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OPTIMAL SCORING OF AMNESIA ON THE HARVARD GROUP SCALE OF HYPNOTIC SUSCEPTIBILITY, FORM A[1]

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Abstract: Response to the suggestion for posthypnotic amnesia on the Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor & E. Orne, 1962) was studied in a sample of 1351 Ss. Reversibility proved to be a somewhat better criterion of response than initial amnesia, as indexed by both item difficulty and item-to-total correlations. Continuous scoring of recall, however, was no better than dichotomous scoring. A joint dichotomous criterion, consisting of recall ≤ 3 on the initial amnesia test followed by recall ≥ 2 additional items on the reversibility test, is offered as both empirically defensible and conceptually preferable.

The fact that suggested posthypnotic amnesia can be reversed by a prearranged cue marks the phenomenon as a disorder of memory retrieval and distinguishes it from ordinary forgetting, the failure to attend to and to process the critical material at the time of acquisition, and other pseudoamnesic processes (Kihlstrom & Evans, 1976; Nace, M. T. Orne, & Hammer, 1974; M. T. Orne, 1966). While reversibility is a central aspect of the concept of amnesia, in practice it has not been incorporated into the scoring of the amnesia suggestion administered during the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A) of Shor and E. C. Orne (1962; see also Shor & E. C. Orne, 1963) or the Stanford Hypnotic Susceptibility Scale, Forms A, B, and C (SHSS:A,B,C) of Weitzenhoffer and Hilgard (1959, 1962). Reversibility is considered in scoring the amnesia item of the Diagnostic Rating procedure (M. T. Orne & O'Connell, 1967), but this is not, strictly speaking, a standardized scale. It is also included in the amnesia item of the Barber Suggestibility Scale

(Barber, 1969), but that item is more selective than that of HGSHS:A, SHSS:A, SHSS:B, or SHSS:C, as it involves memory for only a single test suggestion.

The importance of counting reversibility in evaluating response to amnesia suggestions was demonstrated by Kihlstrom and Evans (1973). All 691 Ss in their study received HGSHS:A, while a subset of 391 Ss received SHSS:C. The Ss were classified according to an arbitrary criterion for reversibility by recalling two or more additional items during HGSHS:A reversibility test. Groups of Ss passing and failing this criterion were matched for recall on the initial amnesia test. The Ss showing reversibility scored higher on both HGSHS:A and SHSS:C (totals corrected by eliminating the amnesia item) and were more likely to pass the amnesia item of SHSS:C (as conventionally scored), compared to nonreversing Ss. This was the case regardless of whether or not Ss technically passed the standard criterion for initial amnesia on HGSHS:A.

The reversibility criterion employed by Kihlstrom and Evans (1973) was selected intuitively by examining the distribution of recall on HGSHS:A reversibility test. The present study was conceived as a psychometric investigation of the amnesia item, in order to compare various available scoring methods.

METHOD

The data for the present study were collected during routine screening sessions conducted over the course of 2 academic years.

Subjects

A total of 1351 male and female University of Wisconsin student volunteers received HGSHS:A administered in groups by tape recording. All Ss received credit towards the experimental participation option of their introductory psychology course.

Procedure

The HGSHS:A consists of an induction of hypnosis accompanied by suggestions for 12 representative hypnotic experiences. The last of these is a suggestion for temporary posthypnotic amnesia. After hypnosis is terminated, Ss are asked to recall, in writing, the events of the hypnosis session; then the prearranged reversibility cue is given to cancel the amnesia suggestion, and Ss are asked to recall, again in writing, anything else which they now remember but did not remember previously. Three minutes are allotted for the test of initial amnesia, and 2 minutes more for the reversibility test. These written memory reports are coded for mention of the specific test suggestions administered during HGSHS:A.

Only 9 items are considered in scoring the item: the amnesia item itself, a test of waking suggestibility, and a suggestion administered during the induction procedure, are all eliminated. According to the standard scoring procedure of HGSHS:A — which parallels that of the Stanford scales — Ss who recall 3 or fewer critical items on the test of initial amnesia are considered to have passed the amnesia item.

RESULTS

The mean HGSHS:A scale score was 7.08 ($S.D.$ = 2.49), which is comparable to other samples conducted recently under similar conditions. For purposes of the present study, the total HGSHS:A score was adjusted by eliminating the amnesia item from consideration (corrected score: $\bar{X}$ = 6.61, $S.D.$ = 2.37).

