

IMPROVED DREAM RECALL ASSOCIATED WITH MEDITATION¹

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Analysed the effect of meditation on the completeness and vividness of intentional dream recall by use of 110 data protocols obtained from an experimental home-study dream research project that involved Ss who recorded dream recall for 28 consecutive days. It was found that when a S had meditated the day before, there was significantly greater completeness of dream recall on the following morning. A significant interaction effect also was found between the regularity of the S's meditation and whether such meditation was associated with improved dream recall. The results were discussed in terms of Cayce's attunement model of meditation, which predicts more observable effects of meditation when it is practiced regularly.

Reviews of the research on the factors that influence dream recall (Cohen, 1974; Goodenough, 1977) suggest that the principal memory-process factors found to influence memory for dreams are the salience of the dream experience itself (such as degree of psychophysiological activation during the dream) and the opportunities for post-dream interference (such as delays in awakening).

Several clinical and experimental reports also have indicated that the remembering and forgetting of dreams often appears to be motivationally determined in a manner that bears a meaningful relationship with the overall psychodynamic functioning of the patient (Kanzer, 1959; Lewis, 1953; Whitman, 1963). Indeed, there may be control processes potentially available to implement a person's intention, whether it be conscious or unconscious, to remember or forget a dream. Cohen (1974) suggested that in order to understand how such psychodynamic variables might interact with basic memory processes to influence dream recall, more research is needed with regard to the role of motivational and attentional factors.

Such a research strategy already has proven useful in the study of motivational factors in short-term memory, where it has been found that Ss can implement an instructional set either to remember or to forget presented material by controlling rehearsal strategies that affect the interference process that governs their retrieval of the material presented. With regard to dream recall, a similar process that governs interference may be operative. For example, it has been found that one source of interference-based dream forgetting is the occurrence of bodily movements (Dement & Wolpert, 1958). Rolling over after a dream could come to be used as an unconscious strategy to produce interference of the dream memory. Conversely, anyone who is attempting to learn how to recall dreams soon learns the importance of lying still upon awakening (Reed, 1976b; Rorschach, 1951; Schachtel, 1959), a method of reducing the post-dream interference. Here we see how both interference and a psychodynamic process might interact to affect dream recall. In fact, there is evidence, reported recently in this journal (Redfering & Keller, 1974), that more dream recall is obtained when the instructional set given to the Ss motivates them to try to remember their dreams than when the instructional set makes dream recall a more incidental focus of the Ss' attention. It appears that study of the possible methods by which a person might implement an intention to recall dreams would increase our understanding of the processes that underlie the psychodynamics of dream recall.

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In an initial attempt to study intentional dream recall, Reed (1973) enlisted the cooperation of informed observers who were motivated to improve their dream recall. Evidence was reported that some degree of self-control of dream recall was developed. This study also revealed that changes or differences in dream recall ability weren't necessarily detected until a specific incentive was applied to promote maximal dream recall performance. When the Ss were interviewed, it was learned that variations in motivation to recall dreams were expressed by variations in the amount of time spent in the morning trying to retrieve dream memories. Further subjective reports suggested that the process of attempting to retrieve dream memories was related to the practice of meditation (cf. Carrington & Ephron, 1975; Sparrow, 1976 for similar reports).

A hypothetical connection between meditation and dreams can be established on the basis of theory and research that stems from Rorschach's ink-blot experiments (Rorschach, 1951). Lerner (1967) has presented an empirically based theory that concerns the role of kinesthesia in dreaming and has proposed that dream memories are mediated kinesthetically. Evidence for such a relationship comes from such findings as the disruptive effect of bodily movements on dream recall (Dement & Wolpert, 1958) and the positive relationship between movement response scores on Rorschach's test and variations in dream recall (Orlinsky, 1966). That meditation may affect kinesthetic functioning was supported empirically in Heider's (1969) experiments, which demonstrated that periods of meditation were followed by an increase in Rorschach movement response scores, whereas periods of simply sitting still were not. It is reasonable to extend this chain of evidence to propose that meditation may have some effect on dream recall. A relationship between meditation and dream recall is proposed explicitly by Cayce (Peterson, 1976, p. 508), who suggested that the practice of meditation implements an attunement to a level of awareness that is also present in the dream state and thereby reduces the usual dissociation between the waking and dream state that often makes the forgetting of dreams have the character of amnesia (for similar views see also Evans-Wentz, 1958; Prince, 1910).

