

RECOVERY OF MEMORY AFTER POSTHYPNOTIC AMNESIA

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Posthypnotic amnesia is characterized by a transient inability to recall the events of hypnosis after the termination of the hypnotic state. It is apparent that at least two factors contribute to the initial inability of Ss to recall the experiences of hypnosis: the general effect of normal forgetting, and the specific effect of the suggestion to temporarily forget what has happened during hypnosis. These factors are invariably confounded in the list of memories produced by S. It is usually assumed that the forgetting component is a normal process independent of hypnotic susceptibility while the effects of amnesia are a direct function of hypnotic depth.

The most direct method for evaluating the relative contributions of amnesia and forgetting to S's inability to recall his hypnotic experiences takes advantage of the fact that posthypnotic amnesia is reversible (Orne, 1966). Posthypnotic amnesia can be lifted by a prearranged cue, restoring many of the previously blocked memories. Memories that S can recover have clearly not been forgotten in the ordinary sense of ablation or decay.

However, reversibility has not been emphasized as part of the amnesia process because it is generally assumed to be correlated with S's inability to recall items during the initial amnesia test. Forgetting is confounded with amnesia, however, and it would appear to be crucial to assess the occurrence of reversibility as a means of evaluating whether S's lack of recall is an indication of amnesia, or a function of forgetting. Unfortunately a statistical problem has hindered the documentation of the reversibility process. Because posthypnotic amnesia is correlated with hypnotizability, it is possible that, compared to unsusceptible Ss, hypnotizable Ss recover more items after amnesia simply because they have a greater pool of items left available for recall. Nace, Orne, and Hammer (in press) recognized this problem, and compared Ss' reversibility based on a ratio score of items actually recovered to the total number of items available for recall. Within the limits imposed by the size of their sample they demonstrated that hypnotizable Ss recovered a greater proportion of their previously unrecalled memories than did unsusceptible Ss.

An alternative strategy of analysis is to examine a large number of Ss stratified into subgroups differing in hypnotic susceptibility, but matched for recall during the amnesia period. By directly comparing susceptible and unsusceptible Ss who recall the same number of items during the testing of amnesia, reversibility can be assessed independently of the correlation between the number of items recalled during amnesia and during reversibility, thereby eliminating the differential ceiling effect problem.

METHOD

The Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A) was administered in small groups to 691 male and female college student volunteers. The HGSHS:A is a work sample of 12 representative hypnotic experiences. For posthypnotic amnesia it is suggested

that when S returns to the waking state he will find it difficult to remember his hypnotic experiences, and that he will not be able to remember anything that has happened until E tells him that he can. After hypnosis is terminated, amnesia is tested by asking S to recall everything that occurred since the induction procedure began. After S has completed his written list, E gives the cue to lift the amnesia, and asks S to write down any new items that he did not remember previously (reversibility). Reports of memory collected during the amnesia and reversibility conditions constituted the basic data for this study.

On the basis of HGSHS:A scores, Ss were classified as low (0-4), medium (5-7), or high (8-12) in susceptibility to hypnosis. Subgroups were then formed that differed in hypnotizability but were matched for recall during the test for posthypnotic amnesia. Where cell frequencies were low, groups of Ss were combined to yield subgroups containing at least 15 Ss (except for high Ss recalling 7 or more items, with only 8 Ss in the group). This study is

