

## THE INFLUENCE OF THE EXPERIMENTAL SITUATION IN HYPNOSIS AND DREAM RESEARCH: A CASE REPORT<sup>1</sup>

Charles T. Tart, Ph.D.<sup>2</sup>

It has been pointed out that aspects of the experimental situation other than the formal experimental manipulations, particularly the experimenter-subject (*E-S*) relationship, may influence the content of hypnotic dreams (1), the content of post-hypnotically influenced night dreams (2), and the content of stage 1 night dreams<sup>3</sup>, in which no explicit attempt has been made to influence dream content (8). This paper will report and discuss a rather striking case in which certain aspects of the experimental situation influenced the content of a stage 1 dream in a situation related to but not identical with the above, viz., one in which posthypnotic suggestion was being utilized to influence the *process* of stage 1 dreaming, but not the content (9).

The subject (*S*) of this report, herein referred to as *D*, as he was in reporting the data of other studies (9-11), was a 21 year old male enrolled in a premedical curriculum at the University of North Carolina. He had been selected to participate in an earlier hypnosis study of the author's (10) because: (a) he had responded very well in a group suggestibility test; (b) he indicated he was very interested in participating; (c) his test results of the MMPI (45-9813/7260 K-/FL), administered routinely in the introductory psychology course he was taking at the time of selection, had not suggested any serious maladjustment; and (d) he habitually recalled dreaming at least once per week. *D* was quite intelligent, very co-

operative in the experiments he participated in, and seemed to be quite well adjusted, both academically and socially.

The dream reported below was collected during the course of an experiment (9) in which it was attempted to influence the process of stage 1 dreaming by means of posthypnotic suggestions. *D* had been selected as an *S* for this experiment because the content of his stage 1 dreams had been strongly influenced by posthypnotic suggestion in the previous study (10) he had participated in.

In preparation for this study, *D* was given three hypnotic training sessions, devoted to giving him a broad range of hypnotic experience and allowing him to reach as deep a hypnotic state as possible. He reached a very deep hypnotic state in these training sessions and throughout the entire experiment, for he was able to demonstrate such phenomena as systematized posthypnotic amnesia, positive and negative visual hallucinations (both hypnotically and posthypnotically), bizarre posthypnotic suggestions, etc. *D*'s reports on a self-report scale of hypnotic depth, described elsewhere (9, 11), also indicated that a very deep hypnotic state had been reached, and conventional terminology would describe his hypnotic state as somnambulistic, and even approaching a pleary trance. His description of his deep hypnotic state was that he was "floating" in a perfectly silent and black void, with no spontaneous mental activity whatsoever.

Prior to the experimental night on which the dream reported below occurred, *D* had participated in 14 experimental nights of sleeping in the laboratory, with electrodes attached for recording his electroencephalogram (EEG) and skin resistance changes, and a tiny strain gauge attached to his eyelid for measuring rapid eye movements

<sup>1</sup>This study was carried out during the tenure of a Predoctoral Research Fellowship, MPM-14,622-C1, from the National Institute of Mental Health, United States Public Health Service, to which I wish to express my appreciation.

<sup>2</sup>Laboratory of Human Development, Stanford University.

<sup>3</sup>The important discoveries of the past decade about stage 1 nocturnal dreaming have now been summarized and reviewed in several sources (3-7).

(REMs) (12). The various posthypnotic suggestions of these 14 nights had been: (a) simply to sleep well and normally on eight nights, devoted to collecting baseline data on the sleep-dream cycle; (b) suggestions directed toward influencing the content of D's stage 1 dreams on two nights near the beginning of this series; (c) to wake up at the start of each stage 1 dream; (d) to wake up at the end of each stage 1 dream; (e) not to dream at all; and (f) to dream all night.

As part of the experimental procedure, D experienced total amnesia for the hypnotic sessions on each of these 14 nights in the laboratory, as the experimenter (*E*) had suggested. The *E* had led him to expect that this amnesia would be removed on the fifteenth night because the experimental procedure would be changed, and it would no longer matter if he knew about the design of the experiment. After the fourteenth night, however, the *E* had decided to repeat procedures (c), (d), (e), and (f), above, so when D reported to the laboratory on the fifteenth night he was asked to continue to accept amnesia throughout the remainder of the experiment (another eight sessions). This was not a completely free choice for D, as he had committed himself to participating in the entire experimental series at the beginning of the study, as well as being paid five dollars per night, so he could not very well refuse this request. He acceded, although he seemed quite disappointed, as he was very curious about the nature of the experiment. When D was later hypnotized, but before he was given the experimental posthypnotic suggestions for the night, the *E* praised D at some length on his patience and the good experimental results he was producing.

