A Dream GESP Experiment Using Dynamic Targets and Consensus Vote

KATHY DALTON, FIONA STEINKAMP, AND SIMON J. SHERWOOD

ABSTRACT: This report presents a dream GESP experiment involving consensus voting within a group setting and dynamic video clips as target material. Three participants took part in a 32-trial dream-psi study using the automated free-response testing system at the University of Edinburgh. Target stimuli were randomly selected in groups of 8 from a pool of 160 video clips and the designated target for each trial shown at approximately 3 a.m. at the Koerner Chair Parapsychology Laboratory on trial nights. Each participant dreamed remotely at home and came to the laboratory the following morning for the judging sequence. A rank of 1 to the actual target was considered a "direct hit"; all other ranks were considered "miss." Study hypotheses were (a) the direct hit rate for the group would significantly exceed MCE (25); (b) the direct hit rate for individuals would significantly exceed MCE; (c) there would be a better overall direct hit rate for the group than for individuals; and (d) there would be a positive correlation between low geomagnetic activity and ranking of the target for the group (i.e., as GMF increases, psi performance decreases). Overall group hitting was significant with 15 direct hits for 32 trials (p = .006; ES(A) = .46; Cohen, 1977). Two of the 3 participants also obtained independent significant scoring, both achieving 13 direct hits in 32 trials, which is significant for each at p = .038, ES(A) = .33. The 3rd participant obtained 9 hits out of 32 trials, putting those results at close to chance, p = .41, ES(h) = .17. An analysis of the relationship (i.e., psi success and low geomagnetic activity) between the group's psi-dream target rankings and the global an index was in the predicted direction but not significant at rho = .224.

- Research into altered states has indicated that they may be conducive to psi (e.g., Braud, 1977; Honorton, 1977; Tart, 1969). There is extensive literature on two such altered states—the Ganfzfeld and the dream state—and their inherent conduciveness for the reception and recognition of psi information (e.g., Honorton, 1992; Kanthamani & Khilji, 1996; Kanthamani, Khilji, & Rustomji-Kurns, 1989; Morris, Cunningham, McAlpine, & Taylor, 1993; Morris, Dulaney, & Watt, 1995; Schiltz & Honorton, 1992; Strauch, 1970). The Ganfzfeld procedure is a form of sensory deprivation involving deep relaxation techniques, and it is a direct offshoring of the dream research conducted at Maimonides Dream Laboratory. Within parapsychology, the Ganfzfeld technique is typically used to facilitate an inwardly directed altered state similar to the dream state, and it is currently used to facilitate the elicitation of psi in the laboratory. The dream state is typically associated with the activation of a built-in, biologically regulated mechanism that periodically, throughout the night, initiates a state of high cortical activation inducing the altered state experienced subjectively as
dream consciousness. This state is accompanied by bursts of rapid conjugate eye movements (REM) and is believed to be the deepest state of sleep.

Anecdotal and clinical reports concerning psi in the dream state are numerous and have been reported throughout written history (e.g., Freud, 1953; L. E. Rhine, 1961). Of research conducted to test the occurrence of psi in dreams, the series of experimentally based research studies conducted at the Maimonides Dream Laboratory stands out as some of the most successful and well known in parapsychology (Ullman & Krippner, with Vaughan, 1973, 1989). This research attempted to elicit the acquisition of information by psi in dreams under carefully controlled laboratory conditions. An independent evaluation by Child (1985) of the Maimonides research yielded very high statistically significant results: The combined outcome of all series for both blind judges’ and participants’ ratings was significant at $p = .001$ (one-tailed).

The basic design of the Maimonides dream studies was to place an agent or sender in an acoustically isolated room. The sender would then attempt to transmit telepathically a randomly selected target picture (generally from a pool of eight or 12 art prints) to a sleeping participant in another room. The participants’ sleep was monitored by electroencephalograph (EEG) in order to gauge the best time to awaken him or her for dream reports. Participants would typically be awakened by the experimenter toward the end of a REM cycle and asked to report their dreams, which the experimenter recorded. These dreams were later transcribed for blind judging, with judges asked to review a range of targets and then assign ranks (with a “one” usually designating a first place choice, etc.) according to how well the transcribed dreams matched each possible target material. 

Although the studies at Maimonides were mainly designated as experiments in telepathy, it is possible that the percipient may have been picking up on the target clairvoyantly, without the mediation of the agent’s thoughts or efforts. Thus, these studies might more appropriately be considered experiments in general extrasensory perception (GESP). Because we are unable to rule out the possibility of either clairvoyance or precognition operating in the present study, we use the term GESP.

