no prior spontaneous psi experience, MBTI type INTJ, holistic sum of ranks = 23, $MCE = 30$, $z = 1.68$). Given that the overall number of analyses was 42, these two significant results could easily have occurred by chance.

Recommended Post Hoc Analyses⁷

Simple Versus Medium Complexity Targets. For the in-house sessions, target packs consisted of pictures of either simple or medium complexity. In the three primary analyses (overall, holistic, and atomistic), nonsignificantly better scoring was obtained when using target packs comprised of medium complexity pictures, as opposed to those packs containing pictures judged to have low complexity (i.e., the "simple" target packs). The results were as follows (in all cases, the n for simple target packs = 74, and MCE sum of ranks = 185, and for medium target packs, $n = 94$, $MCE = 235$): overall outcome for simple target packs, obtained sum of ranks = 181, $z = 0.36$, $es = .05$; overall outcome for medium target packs, sum of ranks = 223, $z = 1.06$, $es = .11$; holistic judging for simple target packs, sum of ranks = 177, $z = 0.78$, $es = .11$, and holistic for medium targets, sum of ranks = 221, $z = 1.24$, $es = .13$; atomistic judging for simple target packs, sum of ranks = 184, $z = 0.05$, $es = .008$, and atomistic for medium target packs, sum of ranks = 223, $z = 1.06$, $es = .11$.

⁷The authors thank Jessica Uits for recommending these additional analyses in her referee report.

Imagery Versus Focusing of Awareness Exercises. No formal analyses were planned on these data as we could not ensure that participants were actually using either imagery or focusing methods during the in-house and remote sessions. Although they were encouraged to try these methods during their practice trials at home, they were free to use whatever method they thought most effective during the formal measures (i.e., during the in-house and remote sessions). Informal, planned descriptive analyses to generally assess the possible impact of counterbalancing the order of presentation of the three focusing and three imagery exercises were conducted to provide information to the experimenters. However, following referee recommendations, more detailed, post hoc analyses are reported below.

Examining performance on the imagery and focusing trial, superior psi scoring was associated with the imagery trials in both the in-house overall measure and the remote trials, with significant scoring produced by the in-house imagery trials (in all cases, $n = 42$ and MCE sum of ranks = 105, unless otherwise stated). For the in-house imagery trials: sum of ranks = 85, $z = 2.69$, $p = 0.003$, one-tailed, $es = .42$; remote imagery trials: sum of ranks = 99, $z = 0.76$, $es = .12$; focusing in-house trials: sum of ranks = 105, $z = 0.0$; and focusing remote trials, $n = 40$, sum of ranks = 107, $z = -0.35$, $es = -.06$), with the difference between the imagery and focusing in-house z -scores nearly reaching significance ($z = 1.90$, $p = 0.057$, two-tailed).

The in-house trials associated with the imagery exercises obtained a significant outcome when they followed the focusing exercises ($n = 24$, sum of ranks = 47, $MCE = 60$, $z = 2.28$, $p = 0.02$, two-tailed, $es = .46$). Indeed, positive outcomes were obtained with both the in-house and remote imagery trials, regardless of the ordering of the focusing and imagery exercises (in-house imagery preceding focusing trials: $n = 18$, sum of ranks 38, $MCE = 45$, $z = 1.37$, $es = .32$; on the remote trials: preceding focusing trials, $n = 18$, sum of ranks = 43, $z = 0.32$, $es = .07$; remote imagery trials following focusing, $n = 24$, sum of ranks = 56, $z = 0.64$, $es = .13$). The results associated with the focusing exercises were generally marginal, with a psi-missing tendency being more pronounced when the focusing trials followed the imagery trials (in-house focusing trials preceding imagery: $n = 24$, sum of ranks = 57, $z = 0.46$, $es = .09$; in-house focusing trials following imagery: $n = 18$, sum of ranks = 48, $z = -0.53$, $es = -.12$; remote focusing trials preceding imagery: $n = 22$, sum of ranks = 58, $z = -0.48$, $es = -.10$; remote focusing following imagery: $n = 18$, sum of ranks = 49, $z = -0.74$, $es = -.17$).

