

## DREAMS AND PSI IN THE LABORATORY

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STRAUCH: According to the collections of spontaneous paranormal experiences existing nowadays in many countries, at least every fifth person claims to have experienced paranormal phenomena in the course of his life. Most of these numerous reports on telepathic, prophetic or psychokinetic events, however, are only of heuristic value. As far as their exact documentation and reliable verification are concerned, they do not satisfy our current standards. Rarely have these experiences been written down immediately, witnessed properly or documented in such a way that the probability of their occurrence could be estimated.

A survey of spontaneous paranormal reports reveals that every second case seems to occur in the sleep state and to manifest itself in dream content. Obviously because of methodological problems, experimental parapsychology only hesitantly approached the investigation of telepathically-induced dream content. In the few investigations carried out until now, methods and procedures of experimental research on paranormal dreaming have varied in terms of agent/percipient selection, stimulus material, way of transference, control of sensory cues and data evaluation. Emphasizing these aspects, I shall try to review the work done so far.

The Italian psychiatrist Ermacora<sup>1</sup> was the first one to conduct a longer series of dream experiments with telepathic induction. From 1892 to 1894, he collected over a total of a hundred nights the dreams of a five-year-old boy who was the percipient of the telepathic message. After the boy had fallen asleep (identified by observation only), Ermacora put the agent, a so-called somnambulist, into deep trance

and suggested to her the stimuli which she was supposed to transfer to the sleeping boy. The stimulus material selected by Ermacora consisted of detailed life situations which he thought were completely unfamiliar to the boy. One example of such a message was: "The boy will be on a boat which carries a red flag with a green cross; it is stormy and he gets sick in his stomach."

Ermacora reports that 54 out of 100 dreams did incorporate the telepathically-induced content fully, and another 21 dreams partially. The stimuli had not been transformed, but had been taken into the dream literally.

The shortcomings of these experiments are obvious. First of all, there was no control over conscious or unconscious cheating and sensory cues. Rather, agent and percipient belonged to the same family; they lived in the same house, and the experimenter left the scene once he had suggested the stimuli to the agent. This pre-scientific experiment therefore reveals all the possible pitfalls which might go along with an insufficient experimental control. Furthermore, there was no blind evaluation of the data. Ermacora simply compared the dreams with the targets and stated whether they were hits or misses.

In 1948, the Viennese psychotherapist Daim<sup>2</sup> conducted a series of telepathic dream experiments with some methodological improvements, but still with a number of deficiencies. Daim, who himself served as an agent, selected as stimulus material five different geometrical symbols and five colors. Prior to every telepathic trial, he paired the two kinds of targets randomly with each other. The intended transferences took place early in the morning when the agent expected the percipient to be still asleep. After his spontaneous awakening, the percipient had to write down his dreams before the agent came in to ask for a more detailed report. Daim claims to have achieved a high rate of hits. He conducted 30 experiments, 75 per cent of which were supposedly successful insofar as the dream content directly reflected the target material. However, the Daim experiments are open to severe criticism which throws doubt on the validity of the telepathic induction. Although he tried to avoid sensory leakage by separating agent and percipient up to 6 kilometers during the time of the telepathic transmission, he did not take care of post-experimental control. He did not introduce a second experimenter who would have elicited dream recall without knowing the target. He himself interviewed the percipient, a situation where suggestive interrogation and inadvertent communication cannot be excluded, particularly as he did not separate the various stages of recall nor tape record the interrogation. Besides, there was no objective evalua-

tion of the data. Daim only assessed which items of specific targets for that night could be detected in the dream report. He neglected the possibilities that alternative targets might also have been incorporated. This latter objection is substantiated by the fact that the subject knew the pool of target material.