Exact replications of the Maimonides dream-psi experiments were attempted at only two other dream laboratories—the University of Wyoming and the Boston School of Medicine. The two Wyoming experiments yielded results approximately at chance level—slightly below in one study (Belvedere & Foulkes, 1971) and slightly above in the other (Foulkes et al., 1972). The Boston School of Medicine’s attempt at replication produced results that, although not significantly positive, moved the researchers to state that “further conservatively designed research does seem indicated because of these findings” (Globus, Knapp, Skinner, & Healy, 1968, p. 365).

Other replication attempts, conducted without the benefit of the facilities of a sleep laboratory, have reported results that encourage further exploration of the dream state as one conducive to the reception of psi infor-

A Dream GESP Experiment

mation. Three studies conducted by Braud (1976) used slides developed at Maimonides as targets in their dream research. Although Braud’s first study—in which he himself acted as agent for 50 participants—yielded suggestive but not significant results for the majority vote scores ($p < .06$, two-tailed). The majority of his participants were people he did not know well. He then decided to limit the participant pool to people with whom he felt some connection. In the subsequent two studies, 10 close friends took part with Braud again acting as agent. The combined results for the majority vote scores for these studies were highly significant at $p < .001$ (two-tailed).

A study by Van de Castle (1971) involved the morning recall of dreams. Seventy members of a youth camp were percipients for a 4-night series, in which a member of staff acted as agent and the target material consisted of pools of five different colored magazine pictures. A different set of pictures was involved each night, and the campers individually viewed and ranked them the following morning. This study was quite successful, with overall significant results, $p < .002$ (one-tailed).

In a comparison of the Ganzfeld and the dream state using static targets, Kanthamani and Broughton (1995) reported above chance results for both states, but at a significant level for the dream state ($p < .005$, one-tailed). As altered states, the Ganzfeld and the dream state are similar in that they both make use of physical and mental relaxation, sensory isolation, and inwardly directed attention. In addition, they are both concerned with “free-response” subject material. It is possible that the use of dynamic targets in dream-psi research, such as video clips that more closely mimic real life material, rather than the use of static targets, such as art prints, may add to the ability of the participant to retrieve the target material.

These studies, and several others, offer encouraging evidence that incorporation of distant stimuli into dreams can be demonstrated under good experimental conditions. The possibility of dreams being used as a psi acquisition mechanism clearly merits careful attention from experimentalists who wish to explore this area but who are without recourse to the facilities of a formal dream laboratory. It was with these considerations in mind that the current study was devised.

Variables Used in this Experiment

Dynamic Targets

The majority of dream research in the past has made use of either art prints, (e.g., Child, Kanthamani, & Sweeney, 1976; Foulkes et al., 1972) or of projector slides, often with accompanying sound (e.g., Braud, 1976; Krippner, Honorton, Ullman, Masters, & Houston, 1971). One study by Hall (1967), cited by Van de Castle (1971), employed miming by the sender. A study by Honorton, Ullman, & Krippner (1975) involved a
comparison of extrasensory and presleep influences on dreams. Target stimuli were four brief films, two designated as emotional and two as neutral. Forty sender/receiver pairs, generally friends, were involved. In extrasensory nights, the sender would watch a film while the receiver was asleep and the receiver attempted to dream about the film. On the presleep nights, the receivers themselves watched a film before falling asleep. Significant incorporation occurred on presleep nights but not on the ESP nights. However, field independent participants, as measured by the Frame and Rod Test and the Embedded Figures Test, obtained a significantly higher correspondence score in the ESP condition for the emotional films than for the neutral films (p = .006), but a similar difference was not found for these same participants in the presleep condition. Additionally, research in the Ganzfeld technique has indicated that dynamic targets, or video clips, may be the best type of target material for research into altered states and psi (Dalton & Uts, 1995; Honorton et al., 1990). This may be because video clips simulate real life more closely. They involve color, sound, emotion, and motion and are typically thematically based, with this theme being reinforced throughout the duration of the video clip. Van de Castle (1977), himself a participant in several dream studies, strongly recommended that the target stimuli used in dream research be emotionally compelling and diversified. Based on the significant findings of current Ganzfeld work using dynamic targets (Bierman, 1995; Broughton & Alexander, 1995; Morris et al., 1995), this study also made use of video clips as targets.

Consensus Vote

The majority vote technique used by Braud (1976) in his dream research, as well as the typical blind judging procedure employed by most dream studies, led us to speculate on the outcome of a consensus vote on any one night’s dream material for the group. If psi acquisition did occur in the dream state for all 3 participants, then a common theme, item, or pattern might emerge throughout the nights’ dreams for all participants combined. A common theme that might otherwise be missed by the individual while ranking how well the targets corresponded with that person’s dreams might be picked by the group as a whole. The judging procedure used by Carpenter (1987) for reaching a consensus vote in a group setting was adapted as the basis of the judging procedure for this study.