Participant Feedback

An important aspect of this training study was that three to four months after session T12, we discussed with participants their reactions to the

study. First, we asked for specific information on their experience of the various mental exercises they were taught during the study.

Mental Exercises. All participants found the relaxation exercises to be very useful and most were still using the techniques they had been taught several months after the conclusion of the study. One had been so impressed that she taught the Jacobson technique to others. Self-esteem and self-confidence had been an issue for ten of the participants. Generally they felt that the self-esteem and stress-reduction exercises had been, and continued to be, a very useful component of the training. These participants had become aware of occasions when they used negative self-talk, and they felt their self-esteem had improved as a result of reducing negative self-talk. They also felt more capable of dealing with stress as a consequence of the study and some had taken actions to reduce specific causes of stress in their daily lives (for example, one had left a stressful job in favor of a less stressful job). Most participants found the focusing exercises to be difficult (in fact, one had found that practicing focusing was itself a source of stress). However, they had found that their ability to concentrate had improved with practice. For instance, one (a mature student) felt that her concentration during lectures had improved. Most participants enjoyed the mental imagery exercises and had found practical uses for them (for example, in decorating a house). They also felt that their mental imagery ability had improved in general; however there were individual differences in which aspects of mental imagery had improved and been most useful. Most participants felt that the relaxation techniques had been most useful for their everyday lives.

General impressions of the study. Opinions varied on the appropriateness of the length of the study. Two participants felt the study was too short, the others were roughly equally divided on whether the study length was appropriate or too long. Most participants felt that there was no need to alter the emphasis of the study on the various techniques, and most had enjoyed working in depth with just one trainer. As to the amount of practice required, opinions varied: A few felt that the amount of practice was tiresome; most were content with the amount; and a few wanted more practice. Most enjoyed the home ESP exercise and found their successes rewarding. There was a mixed reaction to the remote exercise. Some felt it was very difficult, and one found the name *remote* off-putting. Others enjoyed it and particularly appreciated the flexibility and the spontaneity enabled by the remote setup. The majority of participants enjoyed the lab ESP exercise, particularly its emphasis on experimental control and blind judging. They felt this was a useful counterbalance to the less formal at-home practice. One disliked the feeling that she had to be psychic "on command." In terms of the most useful techniques for gaining psi impressions, no general consensus emerged.

Changes in awareness of everyday psi events. Many participants reported a heightened awareness of "vibes," "gut feelings," and "intuitions" as though their participation in the study had increased their awareness of

internal processes. Most reported that these changes were positive and helpful. A few had made practical use of these intuitions (for example, in judging interactions with a client). Interestingly, they also reported greater awareness of how they could fool themselves into thinking something "psychic" had occurred when a normal explanation might be more appropriate.

General comments about the study. A few participants requested more targets with impact, and one said that she had begun to anticipate that there would be one bland picture in each target pack. Most participants reported that the study had more than lived up to their expectations and that it had been a very worthwhile experience.

DISCUSSION

This study produced no significant overall evidence for ESP functioning in the participants, although the results were in the desired (psi-hitting) direction. Also, there was no evidence that performance on the lab ESP targets, our main measure, increased from session to session given our primary correlational analysis. Indeed, while the overall ESP scoring for this study was greater than for our pilot study, both studies found a slight decrease in scoring across sessions, according to the primary Spearman's analyses. However, in the present study this decrease may be due to strong, positive first session psi scoring. The secondary analyses demonstrate that there was nonsignificant improvement in scoring from the first to second half of the session for the atomistic and holistic judging methods and for the overall measure. Thus our general ESP testing procedure appears not to be especially psi-conducive for the kinds of trainees with whom we were working.