The experimental research on telepathic dreams entered a new stage in 1962, when the Maimonides group with Drs. Ullman and Krippner<sup>3,4</sup> started to investigate systematically the telepathic induction of dream content. Utilizing the recent progress in general sleep and dream research, they refined and improved the experimental psi techniques and designed a kind of standard procedure for telepathic dream experiments. As Drs. Ullman and Krippner are present and can give you firsthand information on their current research, I shall restrict myself to pointing out their methodological improvements.

By recording brain waves and rapid eye movement activity continuously throughout the night, the various sleep stages of the percipient are identified. In this way, duration and intensity of the agent's endeavors to transfer the stimuli telepathically can be coordinated with those stages of the subject's sleep which most likely go along with dream activity. Second, the dream material is collected systematically. That means the percipient is awakened right out of his rapid eye movement sleep, and, as REM sleep recurs several times a night, in one night's experiments several dreams can be collected to be later matched against the target material. Third, the possibility of sensory cues and inadvertent communication is essentially reduced. A person not involved with the actual experiment establishes a target pool from reproductions of famous paintings. These targets are sealed in opaque envelopes and on each night an envelope is randomly selected and not opened before the subject has fallen asleep.

Additional control is introduced by having one experimenter who does not know the target watching the EEG and awakening the subject. Thus, the agent does not get into verbal contact with the subject at all, but is only told at what time he has to concentrate on his task. Furthermore, the data are evaluated more objectively: independent judges and the subjects themselves on a blind basis rate each target against each dream protocol of one experimental series.

The results of these studies were very encouraging, and have even been partially replicated with the same subjects. Out of eight studies, five have proved to be significant.

Following the experimental design of the Maimonides group, three further studies were carried out by other experimenters within the last

years with, however, some variations in experimental techniques. Five years ago, at one of these conferences, I summarized the negative results of my own study.<sup>5</sup> Twelve female subjects, who had been qualified as dream recallers and who had reported that they had experienced spontaneous parapsychological phenomena more than once during their life, slept three nights each in the laboratory of the Parapsychology Foundation, while EEG and eye movement activity were continuously recorded. Subjects were awakened out of their REM periods and asked for dream recall, and on the second and third nights the experimenter—who at the same time served as agent (a shortcoming of this experiment as compared with the Maimonides technique)—concentrated on randomly selected targets which consisted of pictures containing elements of movement and action. In the morning, dreams were explored by an independent psychologist who did not know the target pool. Six independent judges matched on a blind basis six pictures against sets of six different dream sequences. The results were not significant, neither by this kind of assessment nor by an evaluation where each element of a dream was matched against the whole target set. Nevertheless, as in other studies, peripheral ESP phenomena seemed to occur outside the experimental design.

Another study was carried out in 1965 by Gordon Globus<sup>6</sup> at the Boston University School of Medicine. This study represents the most elaborate experimental design as far as controls against sensory cues and inadvertent communication are concerned. Dr. Globus took care to prevent any contact between judges, not only during the time of the actual experiment, but also during the post-experimental phase until the rating was completed. As agent and percipient, he chose a couple of friends who were ESP believers. He ran 17 experimental nights. Prior to the experiment, an independent person had selected 17 sets of four pictures each consisting of visual material taken from European magazines or representing reproductions of famous paintings. Each set of pictures would show some contrast in terms of overall stimulus configuration, content, mood, color, style, and emotional impact.

On any given night, one of a set of four pictures was randomly chosen as target. Contrary to the Maimonides procedure, however, not only the REM period recall, but also hypnagogic fantasies and non-REM recall were recorded, but unfortunately not separately evaluated. On the basis of the dream and fantasy protocols, three independent judges rated on a first and second choice which of the four pictures was the target. The same rating was done also by the agent and by the percipient.

It had been decided a priori that a consensus rating of the three judges would be the primary test of the null-hypothesis, that there would be no difference between the proportion of correct judgments pertaining to the target and the proportion of correct guesses expected by chance alone. The consensus of the judges did not yield significant results. However, post hoc analysis of the data suggested that the judges differed widely in their ratings and were more correct when they were most confident.