Geomagnetic Influences

There has been increasing evidence over the last decade to suggest that there may be a relationship between fluctuations in the earth’s geomagnetic field (GMF) and ESP. This relationship associates periods of relative quiescence in the GMF with enhanced psi perception (e.g., Arango & Persinger, 1988; Berger & Persinger, 1991; Dalton & Stevens, 1996; Persinger, 1985, 1987). As Persinger (1989) provides a sizable review of this evidence, it will not be covered in depth here. For further discussion and debate on the same topic, see Hubbard and May (1986) and Wilkinson and Gauld (1993).

Persinger and Krippner (1989) reported that higher scoring for dream ESP in the Maimonides experiments tended to occur on days of low GMF activity relative to the surrounding days, as did Tart (1988) in his study of geomagnetic effects on GESP. Persinger and Krippner (1989) also found that when geomagnetic activity around the time of the strongest experimental telepathic dreams was compared to the geomagnetic activity around the time of the spontaneous telepathic dreams from the Gurney, Myers and Podmore (1886) collection, very similar (statistically indistinguishable) temporal patterns were observed. For the purposes of this study, it was decided to examine the state of the GMF during the 24-hour period in which the dream trial occurred. The daily average antipodal (aa) index was chosen as the GMF measure. The aa index provides a daily measure of the mean change in the global GMF and is one of the most frequently used to assess the ESP-GMF relationship. Geomagnetic indexes were retrieved for each day on which a dream-psi session was conducted, from January 11 to March 16, 1996, after all sessions had been completed. The geomagnetic analysis was conducted specifically after all data were collected to avoid the possibility that knowledge of geomagnetic parameters during the experiment might bias experimenters’ expectations of individual sessions.

Hypotheses

Based on our understanding of the results of previous dream-psi experiments, we predicted that (a) the direct hit rate for the group would significantly exceed mean chance expectation (MCE = .25), (b) the direct hit rate for the individuals in the study would significantly exceed MCE, (c) the overall direct hit rate would be better for the group than for the individuals involved (although given the small number of trials this effect would have to be very large to detect statistically), and (d) there would be a positive correlation between low GMF activity and psi hitting for the group. A rank of 1 assigned to the actual target would be considered a direct hit; all other ranks (2, 3, or 4) were considered misses. Study length was prespecified at 32 trials, and all p values are one-tailed unless otherwise specified.

Method

The dream-psi study was conducted from January 11 to March 16, 1996. The three authors who served as the participants for this study were members of the Koestler Chair laboratory. Each reported having good
dream recall and imagery and a positive attitude toward GESP in the dream state. Strauch (1977) indicates that openness and willingness to share personal dream material in a safe environment is necessary to the success of dream-psi experimentation, and Van de Castle (1977) states that successful dream-psi perceivers have generally been described as being “open” or “frank.” All 3 participants strove to maintain an open, yet confidential atmosphere among themselves throughout the dream study.

Participants dreamed remotely at home, writing down their dreams as they awoke spontaneously throughout the night or in the morning. The following morning they brought their hand-written dream records into the laboratory for comparison with the 4 target possibilities. Participants who did not consciously recall their dreams of the previous night were still asked to view and judge the target material on the premise that, as everyone dreams several times a night whether they remember it or not, they may still react subconsciously to the correct target material, even if that reaction was only a “feeling” that one of the four possibilities was the correct target.

Each participant chose one of three methods of obtaining the target material during their dream cycles: (a) Experimenter A chose “Lucidity,” in which the dreamer becomes aware that he or she is dreaming at some point during the dream. The participant would first attempt to become lucid and then during this lucid period would request, in the dream state, that he or she be shown the target information. (b) Experimenter B chose “Conscious Volition,” in which the participant, before falling asleep on even-numbered trials, would consciously “will” that night’s trial to be a success for the group or, before falling asleep on odd-numbered nights, would consciously “will” that night’s trial to be a success especially for that participant. (c) Experimenter C chose “Waking After ‘Target’ Dream,” in which the participant attempts to awaken during the night only after having the dream that contains the target material for that night’s clip. Although the amount of recalled dream imagery varied from trial to trial and between individuals as well, participants overall averaged 3.4 dreams a night. Hereafter, participants will be referred to as Experimenter A (Lucidity), Experimenter B (Volition), or Experimenter C (Waking).