While the electrodes were being attached, D asked the *E* a question about hypnosis, inspired by a film which he had recently seen, *The Manchurian Candidate*. The question was whether a hypnotized *S* would die if the hypnotist suggested that he should. While the *E* assured D that this was impossible, he also treated the question

rather lightly and joked with D about it, asking him if he would die for "the sake of science," to make a scientific experiment out of it! D seemed to enjoy the joking, and was apparently satisfied with the *E*'s answer.

All the electrodes having been applied by this time, D was deeply hypnotized (as indicated by his report on the self-report depth scale, a test hallucination during the hypnotic state, and subsequent amnesia for the hypnosis), and the experimental suggestion to wake up at the end of each stage 1 dream that night given. The *E* also suggested that D had done very well on the previous experimental night when this had been suggested to him, but that he had missed waking after a couple of dreams. He was further told, however, that he would do much better now that he had had some practice, and would wake at the end of every dream. The *E* then dehypnotized D, with amnesia suggested, and D went to sleep. The *E* recorded D's EEG and REMs throughout the rest of the night on a Grass III-D EEG machine.

D quickly fell asleep, as indicated by the EEG record, at 11:08 PM. At 11:57 he dreamed in stage 1 sleep for 14 minutes without awakening, thus failing to carry out the suggestions. At 1:07 AM he dreamed for another 14 minutes, but woke up from stage 2 sleep<sup>4</sup> approximately 9 minutes after the end of this dream. The contents of the dream he reported were not particularly interesting, being about his doing a difficult reading assignment at the library in connection with an honors program he was enrolled in (a possible representation of the difficulty of the experimental task?). He quickly went back to sleep after reporting this dream. At 2:41 AM he dreamed in stage 1 sleep for 29½ minutes, without awakening. At 4:27 AM

<sup>4</sup>Sleep stages 2, 3, and 4 are characterized, respectively, by the appearance of spindles, high voltage slow waves, and the predominance of high voltage slow waves, a classification originated by Dement (13). These stages of sleep seem to be characterized by the absence of what we normally conceive of as dreaming, although there may be a sort of "slow thinking" going on here (14, 15).

he suddenly woke from stage 3 sleep and reported a dream. The following is an exact transcription of the tape recording made at that time of his dream report.

"Well, it was almost like a story or a novel that I was a part of. This was in, uh, very vivid colors and back at my home in Durham. At home in Durham where I, uh, we have about 30 acres of property out in the woods, and one day while I was working in the yard pruning some Yellow Bell bushes, and I remember their exact location from the ones we have in the yard now... this almost ancient old Negro came up, a woman, and asked, and spoke to me. I guess her tone was almost hypnotic, for she asked me if I would help her cheat death<sup>5</sup>. She said that her son, her only son, had been killed about four months before, while he was trying to hold up a gas station, and now lies amolding in the grave. Then the old lady said that she would like for me to help her bring this young man back to life again, and, like a fool, I agreed. She said that she would contact me later, and I went back to my pruning, and was only pruning for about, oh, it couldn't have been more than five seconds, and when I looked up again to see where she was going, she was already gone. And for someone as decrepit as that she would really have had to move to get out of the range of my sight in five seconds. However, nothing happened for about six days, and then came the night when all was in the warm, moist spring, when black clouds were scutting across a full moon, driven by a relentless wind. There came a knock on my front door, and I opened it, and there a young, a little boy stood, a little colored boy stood there that said, 'Old lady say for me to give you this.'

"I said, 'Well wait a minute. Where is she? I want to get out of this.'

"And he says, 'Sorry, I can only do what she tells me.' And he, inside, he threw

a leaf and a note. I picked up the leaf first, and it had writing on it, in gold, with some form of formulas, or I don't know... It was just unbelievable in difficulty, all written on the leaf in what looked like solid gold... Then the note—the note had elaborate details where I could go and dig up the body of the young man. I should have stopped there, but I felt compelled to go on for some reason, so I called two of my friends and that night our spades cut into the fresh earth of the, uh, the unmarked grave. We finally got the pine box up, which was already starting to rot. We saw that the quicklime which the authorities had used had already done its job, because the flesh had rotted off already, and only the skeleton remained. So we followed the, uh, instructions of the note. Take the leaf and drop it through the eye, or the optic capsule there now was all that remained of the man. I didn't notice that the moon had been covered with clouds, and there was no light coming from up there. In fact, it was very thick up in the clouds, and as the leaf was dropped through the optic capsule suddenly the sky was split with lightning, and one of my friends screamed loudly. He had been standing near a tree and had been struck blind. In all the hurry and fuss afterward, we had been running the man, my friend, the boy, to the hospital and everything, we didn't realize what had happened, but instead hurriedly kicked the box back into the grave, and in a makeshift manner covered it up, taking him up to the hospital.