Reliability of Scoring the Amnesia Item

The recall protocols were conservatively scored, so that even vague references (e.g., "arm heavy") were counted, even though their specific referents could not always be precisely identified. A random sample of 100 Ss was scored by two independent judges. Combining the initial amnesia and subsequent reversibility tests, a total of 527 different passages were coded, with agreement between the raters in 473 of the cases (89.8% of the total) as to which of the nine critical items was being referred to. Most of the disagreements involved vague mentions of heaviness of limbs and eye closure, which could have referred to any of a number of test suggestions, as well as to events occurring during the induction and termination procedures (e.g., Kihlstrom & Evans, 1978). Considering the number of items recalled, the correlation between the two judges was .98 (p <.001) for the initial amnesia test and .88 (p <.001) for the reversibility test. The slightly diminished interjudge reliability of the reversibility test primarily reflected disagreement over how to count items clearly recalled on the reversibility test that might have been referenced in the vague, generic memories often reported on the test of initial amnesia.

Correlation of Recall with Hypnotizability

The mean number of items recalled on the test of initial amnesia was 3.29 ($S.D.$ = 2.37); recall correlated −.14 with corrected HGSHS:A scores. The distribution of recall was bimodal, with peaks at four and zero items recalled. Corresponding figures for the reversibility test were: $\bar{X}$ = 1.44 ($S.D.$ = 1.53, r = .29). This distribution was unimodal, peaking at zero items recalled. Given the sample size, both correlations were statistically significant (p <.001), although the correlation involving reversibility

TABLE 1

COMPARISONS OF DICHOTOMIZED SCORING CRITERIA FOR TESTS OF INITIAL AMNESIA
AND REVERSIBILITY

Variable	Criterion for Passing Test								
Initial Amnesia	=0	≤1	≤2	≤3	≤4	≤5	≤6	≤7	≤8
% Passing	22.4	27.0	34.2	48.6	65.5	81.9	93.5	98.0	99.5
r	.06	.10	.10	.14	.12	.11	.07	.09	.08
p	.05	.001	.001	.001	.001	.001	.005	.001	.001
Reversibility	≥1	≥2	≥3	≥4	≥5	≥6	≥7	≥8	=9
% Passing	64.8	40.0	21.0	10.8	5.4	2.2	0.2	0.1	0.0
r	.22	.25	.23	.22	.18	.11	.05	.05	—*
p	.001	.001	.001	.001	.001	.001	.05	.05	—*

*No Ss met this criterion; therefore, correlation cannot be calculated.

was significantly higher than the one involving initial amnesia (t = 5.62, df = 1348, p <.001). Recall on the two tests was significantly correlated (r = −.28, p <.001).

Dichotomized Scoring of Amnesia and Reversibility

With a pool of nine available items, the distributions of recall on the initial amnesia and reversibility tests can be dichotomized at nine different points (initial amnesia: recall = 0 versus recall ≥ 1, recall ≤ 1 versus recall ≥ 2, etc.; reversibility: recall ≥ 1 versus recall = 0, recall ≥ 2 versus recall ≤ 1, etc.). Separate item-to-total correlations were calculated for initial amnesia and reversibility employing each of the nine possible dichotomous scoring procedures. Table 1 gives these correlations and the percentage of Ss passing the item according to each criterion. For initial amnesia, these ranged from r = .06 to r = .14 (all p <.05), with the highest obtained with a criterion of recall ≤ 3 (r = .14, p <.001; pass percent = 48.6). For reversibility, the range was from r = .05 to r = .25 (all p <.05), with the peak at recall ≥ 2 (r = .25, p <.001; pass percent = 40.0). The maximum item-to-total correlation for reversibility was significantly higher than that for initial amnesia (t = 3.10, df = 1348, p <.001).

Joint Dichotomous Criterion for Reversible Amnesia

A similar analysis was performed to select the optimal joint dichotomous criterion of reversible amnesia. The item pass percents and item-to-total correlations were calculated for eight potential criteria representing all possible combinations of two cut-points for initial amnesia (recall ≤ 3 and ≤ 4) and four cut-points for subsequent reversibility (recall = ≥ 1, ≥ 2, ≥ 3, and ≥ 4 new items). Three dichotomous criteria emerged as clearly

superior to the others: amnesia recall $\leqslant$ 3 and reversibility recall $\geqslant$ 2 (24.9% passing the criterion, item-to-total r = .22, p <.001); $\leqslant$ 3 and $\geqslant$ 3 (16.3% pass, r = .23, p >.001); and $\leqslant$ 3 and $\geqslant$ 4 (9.8% pass, r = .23, p <.001). The differences among the three item-to-total correlations are trivial, so a choice among them has to be made on other grounds. A criterion of initial recall $\leqslant$ 3, subsequent reversibility $\geqslant$ 2 is consistent with the results of the earlier selection of separate dichotomous criteria for initial amnesia and reversibility; it considerably reduces the percentage of Ss passing the amnesia item without pushing the item to the vanishing point, and it brings the item pass percent for amnesia into line with those of the other two items representing the cognitive factor of HGSHS:A (fly hallucination, 22.6%; posthypnotic suggestion, 31.4%). With this new scoring of the amnesia item, the mean full-scale HGSHS:A score was reduced to 6.81 ($S.D.$ = 2.49).