**Equipment**

The free-response testing system at the University of Edinburgh is designed to be used under a variety of experimental designs. It is a computer-based system that provides automatic data recording, highly effective shielding against sensory cues, and resistance to both participant and intentional experimenter biases. This automated free-response testing system can easily be tailored to produce a variety of different experimental conditions to explore those that work best in general or best for specific participant populations. It can also vary conditions in accordance with the design of process-oriented studies and recently was used in a series of automated Ganzfeld research (Dalton, 1997; Morris et al., 1995). The program is run on a 33 MHz 80386DX computer equipped with a 210 MB fixed disk, 8 MB DRAM, four RS 232 serial ports, an 80387 numeric coprocessor, a super VGA monitor, and a printer. The target presentation system involves two PCVCs; both frame-accurate NTSC videocassette recorders were equipped with an RS 232 serial interface. The target pool consists of 100 different video clips, all exactly a minute long within a fraction of a second, and divided into 25 groups of 4. For each trial in this study, one group of 4 clips was randomly chosen by the computer as the target pool for that trial; then 1 of the 4 clips was randomly chosen as the actual target for that trial, and each target selection took place with replacement. As this target pool is also currently being used in automated Ganzfeld research at the University of Edinburgh, the videotapes are never rewound to the beginning of the tape but start up where the tape stopped at the end of the last session. In addition, an opaque cover, completely covered with black electrical tape, has been inserted inside the metal cover of the VCR itself to obscure all digital information regarding tape characteristics. The target and judging videotapes are locked into the two separate VCRs via a specially designed metal housing unit with a uniquely numbered brittle plastic security tab. This also renders the front control panels inaccessible, as these are completely enclosed by the metal housing unit for the VCRs. All VCR functions are controlled by computer software, and video, audio, and computer graphics are routed to the appropriate rooms (experimenter, sender, or receiver) through computer control. The VCRs have been placed in a separate nonadjacent, sound-attenuated room in the experimental suite. This room is accessed only through two back-to-back doors, and videotape movement sounds cannot be heard outside of this room. Other equipment includes a NTSC video monitor and a stereo audio amplifier in the Target and Judging rooms. A layout of the rooms involved in this study is shown in Figure 1.

The free-response program itself runs under a combination of Microsoft Quick Basic 4.5 and Windows 3.1/DOS 5 and is password protected. Unless the experimenter has knowledge of the correct password he or she cannot run the program, and this password was known only to the three experimenters. The program produces a datafile during each session that is stored to both the hard drive and a floppy disk and is sent for immediate printout to the printer at session conclusion. All target presentations, VCR video and audio signals, as well as computer graphics, are computer controlled. For additional information on the security measures involved and laboratory layout, see Dalton et al. (1994).

**Procedure**

A simplified GESP design was used for this experiment in contrast to the telepathy design of the Maimonides research. As each experimenter also
acted as participant in this study, it was decided to alternate who set up the computer program for each night’s trial. Experimenters A and B set up the program 11 times each and Experimenter C set up the program 10 times. The following is an outline of the steps involved in setting up the computer program for each night’s trial.

The experimenter for the trial activated the dream study computer program to randomly select a 1-minute video clip to be played that night. The experimenter did not know which clip the computer had selected. The experimenter then set the appropriate time for the 1-minute clip to be shown. This was predetermined to be for approximately 3 a.m. each trial. The experimenter then entered the appropriate password and session number. At this point, the computer initiated a countdown for the session. The experimenter was prompted by the computer to enter his or her initials and the trial number. The experimenter then also set the number of times the clip would be shown, prespecified at 20, and how long to wait between showings of the clip, prespecified for 2 minutes. In this way, the clip would be shown 20 times between the hours of 3 a.m. and 4 a.m.

Next, the experimenter verified that all appropriate levels and controls were in their default settings in case any trials from other studies that day had disrupted those settings. She or he then entered the target room and turned on the TV monitor and stereo audio amplifier. The lights in the room were turned off, the door closed and locked for the duration of the trial, and the key returned to its secured location. Upon leaving for the night, the experimenter also locked the door to the experimental suite.

The following morning, the three experimenters with their hand-written dream records met in the experimental suite to proceed with the session judging. The judging procedure used by Carpenter (1987) for reaching a consensus vote in a group setting was used. The basis for the judging procedure was as follows: The experimenter for that trial made sure that the monitor and sound was on in the judging room for the judging session. The other 2 participants entered and sat down, then the experimenter signaled the computer to begin the review of the four possible target choices. The four possible target clips were viewed by the participants, and then the participants were given the opportunity to view any of the four again. Participants then individually judged each clip by assigning it a rank of 1–4 (1 representing the greatest degree of correspondence with dream imagery), and gave each possible clip a rating of 1–99 (first choice getting the highest rating). Ratings and ranks were hand noted by each participant on their dream report sheets and were considered final for the individuals and not subject to change after sharing aloud the dream material.