It has sometimes been hypothesized that if researchers simply took more time with their participants, helped them feel comfortable in an ESP testing situation, provide them with support and encouragement, and gave them access to some of the procedures (e.g., relaxation, imagery, focusing) traditionally advocated for psychic functioning, then participants would be able to show ESP results. Our data do not lend support to such an hypothesis. Perhaps something more is needed, or some feature that we included is detrimental. Some individuals did rather well and some quite poorly, both overall and in terms of performance change, so there may be individual differences to sort out in later studies.

The negative correlation between ESP scoring and session number reflects in part the fact that the highest scoring overall was for the first training session; the overall scoring was in the psi-hitting direction for sessions T5-10, but the last two sessions both obtained sums of ranks greater than *MCE* and thus in the psi-missing direction. Therefore, there were signs of first- and last-session effects in this study. It is of interest to note that Morris and Morrell (1985) found positive scoring in the pretest

and negative scoring for the posttest in their training study, with a significant decline between the two. A future study might benefit from omitting first and last sessions from any change-across-session analysis.

Our individual differences measures did not support the "four-factor" success model that has been previously reported to be associated with enhanced ESP performance (Honorton & Schechter, 1987; Broughton et al., 1990). Since the completion of our study, Milton and Wiseman (1999) have questioned the strength of the evidence for the importance of the four variables. The model is based on relatively few studies from a small number of labs, and many of the more recent Ganzfeld studies have reported inadequate detail to allow the model to be properly tested. Clearly, there is need for further investigation here.

Although we did not find evidence of an improvement in ESP scoring, several pointers for future training studies did emerge. We found that many participants scored very well on their informal home practice (overall scoring rate was over 64.6% where 50% was expected, with 594 hits in 920 trials, $z = 8.84$). These trials were unsupervised and thus they are not part of the formal procedure. Also, our participants showed evidence of improvement on remote targets. This suggests that some features of our lab procedure may have been negative or in some way constraining to our participants. We have since conducted a successful follow-up study enabling participants to generate impressions of an ESP target in their own homes, using a secure methodology that permits formal evaluation of the results (Delaney, Watt, Morris, & Wiseman, 1998). Such a methodology can combine the positive aspects of the remote and the lab ESP exercises, as suggested by the feedback from the participants of the present study. It allows individuals some spontaneity in their choice of how, when, and where to generate impressions of a remote ESP target. We feel that such spontaneity, within a familiar and comfortable environment where there is no implicit pressure to "perform," might for many participants be more psi conducive than the traditional laboratory ESP session.

With regard to the different judging measures, although the atomistic judging did not produce scores as high as the holistic judging, our impression was that the atomistic judging was extremely valuable in the ESP-training context. Despite having received instructions to the contrary, in the early sessions of the study most participants tended to make a relatively quick decision regarding the target identity early in the holistic judging procedure (which always preceded the atomistic procedure). After having made this decision, they tended to overlook correspondences to other pictures in the target pack. As the sessions progressed and the participants became more familiar with the atomistic procedure, they tended to avoid quick decisions and thus judge all the pictures in a more equal and careful manner. Thus, in a future study we might continue to use the atomistic judging as a valuable tool for training participants in judging at the start of the study, but not use the atomistic target rankings as an ESP measure.

The post hoc analysis of target complexity found that targets of medium

complexity were associated with nonsignificantly higher scoring than were the simple targets, for all three in-house judging measures. This suggests that it may be preferable to avoid targets having very simple content in free-response studies. The remote trials used targets judged by the experimenters to have a relatively high degree of complexity. While performance on the remote trials was generally poor, it is not possible to separate the influence of the task from that of the target type. Thus, no tentative suggestions regarding the utility of complex targets are provided by this study.