Recently, Calvin Hall<sup>7</sup> published a study of telepathic dream experiments where the Maimonides design was again varied with regard to stimulus material and evaluation. Altogether 121 targets were telepathically transmitted to 6 male sleeping subjects. Experimenter and agent were different persons, but Hall himself concentrated on the targets and awakened the subjects whenever the EEG record indicated that they had spent twelve minutes in rapid eye movement sleep. Out of a predetermined target pool, for each single REM period a new target was randomly selected.

Interesting in this study, which unfortunately was not too much concerned with a rigid control against sensory leakage, were the choice of target material and the manner of intended transference. The task of the agent was to imagine a certain activity as vividly as possible. A written description accompanied each target, which was also acted as a pantomime by the agent, such as: exploring a cave, chopping wood, cutting one's finger. Furthermore, as a variation of technique, only 3 of the 6 subjects knew that during their sleep a telepathic induction was attempted.

In the statistical evaluation, Hall unfortunately submitted to an independent judgment only those dreams in which he noticed some connection between stimulus material and dream content. Nevertheless, in 29 out of 36 cases, this connection could be confirmed by a hundred persons who blindly coordinated dreams and stimuli by choosing, out of four themes proposed for each case, the one which best corresponded to the dream. Furthermore, Hall empirically assessed the probable occurrence of individual themes in a longer series of dreams. His data proved to be statistically significant.

This report roughly summarizes the few experimental studies on telepathic dreams carried out up to now. If one compares the first with the more recent studies, the progress in methodology becomes evident. Ermacora, as most of the classic psychic researchers, approached the subject naively as far as scientific verification was concerned. Even the Daim experiments are still affected by a clear absence of critical

attitude, although Daim has tried to introduce some organized methodology. Only the most sophisticated current approaches in experimentation give us hope that this field will be explored systematically. But, as you have seen, even recent studies in some aspects are still in the state of trial and error (or should I say of trial and success?). So far, no standard procedure has been adopted by different workers; therefore a comparison of their results is difficult. Besides, there are still many open questions with regard to the experimental setup. First, nowadays it should be no problem to safeguard a telepathic dream experiment against sensory cues. In many years of parapsychological research, techniques have been developed to avoid sensory leakage. As demonstrated in the Maimonides design and in the Globus study, it should be a matter of routine standard procedure to perform a completely safeguarded experiment. But, much more at the probing stage is the selection of agent and percipient. So far, either ESP believers or people who proved to be successful, or simply those who were willing to take part in such an experiment were taken as subjects. The same is true for the choice of the agent. Although Ullman and Krippner differentiated the selected agents by letting the percipient choose the agent he would like to work with, and although Globus took as agent a friend of the subject with whom the subject was emotionally involved, a more aimed selection is needed. Such a selection should include, as was already pointed out this morning, an assessment of personality variables of both percipient and agent, as well as an assessment of their dynamic relationship. We have reason to believe that previous emotional commitment between agent and percipient is of paramount importance. Furthermore, the momentary motivation of participation in an experimental study should not be neglected.

Today, more and more attention is paid to another previously neglected aspect, namely, the method followed to induce telepathic transference. Obviously it is not enough that the agent looks at the target at a given time. The Maimonides group already modified the transference by offering multisensory material to the agent. Hall improved the technique by acting out pantomimically the stimulus material. One step further would be to put the agent into a real life situation, an approach designed by Drs. Hernández-Peón, Cavanna and myself. There is another point to consider which Ermacora already took into account. He tried the transmission of a telepathic message from one unconscious to another. This is an interesting idea which, as far as I know, has been casually observed by the Maimonides group.