After each participant had written down his or her final ratings and ranks, each shared his or her night’s dreams and reported the rating and rank she or he had assigned to each clip, which the experimenter for that trial wrote on the session record sheet. The ranks for each clip were then added, and the clip with the lowest score was given first place, the next lowest given second place, and so on. In the eventuality of ties, the ratings were added,
and the clip with the highest rating was given the rank in question, with the lower rating taking the next rank. In the eventuality of a tie between ratings, the variance in ratings was taken into account. It was reasoned that a tighter variance would indicate a greater consensus on that target, and thus the clip with the lower variance received the lower of the remaining ranks. Group ranks and ratings were double-checked by 1 of the other participants and then the experimenter for that trial entered the group data into the computer. As soon as this judging sequence was completed, the computer stored the group’s experimental data both to disk and to hard drive and then revealed the target. Session data were then sent to the printer for multiple printouts, and the experimenter was prompted to close out the session. It should be noted that no feedback regarding the target was given until the computer stored the judging data to disk. This disk was stored with the study file and produced before each trial.

The automated free-response program records session data not only to the hard drive at the end of the session but also to diskette throughout the session. Immediately after each session, as soon as the computer has recorded the session as completed, multiple copies of the session datafile were printed out for distribution to the appropriate parties. One session record went to a staff member of the Koestler Chair who was not involved with the study, one went to Experimenter C for independent storage and safe keeping, and one was included in the session file and placed in a filing cabinet in Experimenter A’s office. The session records on computer disk were compared to printouts in the experimenters’ possession and those of the Koestler Chair staff member for discrepancies before any data were analyzed. All three experimenters were required to sign the hand-written session record of target ratings and ranks for both the group and the individuals at the end of each session. This was then attached to the session printout along with the hand-written dream records and included in the study file with the computer printout.

Results

The first hypothesis for this study—that the direct hit rate for the group would exceed MCE—was confirmed. There were 15 direct hits for the group in 32 trials, which is significant at $p = .006$, $ES(h) = .46$ (Cohen, 1977). (All $p$ values are one-tailed unless otherwise specified.) For completeness, the distribution of ranks for the group is shown in Table 1.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Distribution of Ranks for Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Obtained</td>
<td>15</td>
</tr>
<tr>
<td>Expected</td>
<td>8</td>
</tr>
</tbody>
</table>

The second hypothesis—that the direct hit rate for the individuals in the study would exceed MCE—was partially confirmed. Two of the 3 participants achieved hit rates that exceeded chance, both with 13 hits in 32 trials, which is significant at $p = .038$ for each, $ES(h) = .33$. One experimenter achieved 9 hits in 32 trials, which is close to chance, $p = .41$, $ES(h) = .07$. For completeness, the distribution of ranks by participant is shown in Table 2. It must be noted that due to the possibility of a stacking effect, these results cannot be considered to be independent of each other or of the result in Hypothesis 1.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Distribution of Ranks by Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Experimenter A</td>
<td>13</td>
</tr>
<tr>
<td>Experimenter B</td>
<td>9</td>
</tr>
<tr>
<td>Experimenter C</td>
<td>13</td>
</tr>
<tr>
<td>Expected</td>
<td>8</td>
</tr>
</tbody>
</table>

For the third hypothesis—that the overall direct hit rate would be better for the group than for the individuals involved—the evidence was in the predicted direction. Given the small number of trials for this study, this effect would have to have been very large for us to detect it statistically, but the group obtained 15 hits out of 32 trials, whereas the average individual hit rate was 11.67 hits.

The fourth hypothesis—that there would be a positive correlation between low GMF and psi hitting for the group—although in the predicted direction, was not significantly supported. A nonparametric correlation (Spearman) was used to examine GMF and psi values because it could not be assumed that these values were normally distributed. The relationship (i.e., group ranks and low global geomagnetic activity) between the group’s psi-dream target rankings and the global GMF indices was not significant, although they were in the predicted direction, at $\rho = .224$.

Examples of Target/Mentation Correspondences

In this section we present some examples of correspondences between targets and dream mentation. In each case, we will give a description of the target first followed by the participant’s dream report. Although conclusions cannot be drawn from qualitative data, these data do constitute the raw material upon which the objective statistical data are based and may provide important insights concerning the underlying process. These examples are excerpts from the dream reports of the participants, identified by them as providing the basis for rating the target first. We have edited these
sections for purpose of illustration in this paper. They are not submitted for any evidential value.