"One month later again there was a knock at my door, and in the same conditions the little colored boy was there, with another note and another odd leaf. We had some time that evening as my other friend and I, before my other friend and I went back to the grave, so we checked the leaf to find out what kind of leaf it was, learning that it was a Mandrake leaf, that was often used in Voodoo during the middle ages, and now during the, uh, in some of these, uh Caribbean kingdoms. However, we were so intrigued with what

<sup>5</sup> In retelling this dream to the *E*'s assistant on the following experimental night, D said that the old woman had asked him to take part in a "scientific experiment." D did not seem to notice that he had changed the narrative here.

was going on that we decided to go back to the grave. We went back, dug him up again, and again followed orders, this time turning his head to one side where the otic capsule should be, where the ear should be, which was now only an otic capsule, not bothering to notice that again the sky had suddenly become very thick. As I dropped the leaf with the gold formula through the ear, again lightning split the sky. Then came such a terrific crash of thunder that both of us, my friend and I, were knocked cold by the concussion. I got up first and yelled to my friend, who yelled back to me and said, 'Speak to me.' So I spoke again and he said, 'Your lips are moving, but I can't see you, I mean I can't hear you.' And I realized then that my other friend had lost his hearing.

"Again, unthinkingly, we didn't stop to analyze what was going on, and exactly one month later I made the trip alone, back to the grave under the same conditions. After I dug him up and he lay there, the body lay there before me, or the skeleton lay there before me and I was, I did, I finally analyzed the situation and realized what was going on. For just as I was ready to drop the gold leaf, the leaf, the golden formulas into the chest cavity where the young Negro's heart, and consequently his life was, I looked down at the skull and saw the clear, sky blue eyes of the first friend who had been struck blind staring up at me, and I realized that the old lady, the old woman, was about to sacrifice my own life-giving heart to give her evil son the flesh, and consequently the heart and life which he needed to live.

"I don't, I just remember running back to my house and just falling on the bed, and I must have passed out for hours. I felt like a man who had just escaped a precipice in the dark and had saved himself just before he had gone over. And never more was I visited by the ancient Negro again. That's all, Charlie."

The *E* then said, "That's quite a dream, D. Can you think of anything that might have made you dream that? Any story you read lately, or anything?"

"Charlie, I was just thinking I would like to write a story about this. I have never read a story like that, no. Not in my recollection. I am almost sure I haven't."

The *E* then asked, "How long did the whole thing seem to last?"

"I don't know whether it was just one dream, or whether part of it, I had part of it and then stopped for a while and had another part of it and then stopped. I don't even know the degree, how long it was, Charlie, or whether it was even continuous or not. It seemed quite long, though."

The *E* then said, "You mentioned that you had lain down on your bed and had seemed to be unconscious for hours. Did you experience this in your dream? Was there actually some action afterwards, or did this just seem to be the end of the dream without actually experiencing it?"

"Well, I remember getting up and that was when I said that it, I said that the colored woman had nevermore appeared, because after the dream was, I mean after, uh, I did experience falling down on the bed and just lying there for a long while, and I didn't dream anything. It was all black, and when I woke up I expected the old colored woman to come to me again, but evidently since she, I was able to say she didn't come again, I don't remember any action or anything, just the fact that she didn't come to see me again. So therefore I must have woken up after the period of unconsciousness<sup>6</sup> on the bed."

Then the *E* said, "Okay, anything else?", and the *S* replied, "No," and went back to sleep. He began dreaming in stage 1 almost immediately after going back to sleep, but went into non-stage 1 sleep after this without waking, so the content of this dream is unknown. The *E* later woke him at 6:17 AM, in order to get him up in time for breakfast. D could not recall the short dream he was having at the time the *E* awoke him. When asked if he recalled any-

<sup>6</sup> This period of "unconsciousness" in D's dream may have corresponded with the 77 minute period of non-stage 1 sleep before he awakened.

thing else about any of his earlier dreams of the night, he added the following about the dream described above: "In the one when, uh, or I was digging up the Negro boy, the ground was very, very rich and very, very black there where I was digging. I don't know whether this is important or not. As if well fertilized."