The post hoc analysis examining performance on trials associated with the imagery exercises and those associated with the focusing exercises revealed that the imagery sessions produced better scoring, with the in-house overall measure from the imagery trials reaching significance ($p = 0.003$, one-tailed). Furthermore, the difference between the z -scores produced by the imagery and focusing trials approached significance ($p = 0.057$, two-tailed). These results lend support to earlier findings of Morris and Bailey (1979) who, using pretraining and posttraining ESP measurements, found participants who were given imagery exercises maintained or improved their psi scoring while those given concentration exercises all showed a decrease in scoring from pretraining to posttraining, with this difference being significant ($U = 0$, $p < 0.005$, two-tailed). Although we can not be sure that participants were in fact using imagery or focusing methods during these trials, they were, at the least, practicing these methods during the week preceding the in-house sessions and during the same general period when generating imagery to their remote target. Acknowledging the post hoc nature of these analyses, the consistently superior performance on imagery trials found in this study and in the previous findings of Morris and Bailey suggest that the concentration and focusing methods applied in these two studies may have a detrimental impact on psi scoring.

This study succeeded in furthering our goal of identifying for further research individuals who tend to score consistently above chance. Five participants met this criterion, and they were all enthusiastic to participate in further studies (Delaney et al., 1998). In addition, the study was instructive in suggesting characteristics that are desirable in participants in long-term studies: We feel it is best to work with individuals who are mature and relatively settled in their lifestyle, and who have adequate time to devote to exploring the techniques thoroughly.

It should also be noted that all of these participants took part in a forced-choice ESP study conducted by Caroline Watt (Watt, 1996). They did one ESP session prior to taking part in the present study, and they did a second ESP session after the present study's conclusion. It is encouraging to note that performance tended to improve after training. The hit rate was 52% before training ($MCE = 50\%$, $z = 0.55$, $p = .29$, one-tailed). Participants scored significantly greater than chance after training (55% hit

rate, $z = 1.69$, $p = .04$, one-tailed), though the trend for improved scoring after training is not statistically significant.

Despite the fact that this study was longer than our pilot training study and introduced participants to fewer exercises, many individuals remarked that they felt too many exercises had been introduced in too short a time. A future study might introduce participants to a variety of mental techniques and then allow them more time to explore each one thoroughly. However, they all stated that the considerable time and effort they had expended had been worthwhile. Even those participants with considerable prior experience of mental techniques such as visualization, relaxation, and focusing found the exercises of value. For the ESP aspect of the study, regardless of their prior opinions about ESP, most participants reported having a greater understanding of their own mental processes and thought they were capable, at least on occasions, of obtaining ESP impressions.

In conclusion, while the primary findings from this study showed no indication of ESP overall, or of an improvement in ESP scoring indicative of training, we have been able to take some suggestions from the trends seen in the exploratory analyses. Some of our limited goals have been achieved, and we have furthered our understanding of others. We have already developed and tested new methodologies based on the pointers derived from the present study, and we hope to continue this line of research in the future.

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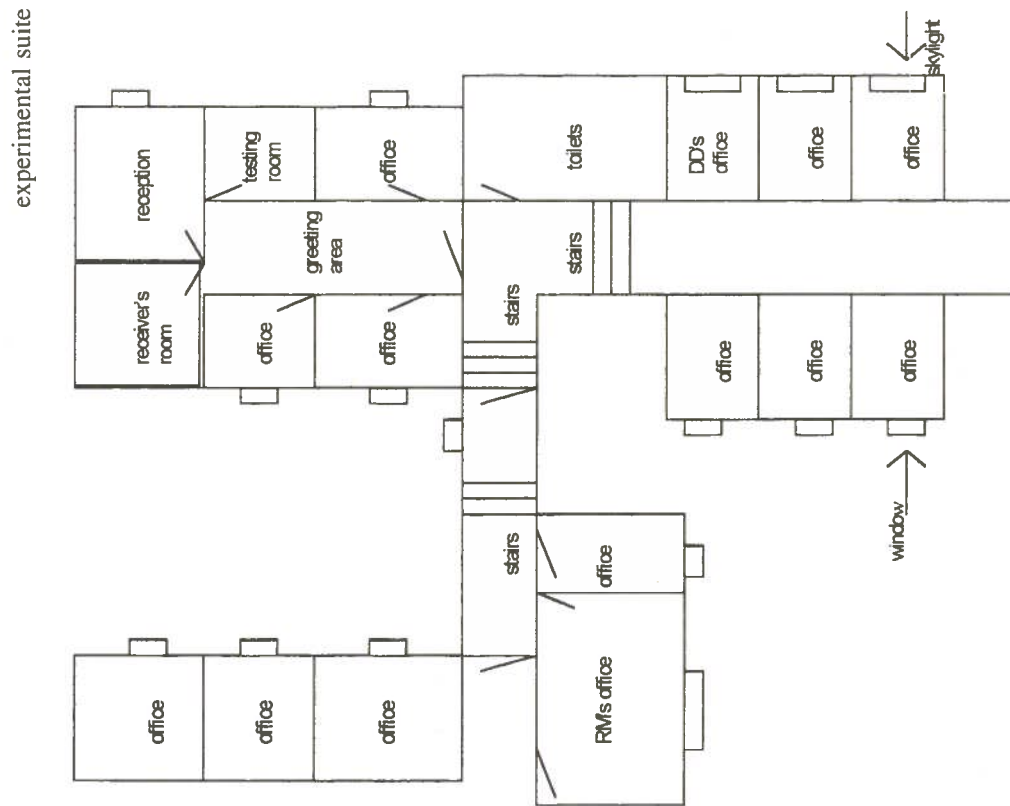
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APPENDIX A