Target 91, Early Man. From the film 2001. This clip depicts a group of man-like ape creatures, who awaken in a sheltered rocky overhang to find an obelisk in their midst. The obelisk begins making a loud high-pitched noise and the ape-men become frightened. They begin fleeing around, making threatening moves toward and away from the obelisk.

Trial 4, Experimenter A, Rank 1. "Dreamt of people trying to hide from other people. This seemed to be mixed up with people having very short, very fine fur, and I seemed to keep hearing someone saying "people have skin, not fur. I kept thinking of monkeys."

Target 88, Beast. From the film Legend. This clip shows a red-skinned man with horns, black lips, fangs, and cat's eyes stepping out of a mirror. He speaks mockingly about dreams and love, and in the closing scene he grins and then laughs wickedly.

Trial 6, Experimenter B, Rank 1. "Dreamt of a man with a severely burnt or maimed face. There was a close-up of his lips as he tried to speak. His mouth seemed normal, but there was a green spot on his lip. This made him seem like an alien."

Target 71, Space Ships. From the film Star Wars. This clip is a compilation of scenes throughout the Star Wars movie showing various types of spacecraft flying and manoeuvring, some near large planets or through "warp holes."

Trial 5, Experimenter C, Rank 1. "Saw a saucer-shaped, silver metallic UFO fly over me, bank over some trees, and then fly back over me."

DISCUSSION

The significant success rate (47%, $p = .006$) of the group in correctly selecting the target replicates the success of the Maimondides dream studies, albeit without the benefit of the facilities of a formal dream laboratory. This is in keeping with several small-scale studies done without the use of extensive sleep laboratories that supported the more convincing Maimondides work (Child, 1985). The indication of a slightly higher level of success for the group as compared to the individual may indicate that dream-psi may often occur at such a low level that it is missed by the individual, whereas a sharing of dream mentation within a group setting allows for the manifestation of common themes, patterns, or items. This leads us to recommend the continued exploration of consensus vote in the judging sequence of dream research.

However, we must speculate on the nature of why group judgments might be more successful than individual judgments. If ESP is a relatively weak effect, then a combination of extrasensorially perceived information relating to the same target from more than one person may be required in order to boost the accuracy of target judgments to a significant level.

A Dream GESP Experiment

However, looking at the success of a judging procedure that involves a single overall consensus call per trial, based on the consensus of several individuals, is different from looking at the number of hits per trial based on the individual calls of several participants per trial. In the latter case, the overall score may be partially due to a stacking effect. In this respect, our overall results may also have been partially biased by the stacking effect because we reported both individual and group performances that are not independent.

Contrary to previous literature, our expectation of significant psi hitting during times of low GMF was not supported ($\rho = .224$). However, it was in the predicted direction, and we plan to continue to explore this particular variable in future dream studies. The significant success rate for 2 of the participants ($p = .038$ each) in this study continues to point to the richness of the dream state as a vehicle for enhancing psi acquisition for the individual. The different methods chosen as an approach to facilitating dream-psi success by each individual met with varying degrees of success, and some speculation is called for on why this might be so.

"Lucidity," in which the dreamer becomes aware that he or she is dreaming at some point during the dream, was the approach chosen by Experimenter A in order to facilitate the acquisition of target information in the dream state. The participant first attempted to become lucid by means of a presleep suggestion, and after having achieved the lucid state, the participant requested while in the dream state that he or she be shown the target information. This approach is considered to have worked fairly well, with Experimenter A having three lucid dreams during the course of the study and correctly choosing the target twice due to the information received in these dreams. In one such dream, upon becoming lucid the experimenter stepped through a door into a sunny parking lot in which a group of tough-looking teenage boys were hanging out, all wearing sunglasses. The dream target for the following day involved a helicopter chase scene with James Bond in which all of the "bad guys" wore sunglasses against the glare of the sun. Additionally, Experimenter B also experienced a lucid dream during the course of the study. Upon asking to be shown the target material, the experimenter began flying uncontrollably around the room, twisting and turning. The following day, Experimenter B correctly chose the clip "Flying Nannies," depicting a scene from Mary Poppins that focuses on the other nannies getting blown away by a high wind, twisting and turning uncontrollably, as Mary Poppins arrives to take the post. Therefore, for an overall total of 4 lucid dreams during the study, 3 contained highly accurate target material. This approach was considered to be a success, even if somewhat limited by the ability of the dreamer to become lucid at will.