The first thing that strikes one about this long dream is its dramatic, indeed almost mythical quality. The tape recording conveys this much more strongly than the transcription, for D recounted his dream in a very dramatic, almost poetic fashion. Although it was not feasible to obtain associations or question D too intensively within the context of the *E-S* relationship called for by the experimental design, an interpretation of this dream as a dynamic expression of aspects of the experimental situation, the *E-S* relationship, and D's current feelings toward the *E*, can be made as follows.

The old Negro woman seems to represent the *E*. She has an "almost hypnotic" tone to her voice, and she asks D to participate in a "scientific experiment" (in D's retelling of the dream), to cheat death, a very unusual request. But D knew that the experiment he was participating in was quite exploratory, trying many things that had never been done before, and thus unusual. The old Negro woman possesses magical powers, and appropriate expression of the many unusual experiences D had in the hypnotic training sessions as a result of *E*'s suggestions. Particularly, she disappears rather mysteriously. In one of the training sessions, D had experienced a negative visual hallucination of the *E*, and thus the old woman's power is the *E*'s power.

The young colored boy who delivers messages for the old woman may be a representation of another role taken by the *E*, viz., that of technician for attaching electrodes. Alternatively, he may represent the *E*'s male assistant, who aided the *E* in attaching electrodes and operated the polygraph equipment.

The sequence of certain events in the dream bears a striking resemblance to the

process of hypnosis, as D had described it in the past. Note the following sequence in the dream: (a) digging *down* into the rich, *black* earth for the dead (but potentially alive = entranced?) boy (who may partially represent D); (b) the blue eyed friend (D has blue eyes, and this friend seems simply a representation of D) who is blinded; and (c) the second friend (probably also a representation of D) who loses his hearing. As D enters a deep, hypnotic trance he: (a) first closes his eyes (loses his sight) and goes *down* into total *blackness*; and (b) loses awareness of any sounds but the *E*'s voice (loses his hearing in a "magical" way). But D stops going down at this point: he is *not* going to go deep enough to die for the old woman (the sake of science, the hypnotist). Not only has he expressed this consciously while joking with the *E* before the induction of hypnosis, he has now dramatically expressed this limit in his dream.

Why such a dramatic expression of an innocent-seeming joke? What more powerful motives might lie behind this dramatic "drawing of the limit?"

Several factors seem to be working together here to produce this intense expression of resistance, this drawing of the line. First, D was quite disappointed about not being told about the design of the experiment and having his amnesia removed. He probably was not able to work through all his resentment in direct interaction with the *E* before the induction of hypnosis. Secondly, D probably had some feelings, almost inevitable in this prolonged hypnotic experiment, of being manipulated by the *E* (and, of course, he was being manipulated). Finally, the *E*'s telling D that he had failed to wake up after some dreams on the previous experimental attempt could have aroused further feelings of resentment toward the *E*, perhaps a feeling of being unjustly blamed for a failure that was not his but the *E*'s, since the latter was manipulating him.

Many expressions of hostility toward the *E* can be found in the dream to support this hypothesis of a good deal of

unexpressed resentment providing much of the motivating force behind this dream. The *E* is represented as an old, decrepit Negro woman, who is not going to come back any more and have power over D. The *E* (or perhaps his assistant) as the little colored boy plays a stupid, subservient role.

The old woman's son is an ambiguous figure who may represent both D and the *E*. In support of his representing D, we note that the dead boy acquires the characteristics of D's friends (who seem to be extensions of D only), viz., their eyesight and hearing, and comes close to acquiring D's life. This boy has been killed, his flesh rotted away by quicklime (paste for the electrodes was routinely rubbed into D's skin, and had caused some local irritation), and buried. This may represent D's feeling of having been manipulated in the experimental situation. The dead boy may also represent the *E*, for he is exerting a magical power over D (through the aid of his mother), he takes away D's sight and hearing (insofar as D's friends are extensions of himself), and threatens to take away his life, as the *E* had joked about earlier. The dead boy acquired blue eyes, and the *E* also has blue eyes. Yet if the dead boy represents the *E*, the hostility of D toward him is also expressed, for then the *E* has been killed, buried, and his flesh rotted. The dead boy probably represents both the *E* and D and is thus an excellent example of condensation.