As far as the statistical evaluation of the data is concerned, a

current technique should always imply an assessment by independent judges on a blind basis. Although statistical methods employed might be accurate, the problem is whether they are adequate to detect effects as weak and sporadic as these phenomena may produce. On the other hand, Globus suggested a procedure to meet another argument, that theoretical probability might be inapplicable to this situation. He suggested that the theoretically anticipated proportion of correct choices be controlled by shuffling a given set of targets with their associated protocols. These four set combinations should then be given to the judges in order to obtain an empirical estimate of the true proportion of correct first choices occurring by chance alone under a given experimental situation.

Now my last point. There was a wide variation, so far, in the selection of stimulus material for telepathic dream experiments. Presumably the targets should be tailored more specifically to the dynamics of the interpersonal relationship between agent and percipient, but at the same time they ought to contain improbable elements that could not be expected to appear by chance alone. The stimuli used by Hall had already an advantage: they had a more direct impact on the agent and did not need to be elaborated intellectually. Let us hope that in the future the results of experimental dream research dealing with incorporation of sensory stimuli into dream content will be utilized for stimulus selection in parapsychological dream experiments.

MARGENAU: Thank you. May I ask a question which undoubtedly every outsider might want to ask, after this most interesting account of positive results. Are there any negative results on record?

STRAUCH: Besides my own study, three out of a series of eight studies of the Maimonides group gave negative results.

MARGENAU: I mean outside of those. Is it true that people who obtain negative results fail to publish them?

STRAUCH: You mean whether they suppress the data?

MARGENAU: Well, not with the intention of falsifying the issue! They just forget about them because they are not interesting. One does not know this, does one?

STRAUCH: Yes. One does.

MARGENAU: One does?

GARRETT: We have evidence of researchers suppressing all their negative results.

TART: I have some data on the number of unpublished experiments in parapsychology. A couple of years ago, Burke Smith and I sent a questionnaire to all members of the Parapsychological Association (which we estimated would be roughly a third of active parapsychologists). We got returns from about half. We asked them to report the number of their published as well as unpublished experiments. I think it is conservative to assume that the unpublished experiments were those in which the results were not positive. There were approximately two unpublished experiments for every one published.<sup>8</sup>

Moss: Often these unsuccessful studies are not written up because the journals do not accept them: they do not want to publish research with negative results. It happened to me and to other people I know.

ULLMAN: First, let me make an historical correction regarding the application of the REM technique to the study of ESP and dreams. It actually began in 1960 when I received a grant from the Parapsychology Foundation. I would also like to reformulate what I think are the main features of the psychoanalytic dimension in paranormal research. Once you take dreams seriously as a potential vehicle for paranormal effects, then the psychoanalytic situation emerges as a very favorable soil in which to breed these phenomena because of certain intrinsic characteristics. It sets up a particular social field in which a premium is placed on three things: intimacy, the search for the truth, and the use of a unique instrument, the dream, to find the truth.

Parapsychologists, in their pursuit of acceptable evidence, have sanitized the field of psi research. Using dreams, we get rid, at least partially, of any decontamination. Dreams remain one aspect of our existence with which we cannot tamper. Dreams reflect the truth. No matter how elaborate a metaphor they may involve, they are always talking about something real that confronts an individual, not infrequently a rather unpleasant residue of one's own experience. A French anthropologist named Roger Bastide referred to dreams as "a kind of social sewage system."<sup>9</sup>

Another dimension of dreams has to do with the relationship between the rapid eye movement experience and the concept of vigilance. Voyeurism may be the psychoanalyst's term for an impulse to scan reality, rooted in curiosity and vigilance. We could perhaps conceptualize the rapid eye movement period with its heightened information processing activity as an elaborate kind of scanning experience, during which, under certain circumstances, some events are paranormally perceived because of their meaning to the vigilant individual.



I think the psychoanalytic point of view in some way substantiates this. Dr. Servadio emphasized the fact that when something blocks the patient's contact with the therapist, a feeling of frustration arises which might trigger this elaborate reaching out for details in the life of the therapist felt to be important by the patient.

MARGENAU: Thank you. Mr. Ludwig will now talk on altered states of consciousness and psi.

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