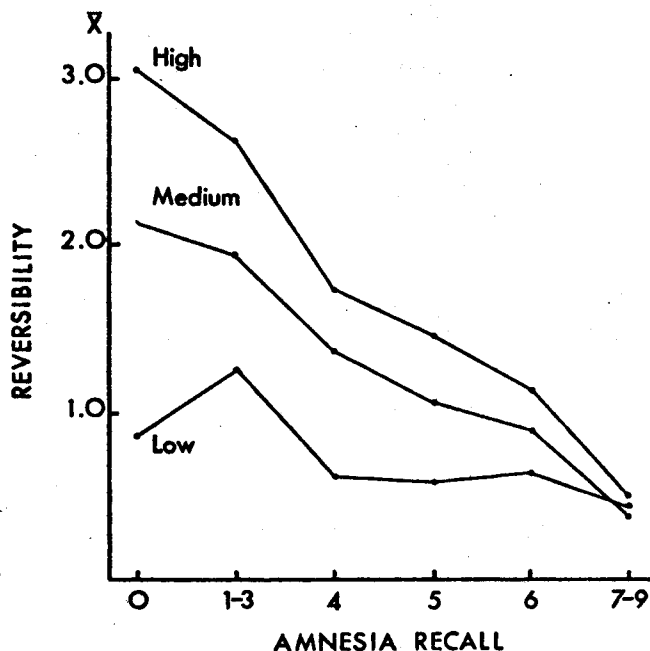


Fig. 1. Mean number of items reversed following posthypnotic amnesia as a function of number of items recalled during posthypnotic amnesia, for Ss of high, medium, and low susceptibility to hypnosis. (Total N = 691. Except for the high Ss recalling 7 - 9 items during amnesia, n = 8, all other points represent a minimum of 15 Ss.)

This study was supported in part by United States Public Health Service Grant MH 19156-03 from the National Institute of Mental Health, and in part by the Institute for Experimental Psychiatry.

Appreciation is due to C. Bendon and D. E. Berdan for help with the statistical analysis, and to H. D. Cohen, M. R. Cook, C. Graham, E. C. Orne, M. T. Orne, D. A. Paskewitz, and L. L. Pyles for their comments during the preparation of this paper. Special appreciation is due to J. M. Dittborn, P. B. Field, D. N. O'Connell, P. W. Sheehan, and R. E. Shor, who conducted several of the HGSHS:A groups, providing much of the data for the present study.

particularly concerned with those Ss who recalled 6 items or less during amnesia.

RESULTS

At each point along the continuum of amnesia scores the mean number of items recalled during reversibility was calculated separately for the three subgroups of high, medium, and low Ss. The relationship between amnesia and reversibility recall for each group is shown in Fig. 1.

It is clear that hypnotizable Ss recall more items during reversibility than do insusceptible Ss even though these groups are matched for initial recall during the amnesia condition. For all levels of amnesia from 0-6 items recalled, *t* tests showed that the hypnotizable Ss recalled significantly more items during reversibility than did insusceptible Ss (all five *t* tests were significant at least at the .01 level).

Each S was assigned a reversibility score based on an arbitrary pass-fail criterion, with those Ss who recalled more than one item during reversibility passing the item. At each point along the original amnesia distribution where comparisons could be made, a significantly greater proportion of hypnotizable Ss than insusceptible Ss passed the criterion for amnesia ($p < .001$ for each level of amnesia recall). Correlational analysis indicated that the reversibility score predicted HGSHS:A score (eliminating the amnesia item) better than the amnesia score ($p < .005$).

In summary, when groups are matched for initial recall during the amnesia test, obviating the possibility of a ceiling effect operating differentially on the groups, hypnotizable Ss recover significantly more items than do insusceptible Ss during a subsequent recall period, after the effect of the suggested amnesia has been lifted by a cue. This difference occurred even in those Ss recalling four or more items during amnesia—Ss who would normally be considered as having failed amnesia by the standard scoring criterion of HGSHS:A.

DISCUSSION

Hypnotizable Ss show an inability to recall in response to suggestions for posthypnotic amnesia. These

same hypnotizable Ss also show more recall after the amnesia has been lifted than do insusceptible Ss. This significant difference in reversibility cannot be accounted for by the initial difference in amnesia recall since it is apparent at virtually every point along the distribution of posthypnotic amnesia.

These findings provide further documentation of the construct of *partial* posthypnotic amnesia (Kilstrom & Evans, 1971). Among those Ss who do successfully recall some items during posthypnotic amnesia, despite the suggestion for *complete* amnesia, hypnotizable Ss recover more of the previously unrecalled items during reversibility than do insusceptible Ss. The presence of significant reversibility in these hypnotizable Ss indicates that they are experiencing at least the partial effects of the suggestion for posthypnotic amnesia.

Amnesia and forgetting are intertwined phenomena of memory, and their differential effects on posthypnotic amnesia are difficult to separate empirically. The phenomenon of reversibility can give some indication of whether a failure to recall is indeed temporary, or whether some other factors, including forgetting, inattention, or motivation, account for the poor recall. There are some Ss who appear to pass amnesia by the standardized criterion, even though subsequent reversibility data suggest that the recall is not in fact a function of temporary amnesia. Perhaps of greater significance are those Ss who appear to have failed amnesia until the reversibility data show that they subsequently recall even more of the critical memories after the amnesia has been lifted. These findings support the conceptual notion that posthypnotic amnesia cannot be said to occur unless the amnesia is also accompanied by reversibility.

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