Experimenter B chose the approach of "conscious volition" in order to facilitate the acquisition of psi information in the dream state. In order to assist both the group and him or herself in succeeding in the goal of scoring above MCE for the study, Experimenter B decided to alternate the con-
Table 3

<table>
<thead>
<tr>
<th></th>
<th>Group Hits</th>
<th>Individual’s Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoping for Self</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Hoping for Group</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

Experimenter C chose a “waking after the ‘target’ dream” approach, which also involved self-suggestion prior to sleep onset, but in a process-oriented manner. The experimenter silently repeated the following suggestion two to three times immediately prior to sleep:

“When I fall asleep tonight I will dream and my dreams will relate to the target imagery. I will wake up after the dream which relates to the target and I will recall the contents of this dream.”

There is some evidence, often anecdotal, that some individuals can employ strategies that enable them to awaken at a preselected time. Empson (1993) cites a study in which individuals who claimed to be able to awaken at preselected times were able to achieve this with considerable accuracy. It was hoped that this presleep suggestion might be able to achieve awakening at the desired time. This strategy seems to have had some success: on 5 of the 13 nights on which Experimenter C got an individual hit, Experimenter C also awoke during the night and recalled aspects of a target-related dream. However, on one occasion, Experimenter C achieved a hit despite not awakening during the night and not recalling the contents of any dreams. An expansion of this strategy might involve a more specific suggestion or physically awakening the sleeper via an alarm either during or after the time period when the target clip is being shown.

Due to unforeseen time constraints, a decision was made during the course of the study to compare informally whether the spacing between dream trials would have any effect upon the acquisition of psi in the dream state for the 3 participants. Thus, the first 16 trials of the study were compared to the last 16 trials because a transition in the spacing of the trial nights occurred then. The first 16 trials involved having only two, or at most three, dream trials in a single week. The second 16 trials involved having five, or at most six, dream trials in a single week. Statistically, this did not seem to impact the group’s ability to select the target correctly, with 8 direct hits in the first 16 trials and 7 direct hits in the last 16 trials. However, as can be seen from Table 4, it did have an impact on the individual responses, with Experimenter A’s hit rate dropping slightly, Experimenter B’s hit rate improving slightly, and the largest impact occurring for Experimenter C, whose direct hit rate dropped from 10 in the first 16 trials to 3 in the last 16 trials. Additionally, the group experienced 5 of the 7 hits for the last 16 trials in the last 3 trials of the study. The pattern of hits and misses for the last 16 trials reveals a terminal salience effect often found in other psi research (J. B. Rhine, 1941).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>First 16 Trials</th>
<th>Second 16 Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Hits</td>
<td>Number of Hits</td>
</tr>
<tr>
<td>Group</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Experimenter A</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Experimenter B</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Experimenter C</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

During the course of the study, the authors felt they might be picking up better on targets containing a threatening aspect or conveying a negative impact. Some researchers have suggested that a certain amount of vigilance takes place in the dream state (Tolias, 1986; Ullman, 1986, 1990), a continued unconscious scanning of the environment in order to monitor any possible threats, physical or psychological, to the dreamers well-being. Quine’s studies exploring the impact of the emotionality of the target stimuli (Bierman, 1995) seem to indicate that video clips with either a high negative or positive content are better target material, and Krippner (1975) suggested that emotional stimuli are more effective in dreams than in non-dream experiments. Three independent blind judges rated the emotional impact of each of the 100 targets in the dream study pool by assigning either a positive impact, a negative impact, or as being neutral. This evaluation revealed a total of 35 emotionally positive targets, 32 emotionally negative targets and 33 emotionally neutral targets comprising the study pool. The total number of direct hits in the study was 15 in 32 trials. When these 15 targets are broken down into their emotionality categories we see the percentage of each category in this study (Table 5).
Table 5  
PERCENTAGE OF HITS BY TARGET TYPE (Total hits = 15)

<table>
<thead>
<tr>
<th>Hits</th>
<th>Positive Targets</th>
<th>Negative Targets</th>
<th>Neutral Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Total Hits</td>
<td>4 / 15 = 26.6%</td>
<td>8 / 15 = 53.3%</td>
<td>3 / 15 = 20%</td>
</tr>
</tbody>
</table>

This table shows that, in fact, the majority of hits were on negative targets. But was this due to a preponderance of negative targets within the target pool itself? To answer this question, we looked at how often a particular type of target was chosen in terms of its availability within the target pool of 100; that is, there were 35 positive clips available for selection as targets within the pool of 100, 32 negative clips available for selection as targets, and so on (see Table 6).

Table 6  
TARGET TYPE AVAILABILITY WITHIN POOL.