This paper is a report of evidence of a preliminary nature that suggests that indeed there may be a relationship between the practice of meditation and success at intentional dream recall. It is an analysis of a portion of data from an experiment which, although not designed to test any specific hypothesis concerning meditation and dream recall, does contain observations relevant to this question.

METHOD

Experimental context. The experiment that provided the data on which this report is based was an extensive mail order project that involved approximately 400 observers, who recorded dreams for 28 consecutive days. The Ss were from a research volunteer pool, composed of members of the Association for Research and Enlightenment², who responded to an invitation to participate in a dream research project. For a detailed description of this project, see Reed (1976c).

An extension of earlier research (Reed, 1973), this project was designed to function both as a home-study, self-improvement course and as a data-gathering experiment. The project was described as such in the written solicitation sent to prospective Ss, and, as part of the methodology of the project's dual-purpose design, the Ss each contributed \$7.00 toward the cost of the project.

As disclosed to the Ss, the research purposes of the project included collecting data on dream recall and testing the effectiveness of a programmed text in dream interpretation. As a self-improvement course, the project was designed to aid in the development of dream recall. It guided the S, with the aid of several questionnaires,

²For information on the A. R. E. research volunteer pool, contact Charles Thomas Cayce, PhD, Director of Research, Association for Research and Enlightenment, P. O. Box 595, Virginia Beach, Virginia 23451.

through a detailed examination of the *S*'s beliefs about dream recall. Then, by requiring the careful and detailed rating of daily dream recall observations, it was hoped that the *S*'s sensitivity to memory for dreams might be improved. The project also was designed to provide a learning experience in dream interpretation through the use of exercises in self-expository writing. Finally, it was stated that any results from the project would be reported back to the *Ss*, to give them an opportunity to compare their individual findings with the collective results and to solicit their comments and suggestions as to other possible analyses. An effort was made, both in the initial preparation of the project and in subsequent follow-up procedures, to create an experimental situation characterized by cooperation for mutual learning, as is required by the ethical standards for research projects that involve the volunteer pool of A.R.E. (Thurston, 1973).

Those who responded to the invitational letter by sending in a signed waiver, a signed consent form, and the registration fee, were sent in return a project packet. The contents of the packet were as follows: a background information form, several questionnaires to be completed both before and after the observation period, stamped return envelopes, a programmed dream study manual, and a booklet for recording ratings of dream recall. Among the pre- and post-forms, there was a questionnaire on attitudes and aspirations related to dreams and dream recall, and a 72-item, attitude checklist of beliefs on the determinants of dream recall. The dream study manual outlined four sequential, week-long, problem-solving cycles of dream recording and self-reflection, dream incubation (Delaney, 1976; Reed, 1976a) and dream interpretation using the methods of self-expository writing in a diary (Progoff, 1975; Reed, 1976e) and the dream psychology of Carl Jung (1974) and Edgar Cayce (Bro, 1968; Cayce, Clark, Miller, & Petersen, 1971). An incentive for dream recall thus was provided by the dreamwork exercises contained in the study manual. During the 28-day study period, the *S* was instructed to maintain daily ratings of dream recall on a specially designed tally sheet (see below). At the end of the observation period, the *Ss* completed the second set of questionnaires and returned them with the dream recall tally sheets. It is the data from these tally sheets that provide the basis of the statistical analysis presented below.

Dream recall tally sheet. The method of recording dream recall was an elaboration of the home diary approach (Cohen, 1974), adapted to meet the needs of informed *Ss* who are focusing on improving dream recall. The tally sheet was developed in prior research with the aid of trained observers who provided the subjective, phenomenologically valid, dream recall categories. For a discussion of the rationale and development of the tally sheet, see Reed (1973).

The tally sheet is a printed form that enables the observer to make several ratings of dream recall in a brief amount of time. A sample tally sheet is shown in Figure 1. A complete text of the instructions on the use and scoring of the tally sheet has been published elsewhere (Reed, 1976d).

The tally sheet provides two rating schemes for dream recall, one for the amount or completeness of dream recall and one for the quality or vividness of recall.