Layout of Experimental Suite and Sending Rooms (RM's & DD's offices)

Note: not to scale



APPENDIX B

Handout given to participants on making mentations and judging.

Instructions for Making Mentations and for the Judging Procedure.

Things to remember when making your mentations:

1. Try not to worry about the experiment or the agent while actually making your mentations. Before the start of the mentation period, your trainer will remind you that your sender is looking at a picture and that you should make a gentle wish to receive impressions which relate to this picture (the target).

2. Say out loud everything which you experience during the sending period; all sensations, mental imagery, auditory impressions, colors, etc. These experiences are referred to as your 'mentations'.

3. During your earlier psi sessions, say out loud anything and everything that comes into your head (do not screen anything, say it all, regardless of how trivial, everyday or mundane it may seem to you). In your later psi sessions you may find that you have gained a better understanding of what impressions may be target-related; only if this happens should you not say out loud everything that you experience during the mentation period.

4. If you have an impression which you would rather not share with others, just state it generally without mentioning any specifics which you would rather not disclose.

5. Do not worry if an impression is vague, indistinct, or nonsensical. Simply describe it as best you can (in terms of its shape, form, color, or whatever). DO NOT wait for the image to develop into a recognizable image; simply describe the initial image as best as you are able. If an originally indistinct or unrecognizable image does develop into a recognizable image, then also mention the later image.

6. Try not to get caught-up into following normal chains of association.

7. After having stated any impression, let it 'go' and wait for another 'new' impression to occur. However, if a particular image occurs again or is very persistent (i.e., will not go away), simply acknowledge that this is happening, and then move on to the next impression when appropriate.

Things to remember during the judging procedure:

1. Take your time during the judging procedure; do not be in a rush to finish.

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2. Study each of the possible target pictures very carefully, noting everything that is contained in it, down to the smallest detail. Get a 'sense' of the content of each of the pictures, in terms of its actual content and its overall theme, its overall mood, any dominant shapes (in considerable detail), and any personal and/or consensual associations (in considerable detail). Turn the picture upside down, and any personal and/or consensual associations that the picture may have for you.

3. Exact matches between target and mentations are VERY rare.

4. Expect distortions of varying degrees to occur between the target and your mentations (e.g., the building in your image is different from the building in the picture).