This interpretation of D's dream is concerned only with its relation to the experimental situation and, because of the lack of associations, its "validity" must be based largely on its internal consistency and the *E*'s informal knowledge of D. The essence of this interpretation was explained to D at the next experimental session by the *E*, and he accepted the interpretation, feeling that he was certainly expressing some resentment toward the *E* and dramatizing the joking about dying for the "sake of science."

This interpretation in terms of the experimental situation obviously does not

exhaust the possible meanings of this rich dream, and D himself told the *E* that the above interpretation did not seem to exhaust the meaning of the dream, even though he could not understand what else it might mean. Interesting speculations are possible along Jungian lines by interpreting the dead boy as D's shadow, or viewing the digging up of the body as representative of delving into the unconscious. The mandrake leaf covered with gold writing is an unusual motif, and D claimed he did not know that the mandrake leaf was important in magic (16). Dropping the leaf through the dead boy's eye socket is reminiscent of Poe's story, *The Gold Bug* (17), and half forgotten memories of this story may have mixed with knowledge of southern Negro Voodoo lore, etc. As stated above, however, extensive probing was not feasible within the context of the experimental program, and while it had been planned to carry out some informal exploration of the plethoric hypnotic state with D after the termination of the formal experiment, other commitments of both D and the *E* made this impossible.

The present case thus strikingly illustrates how factors other than the formal experimental treatment(s) can have a marked effect on the behavior of Ss, an effect that may be even stronger than that caused by the experimental treatment itself. These factors are similar, but not identical to what Orne has termed "demand characteristics" in his excellent discussions (18, 19) of the social psychology of psychological experiments. The demand characteristics are subtle, implicit expectations, usually communicated to the Ss in non-verbal ways, about how they should behave in the experiment. Often the experimenter does not realize he is making these demands. The features of the experimental situation important in the present case differ from these demand characteristics in being essentially uncontrolled, inadvertent, and non-uniformly applied. While it is of interest to study these factors in and of themselves, in most experiments they must be viewed as contaminating factors,

sources of increased variability in the data which could mask experimental effects of interest, and the practical question arises as to how one gets rid of, or at least, minimizes such factors.

In this respect, it is important to note that the above case is atypical for the present *E*. The *E*'s relationship to some dozen other *Ss* in two experiments (9, 10) concerning hypnotic and nocturnal dreams has generally been friendly, permissive, and non-authoritarian, and generally very little personal material or representations of the experimental situation have appeared in the experimental dreams. What little personal material that has appeared has been most prominent in the very first experimental sessions, so it apparently has adapted out very quickly, and it certainly has been a very weak factor compared to the main experimental manipulations in affecting the results. By contrast, the *E-S* relationship seems to have been characterized by more authoritarian techniques and greater social distance between the *E* and the *S* in many earlier studies (19-23) and the personal dynamics of the *Ss*, combined with the *E-S* relationship in these studies seems, in many cases, to have been as important a factor (although often unrecognized) in determining the experimental outcomes as the formal experimental treatments. One might hypothesize, then, that a friendly, permissive, somewhat businesslike *E-S* relationship may be an effective way of minimizing contamination of experimental results in dream research from aspects of the experimental situation, as it does not create strong feelings which must be expressed in the experimental dreams.

The need of *Ss* to express feelings about the experimental situation may also be considered in terms of adaptation to the experimental situation. On the first night in the laboratory, particularly, the *S* is brought into a strange laboratory (which

may be in a *hospital*, with all its connotations), strange gadgets are attached to his body which have something to do with electricity (many *Ss* ask about getting shocked), and a comparative stranger watches him while he sleeps and dreams (many *Ss* have a suspicion that the wires on their head let the *E* know *what* they are dreaming about, despite the *E*'s disclaimer). This has been dubbed the "first night effect" in recent literature on dream research (7) and often results in the first stage 1 dream of the night being skipped. In terms of dream content, Whitman et al. (8), working with psychiatric patients, report that the experimental situation continues to influence the content of the reported stage 1 dreams over a very long period of time. William Dement (private communication, 1963), however, reports that adaptation to the experimental situation seems to take place fairly rapidly with normal *Ss*, with the frequency of both obvious and covert references to aspects of the experimental situation declining considerably after a few nights in the laboratory.