The scheme for quantitative dream recall requires the *S* to choose among seven categories the one that best describes the amount, or completeness, of a dream recalled on a given occasion. (1) *Zero*: no awareness of having dreamed; (2) *Awareness*: awareness of having dreamed, but with no content recalled; (3) *Indefinite*: recall of at least some mental content, but nothing to suggest the theme of a dream; (4) *Fragmentary*: recall of content sufficient to suggest a theme of a dream, but with no flow in the narrative; (5) *Partial*: recall of sufficient content to provide at least one transition in the dream to suggest the flow of the narrative; (6) *Majority*: recall of a substantial portion of the dream's apparent narrative, but with frustrating gaps to indicate that substantial portions of the dream are forgotten; (7) *Whole*: fairly complete recall of the entire dream.

The scheme for qualitative dream recall requires the observer to rate the vividness of memory for eight attributes or dimensions of the dream experience: visual

DREAM RECALL TALLY SHEET

M	E	DATE	T	Amount Recall - Check One							Vividness - Put 0, 1, or 2							L	D	COMMENTS			
				O	A	I	F	P	M	W	V	C	E	E	S	V	T				S	R	
	✓	Jan 5	7:30				✓						2	0	0	1	0	0	0	0			
✓	✓	Jan 6	7:30					✓					2	1	1	2	0	0	0	0			
	✓	"	"						✓				2	1	2	2	1	0	0	0	2		
		Jan 7	6pm	✓																			Alarm Clock
		Jan 8	7am		✓																		" "
✓	✓	Jan 9	2am								✓		2	2	2	0	0	0	0	0			
		"	7:30	✓																			
✓		Jan 10	6pm			✓							0	0	0	0	0	0	0	0			I recalled more in the morning, but didn't write it down.
✓	✓	Jan 11	7am							✓			2	0	2	2	0	0	0	2	✓		
✓	✓	Jan 12	7am								✓		2	0	0	0	2	2	0	0	✓		Alarm Clock Saw myself from above
	✓	"	6pm					✓					2	0	0	2	0	0	0	0			This is an improved recall of Jan 10 dream (2)
✓		Jan 13	8pm								✓		2	0	2	2	1	1	0	0			Spontaneous recall of dream from this am.
		"	8pm	✓																			No recall this am. Alarm Clock
✓		Jan 14	7am	0																			No sleep
✓		"	5pm								✓		2	2	2	2	0	2	0	2			From NAP

FIG. 1. Sample Dream Recall Tally Sheet.

detail, color, positive emotion, negative emotion, sounds, voices, taste and smell, and touch, kinesthesia and other palpable sensations. Each dimension is rated on a 3-point scale: 0—the attribute is not present in the recall of the dream; 1—the attribute is present only by implication; 2—the attribute is present as an explicit memory image. (For more details, see Reed, 1976d.)

Recording meditation. No definition of meditation was given, nor was there anything in the instructions to suggest that the S was supposed to meditate. But, from a previous questionnaire administered to people who form the A.R.E. volunteer pool, it is known that approximately 80% do engage, with varying regularity, in some form of meditation (Kohr, 1976). The instructions did suggest that meditation might affect dreaming, and thus, if the S did engage in meditation, that it would be important to keep a daily record of it. There was a column on the tally sheet (see Figure 1, column 1) that was to be checked if the observer had practiced meditation the day before.

Data preparation, selection and analysis. Satisfactory interrater reliability was reported in past research with the tally sheet (Reed, 1973). However, because no reliability measure was taken in the present context, the analysis will restrict itself to within-S comparisons to avoid the possibility of artifactual effects created by potential differences between Ss in the use of the rating schemes. Consequently, the relation between the practice of meditation and level of dream recall will be evaluated by comparing, for each S, dream recall ratings when there was prior meditation with dream recall ratings when there was no prior meditation.

Computation of total quantitative dream recall, summed over a period of days for an individual S, followed the procedure used in previous work, where it was found that the geometric series, 1, 2, 4, 8, 16, 32, closely approximated the proportional number of ideational elements in dreams of successive categories (Reed, 1973). Thus, these numbers were assigned to the rating categories to compute total quantitative dream recall scores.

With regard to the qualitative rating scheme, the average rating given to each category was computed for those instances of dream recall that were rated on the quantitative scheme as fragmentary or better. A composite qualitative score then was based on the sum of the eight separate average ratings.