<table>
<thead>
<tr>
<th>Target Type Availability</th>
<th>Positive Targets</th>
<th>Negative Targets</th>
<th>Neutral Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times Selected As Target</td>
<td>35</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>% of Category</td>
<td>25.7%</td>
<td>40.6%</td>
<td>30.3%</td>
</tr>
<tr>
<td>Direct Hit</td>
<td>4 / 35 = 11.4%</td>
<td>8 / 32 = 25.0%</td>
<td>3 / 33 = 9.1%</td>
</tr>
</tbody>
</table>

Table 6 shows that almost 41% of the targets selected by the computer for the study contained a negative or threatening aspect. But, were the experimenters actually picking up better on these types of targets? Table 6 also shows both the number of times a target from each category was selected by the computer as the target and the number of times it was correctly chosen by the group as the target. The percentage of times each correctly chosen is also shown.

As can be seen from the last two rows in Table 6, the experimenters seemed to be quite successful in getting 8 direct hits out of the 13 times a negative clip was the actual target (hit rate 61.5%, p = .0016). This analysis is followed by the positive targets with 4 direct hits out of 9 presentations (hit rate 44%, p = .16), with the neutral targets having the poorest response. 3 hits in 10 presentations (hit rate 30%, p = .47). These tables support both the feelings of the researchers that they were picking up better on targets having a negative or threatening aspect as well as the previous literature on emotional stimuli and vigilance in the dream state.

Based upon interest expressed at the initial presentation of this paper, a sum of ranks (SOK) analysis has been performed to allow the results from this study to be more easily compared to other similar work. This analysis yielded SOK = 57, x^2 = 3.58, p = .063. This is similar to the types of effect size that have been seen in remote viewing work (May, Spottiswoode, & James, 1994; May et al., 1990), and there has been some speculation as to whether the richness of the dream state might be comparable to the task of remote viewing in one’s sleep.

Although the consensus vote technique seemed to work fairly well for us as a group, there were some concerns over the possibility that participants may have picked up verbal or nonverbal cues during the viewing period as to possible correspondences in other participants’ dreams. This may have led to a conscious or unconscious influence in subsequent ratings. Also, on sharing the dream material it sometimes appeared as if there were a recurrent theme in each of them. This led us to speculate whether it would have been better to confer as a group on the judging, rather than statistically, which target we wished to select as a group choice. However, it was decided that this type of approach may be a difficult strategy to employ due to either personality characteristics or personal convictions (concerning the correct target) adversely affecting a fair vote.

The level of success in this study would seem to indicate that conducting dream-psi research in the privacy of the participant’s home is a viable proposition. Participants who may view the confines of the laboratory as restrictive or the social setting of the laboratory uncomfortable might find the idea of participating in a formal psi experiment from the comfort of their own home very appealing. Robinson (1982) has detailed the importance of participants having choices in how they participate in psi experimentation and has also summarized the psychological literature on choice and perceived control. This literature shows that if participants feel (perceive) that they have control when performing different types of tasks, their performance will improve. Dream research conducted with participants dreaming at home could allow them to select the best night for their participation, their approach to acquisition of the dream-psi material, how that material is revealed to the experimenters; and even the time of day that they wish to come into the laboratory for the judging session. This type of research, conducted with the participant operating from the comfort and security of his or her own home (Delany, Watt, Morris, & Wiseman, 1993), reduces the expense of dream-psi research and eliminates the need for expensive laboratory sleep monitoring equipment. Additionally, in many cases, the time involved for the experimenters is greatly reduced. The orientation time for a dream study is minimal, and questionnaires or forms can be filled out at home and returned upon arrival for the judging session. The judging session itself takes minimal time, with the judging process for the three experimenters in this study taking approximately 30 to 45 minutes per session. This conceivably may be less with a single participant.

Although this study was relatively small, with only 3 participants taking part in 32 trials, the overall significant scoring was very encouraging and seems to suggest that dream research conducted without the use of laboratory sleep monitoring equipment remains a vital and worthwhile area of investigation. In this study the target was selected by the computer at the time of the initiation of the VCRs but not actually shown until later in the
night. Thus, if one dreamt about the target clip at 1 a.m. but the target clip was not shown until 3 a.m., this makes it impossible to rule out clairvoyance over precognition, because the target clip has already been determined. A future study could involve selection of the target immediately prior to playback, enabling a clearer distinction between precognitive and clairvoyant dreams. Additionally, where possible, a telepathic design should be considered, as the use of a sender may engender a feeling of more personal psi interactions for the participant and may result in higher scoring rates or a clearer manifestation of dream-psi imagery. This appears to be the case particularly with the use of dynamic targets, which more closely mimic real-life situations. We hope that future dream-psi studies conducted by other researchers will make use of dynamic targets, with participation taking place outside the confines of the laboratory, in order to replicate the results presented here. It is our feeling that dream research continues to be a promising technique for experimental study of ESP.

REFERENCES