DISCUSSION

The present study evaluated five methods for scoring response to the amnesia suggestion item of HGSHS:A. Reliance solely on the test of initial amnesia, whether scored continuously or dichotomously, seems difficult to justify on either conceptual or empirical grounds. A S who recalls two items on initial amnesia but nothing further on reversibility is not clearly amnesic. Sole reliance on the reversibility test, as advocated by Radtke and Spanos (1981), is more defensible on psychometric grounds: the pass percent is somewhat lower, and the item-to-total correlation (scored continuously or dichotomously) is somewhat higher. Reversibility alone, however, poses the same interpretive ambiguities as initial amnesia. It is not clear that a S who recalls five items on initial amnesia and two more on reversibility is showing the same degree of amnesia as a S who recalls no items initially but two later on. In the final analysis, both the initial failure to remember and the subsequent recovery of memory are central features of posthypnotic amnesia. Unfortunately, considering both features does nothing to enhance the item-to-total correlation, a result anticipated by Nace et al. (1974). But so long as the reliability is not *diminished*, the joint criterion appears preferable on conceptual grounds.

Even so, the low level of total recall, and low (if statistically significant) correlations between the revised scoring and performance on the rest of the scale, suggests that this index remains contaminated by a variety of factors in addition to suggested amnesia. Not the least of these may be a misunderstanding of the amnesia query, so that many Ss spend part or all of their time reporting incidental experiences rather than the critical suggestions. On the individually administered Stanford scales (Hilgard, 1965), which employ the same standardized amnesia criterion as HGSHS:A,

but which also permit the E to catch and correct such misunderstandings, the pass percents are considerably lower (27% to 32%), and the item-to-total correlation is substantially higher (r = .69 to .85). The HGSHS:A is an efficient and economical instrument for preliminary screening, and a suitable vehicle for limited experimental purposes, but it cannot — nor was it intended to—replace the individually administered Stanford scales for purposes of measurement.

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Optimales Erzielen einer Amnesie am Harvard-Gruppenmaßstab für Hypnoseempfindlichkeit, Form A

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Abstrakt: An einem Muster von 1351 Vpn. wurde die Reaktion auf die posthypnotische Amnesiesuggestion am Harvard-Gruppenmaßstab für Hypnoseempfindlichkeit, Form A (Shor & E. Orne, 1962) studiert. Reversibilität erwies sich als ein etwas besseres Reaktionskriterium als die ursprüngliche Amnesie — durch Beziehungen zwischen Schwierigkeiten am Einzelteil und Einzelteil zum Ganzen registriert. Das fortlaufende Notieren des Rückrufs war jedoch nicht besser als ein dichotomisches Notieren. Ein gemeinsames, dichotomisches Kriterium, das sich aus Rückruf(≤3 an dem ursprünglichen Amnesietest, dem Rückruf von) ≥2 zuzüglichen Elementen am Reversibilitätstest folgt, zusammensetzt, wird sowohl als empirisch verfechtbar wie auch konzeptionell bevorzugt empfohlen.

Résultat maximum d'amnésie à l'Echelle d'hypnotisabilité de groupe de Harvard,
forme A

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Résumé: Les réponses de 1351 sujets, à la suggestion posthypnotique d'amnésie, incluses dans l'Echelle d'hypnotisabilité de groupe de Harvard, forme A (Shor et E. Orne, 1962), ont été étudiées. Les corrélations portant sur la difficulté des items et sur la relation item-au-total de l'échelle montre que la réversibilité est un meilleur critère de réponse que l'amnésie initiale. La mesure continuelle du rappel toutefois, n'est pas meilleure que la mesure dichotomique. Un critère dichotomique combiné, bâti avec un rappel inférieur à 3 sur le test de l'amnésie initiale suivi d'un rappel plus grand ou égal à 2 sur des items supplémentaires du test de réversibilité est présenté comme empiriquement défendable et théoriquement préférable.

Puntaje óptimo de la amnesia en la Harvard Group Scale of Hypnotic Susceptibility:
Form A

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Resumen: En una muestra de 1351 sujetos se estudió la respuesta a la sugestión de amnesia posthipnótica de la Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor y E. Orne, 1962). La reversibilidad demostró ser un mejor criterio de respuesta que el de la amnesia inicial, como lo indicó el ítem de dificultades y las correlaciones de todos los ítems. Sin embargo, el puntaje continuo del recuerdo no fué mejor que el puntaje dicotómico. Se propone un criterio dicotómico de conexión, que parece sustentable y conceptualmente preferible, consistente en recuerdo ≤3 en el test de amnesia inicial seguido por recuerdo ≥2 en los ítems adicionales del test de reversibilidad.