Of the 490 Ss who initially subscribed to the project, 305 completed it and returned tally sheet data. The following criteria were used to select from these protocols the ones that were to be used in the data analysis: (1) only those tally sheets that were complete, that were for a period of exactly 28 days, that showed no logical inconsistencies in the ratings, and that indicated no departure from the standard recording schedule were kept for analysis. There were 230 protocols that met these standards; and (2) only those Ss whose tally sheets showed that they meditated at least 5 days, but no more than 23 days, were used in the analysis. Thus, those Ss who either rarely meditated, or who meditated almost every day of the observation period, for whom within-S comparisons would be less valid, were eliminated. This final criterion produced a data pool of 110 Ss.

The median age of these 110 Ss was 41. The breakdown by sex was 79 female and 31 male. Background information data indicated that for these Ss, the median number of dreams previously recorded before they entered the project was in the range of 50-100 dreams.

RESULTS

The average total quantitative daily dream recall when an S had meditated during the prior day was 16.0 ($\sigma = 4.8$) and was 13.4 ($\sigma = 5.0$) when the S had not meditated. The average total quantitative daily dream recall was significantly higher under the meditation condition than under the no-meditation condition ($N = 110$, $t = 3.8$, $p < .001$; test for correlated means, Guilford, 1965, p. 184). However, with regard to qualitative dream recall, no difference between the meditation and the no-meditation condition was found.

Each S's average quantitative scores were compared between the meditation and the no meditation condition to see how many Ss showed improved dream recall after meditation. This comparison was made separately for those Ss who had meditated more frequently (15-23 days) and for those Ss who had meditated less frequently (4-13 days). The results of these comparisons are shown in Table 1.

TABLE 1
NUMBER OF OBSERVERS WHO EXPERIENCED EITHER IMPROVED DREAM RECALL AFTER MEDITATION OR NO IMPROVEMENT, TABULATED AS A CONTINGENCY OF THE FREQUENCY OF MEDITATION

Frequency of meditation (days)	Effect of meditation on dream recall		Total
	Improved	No improvement	
15-23	47	14	60
5-13	26	23	50
Total	73	37	110

It was found that, of the 110 Ss, 73 (66%) evidenced improved dream recall under the meditation condition ($p < .001$, binomial probability). It also was found that there was a significant interaction effect ($X^2 = 7.05$, 1 *df*, $p < .01$) between the regularity of the Ss meditation and whether the S's dream recall was improved under the meditation condition. Of the 61 Ss who were frequent meditators, 47 (77%) evidenced improved recall under the meditation condition ($p < .001$, binomial probability). Infrequent meditators, however, were equally likely to evidence improvement as no improvement of dream recall in the meditation condition.

DISCUSSION

The findings do suggest that there may be a relation between the practice of meditation and dream recall. However, because the Ss were on a self-selected schedule of meditation, it could be argued that some other factor was present that both affected the choice to meditate and the amount of dream recall (Smith, 1975). However, the fact that improved dream recall after meditation occurred only for those Ss who meditated on more than half of the 28 days of the experiment is evidence against the motivational-self-selection artifact interpretation. According to that interpretation, all Ss, regardless of the regularity of their meditation, should have shown the same effect of meditation on dream recall; or, if there was to be a prediction of differential effect, the motivational argument would seem to apply more appropriately to the infrequent meditators, whose choice to meditate appears to be more motivationally than habitually determined.

The obtained interaction, however, is consistent with the attunement model suggested by Cayce (Peterson, 1976), which states that it is the regular and persistent practice of meditation, where one yokes oneself to a consistent schedule that is resistant to motivational fluctuations, that will produce more observable results (Puryear, Cayce, & Thurston, 1976; Puryear & Thurston, 1975). Consistent with the interaction effect found in the present experiment, a survey of meditation practices among the volunteer pool of A.R.E. indicated that degree of adherence to a regular meditation schedule was related positively to the quality of the observed effects of meditation (Kohr, 1976).

Because of the unusual circumstances of the present experiment and the use of a rather select pool of Ss, it is not clear that these results will generalize to other situations. Moreover, in the present study, the short-term and long-term effects of meditation are combined. On the one hand, the analysis was of a short-term effect, the overnight effect of meditation on dream recall. On the other hand, the Ss were relatively experienced meditators, and so the effect observed may have been the result of long-term meditation. Whether a similar overnight effect of meditation would be observed with Ss new to meditation or dream recall is unknown. At the very least, however, this preliminary experiment should offer encouragement to further research on the interaction of meditation and memory for dreams.

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