5. Correspondences which may arise between your mentations and target can take a variety of forms. The various types of correspondences which may arise are:

a) literal correspondences (e.g., you say 'dog' and there is a dog in the picture; remember it may be a major part of the picture or only a minor detail, and that it may not be an exact match, e.g., you saw a large dog and in the picture there is a small Pekinese);

b) associative correspondences, either personal or consensual (e.g., your personal association may be where you think of a pipe, and while there is not a 'pipe' per se in the picture, there is a father-figure in the picture, and your father smokes a pipe; or, a consensual association may be where you think of a pipe and there is a picture of a tobacconist shop in the picture);

c) similarities of shape and/or form (e.g., you think of a segmented hat, and the picture contains an open umbrella);

d) similarities of meaning, function, purpose, and/or language (e.g., you think of a cricket bat and there is a flying bat in the picture; or you think of a train and there is a car or some other form of transportation in the picture);

e) mood correspondences (e.g., you feel happy, or your image has to do with something that makes you feel happy, and there is a picture of a merry-go-round with a lot of happy children riding on it);

f) color correspondences (e.g., you think of the color purple, and there is a purple object in the picture; again, remember that it may be a major part or a minor detail);

g) a sensual correspondence (e.g., you feel hungry and there is food in the

picture; you think you smell flowers and there is a rose in the picture; you think you hear a child crying and there is a baby crying in the picture; etc.).

6. Do not be swayed by your personal preference (i.e., liking or disliking) for any of the possible target pictures. Similarly, consider all pictures equally, regardless of how familiar you are with one or another of them.

7. In the item-by-item judging task, do not let your overall judgment be swayed by one especially good or meaningful correspondence. Rank your pictures according to the number of rating points the pictures have received, even if one picture had an especially excellent correspondence but at the end of the judging ended up with fewer rating points than another picture which had a lot more correspondences to it, but of lesser impact or strength. If two pictures should receive an equal number of judging points, rank/rate the picture which had the higher quality of correspondence above the other.

8. As a general rule, let logic, not intuition, be your guide; try to be an OBJECTIVE judge.

Lastly, with regard to all of the above suggestions, these are general guidelines intended to be initially helpful to you. With experience you may find that some of these suggestions are more helpful than others. Thus, as the study progresses, you may wish to modify your use of them as seems appropriate.

APPENDIX C

Tables of Results

Table 1
THE NUMBER OF TIMES EACH RANK WAS ALLOTTED TO THE TARGET PER SESSION (BASED ON THE OVERALL PSI MEASURE, OBTAINED BY COMBINING HOLISTIC AND ATOMISTIC DATA)

Session	Target Rank			
	1	2	3	4
T1	6	3	3	2
T2	4	3	5	2
T3	1	5	5	3
T4	0	5	6	3
T5	5	2	6	1
T6	4	5	2	3
T7	5	3	3	3
T8	5	4	2	3
T9	4	4	3	3
T10	5	4	2	3
T11	2	5	4	3
T12	3	2	5	4
Total	44	45	46	33

Table 2

TOTAL SUM OF RANKS OVERALL AND FOR EACH PARTICIPANT FOR THE THREE IN-HOUSE MEASURES (I.E., ATOMISTIC, HOLISTIC, AND OVERALL) AND THE REMOTE TRIAL

Participant	PSI Measure			
	Atomistic (MCE = 30)	Holistic (MCE = 30)	Overall (MCE = 30)	Remote (MCE = 27.5)
1	26	28	27	26++
2	28	22*	25	28
3	24	25	24	21++
4	34	34	35	29
5	30	31	32	28
6	30	30	28	30
7	36	32	34	25
8	30	23*	25	30
9	32	35	33	23
10	30	26	29	21+
11	27	29	28	27
12	27	29	29	28
13	25	26	28	31
14	28	28	27	27++
Overall	407	398	404	374

Notes. For each participant: $n = 12$ for all in-house measures and MCE sum of ranks = 30; for all remote trials, $n = 11$, MCE sum of ranks = 27.5 (unless otherwise noted). For the overall totals, $n = 168$ for all in-house measures and MCE sum of ranks = 420; and for the overall remote trial, $n = 147$ and MCE sum of ranks = 367.5.

* $p < .05$, one-tailed.

++ $n = 9$, MCE = 22.5.

+++ $n = 10$, MCE = 25.