The present case, then illustrates how aspects of the experimental situation other than the formal experimental manipulations, such as the *E-S* relationship, can have an important effect on the *Ss*' dreams. The present *E*'s experience and the results of some other studies suggest, however, that such effects may be minimized by a permissive *E-S* relationship and giving the *Ss* time to adapt to the experimental situation. Further research on the nature of such experimental situation effects, and procedures and factors which emphasize or minimize such effects is certainly needed in order to prevent these effects from masking the actual results of some experimental treatments, not only in dream research in particular, but in psychiatric and psychological experiments in general.

#### REFERENCES

1. Newman, R., Katz, J., & Rubenstein, R. The experimental situation as a determinant of hypnotic dreams. *Psychiat.*, 1960, **23**, 63-73.

2. Rubenstein, R., Katz, J., & Newman, R. On the sources and determinants of hypnotic dreams. *J. Canadian Psychiat. Assn.*, 1957, **2**, 154-161.
3. Kamiya, J. Behavioral, subjective, and physiological aspects of drowsiness and sleep. In D. Fiske & S. Maddi (Eds.), *Functions of varied experience*. Homewood, Illinois: Dorsey Press, 1961, Pp. 145-174.
4. Kleitman, N. Patterns of dreaming. *Sci. Amer.*, 1960, **203**, 81-88.
5. Kleitman, N. *Sleep and wakefulness*. Chicago: University of Chicago Press, 1963.
6. Oswald, I. *Sleeping and waking: Physiology and psychology*. New York: Elsevier, 1962.
7. Snyder, F. The new biology of dreaming. *Arch. gen. Psychiat.*, 1963, **8**, 381-391.
8. Whitman, R., Pierce, C., Maas, J., & Baldrige, B. The dreams of the experimental subject. *J. nerv. ment. Dis.*, 1962, **134**, 431-439.
9. Tart, C. Effects of posthypnotic suggestion on the process of dreaming. Unpublished doctoral dissertation, University of N. C., 1963.
10. Tart, C. A comparison of suggested dreams occurring in hypnosis and sleep. Unpublished M.A. thesis, University of N. C., 1962. Submitted for publication.
11. Tart, C. Hypnotic depth and basal skin resistance. *Int. J. clin. exp. Hypnosis*, 1963, **11**, 81-92.
12. Baldrige, B., Whitman, R., & Kramer, M. A simplified method for detecting eye movements during dreaming. *Psychosom. Med.*, 1963, **25**, 78-82.
13. Dement, W. Dream recall and eye movements during sleep in schizophrenics and normals. *J. nerv. ment. Dis.*, 1955, **122**, 263-269.
14. Foulkes, W. Dream reports from different stages of sleep. *J. abnorm. soc. Psychol.*, 1962, **65**, 14-25.
15. Rechtschaffen, A., Verdone, P., & Wheaton, Joy. Reports of mental activity during sleep. *Canadian Psychiat. Assn. J.*, 1962, **7**.
16. Thompson, C. *Magic and healing*. London: Rider & Co., 1946.
17. Poe, E. A. The Gold Bug. In J. Wilson (Ed.), *Tales of Edgar Allen Poe*. New York: Scribner, 1927. Pp. 436-480.
18. Orne, M. The nature of hypnosis: artifact and essence. *J. abnorm. soc. Psychol.*, 1959, **58**, 277-299.
19. Orne, M. On the social psychology of the psychological experiment: with particular reference to demand characteristics and their implications. *Amer. Psychologist*, 1962, **17**, 776-783.
19. Farber, L., & Fisher, C. An experimental approach to dream psychology through the use of hypnosis. *Psychoanal. Quart.*, 1943, **12**, 202-216.
20. Mazer, M. An experimental study of the hypnotic dream. *Psychiat.*, 1951, **14**, 265-277.
21. Nachmansohn, M. Ueber experimentelle erzeugte Traeume nebst Kritischen Bemerkungen ueber die Psychoanalytische Methodik. *Z. Neurol. Psychiat.*, 1925, **98**, 556-586. In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951. Pp. 257-287.
22. Roffenstein, G. Experimentelle Symboltraeume: ein Beitrag zur Discussion ueber Psychoanalyse. *Z. Neurol. Psychiat.*, 1924, **87**, 362-372. In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951. Pp. 249-256.
23. Schrötter, K. Experimentelle Traeume. *Zentralblatt. f. Psa.*, 1912, **2**, 638-648. In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951. Pp. 234-248.