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A Historical Overview of Hypnotizability Assessment

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The development of scales for assessing hypnotic suggestibility is reviewed. Nineteenth century origins are discussed along with examples of scales. Next, research measures developed and published in the first half of the 20th century are reviewed, followed by an overview of scales in current use. This overview attempts to show how past conceptions and scales have influenced current measurement methodology.

Since the days of Mesmer, theorists and practitioners have recognized that hypnosis involves considerable individual variability. Within the individual, different levels of hypnosis seem to manifest themselves during a session, and across individuals pronounced differences in responsiveness can be observed. As a consequence, concepts such as stages of hypnosis, hypnotic depth, and hypnotic susceptibility have strongly influenced the theory, practice, and measurement of hypnosis throughout its history (Edmonston, 1986). It should also be recognized that historical, social, and contextual factors have shaped our conceptions of hypnosis and its measurement (Spanos & Chaves, 1991).

Early Scales

Mesmer and his student, Puységur, described two basic stages of hypnosis, and later 19th century theorists described up to twelve or more stages of hypnosis (Edmonston, 1986; LeCron & Bordeaux, 1947; Hilgard, Weitzenhoffer, Landes, & Moore, 1961). The notion that hypnosis occurs in successive stages, marked by distinct transitions and characteristic symptoms, was adopted by Charcot and his co-workers, and has had a continuing influence on measurement (Hilgard, Weitzenhoffer, Landes, & Moore, 1961).

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At first, these stages were not tied to individual differences, although it was certainly recognized that relatively few people could reach the deepest stage of hypnosis, somnambulism. Somnambulism was important because mesmerists believed that subjects in this stage attained supernatural powers (Edmonston, 1986). Somnambulists were thought to transcend the ordinary senses and to be able to provide physicians with diagnoses and treatments for other patients; accordingly, early depth scales included stages of deep hypnosis in which clairvoyance was attained. Edmonston (1986) presents a number of early 19th century scales in which the deepest stages of hypnosis were distinguished by supernatural powers. A representative classification system is that of Colquhoun (1836, cited in Edmonston, 1986), which describes the following stages of hypnosis: The *first* degree, or waking; the *second* degree, in which vision is impaired; the *third* degree, or *magnetic* sleep, a state of unconsciousness; the *fourth* degree, or *simple somnambulism*, between sleeping and waking states; the *fifth* degree, in which the patient can perceive the internal processes of himself and others, which enables accurate medical diagnosis and prescription of treatments; and the *sixth* degree, *lucid vision*, in which clairvoyance is attained. Edmonston (1986) notes that these stages form a continuous progression, such that early stages must be attained before later ones can be attained, and that Colquhoun believed that not all individuals could attain the more advanced stages.

Later in the 19th century, mesmerism gave way to modern medicine, and neurophysiological explanations of hypnotic responsivity gained precedence. In particular, research and practice by prominent neurologists like James Braid and Jean-Martin Charcot resulted in a catalog of hypnotic phenomena that mimicked the symptoms of neurological disorders (Spanos & Chaves, 1991; Wagstaff, 1981). Although Braid viewed hypnosis as being within the range of normal human experience, Charcot believed that high hypnotizability was a sign of neuropathology.

As "symptoms" such as amnesia and hallucinations became diagnostic of hypnosis, they were used informally to gauge individual differences in hypnotizability. Later, they were institutionalized in hypnotizability scales (Spanos & Chaves, 1991). Thus, items on major measures are labeled as "amnesia," "anosmia," "catalepsy," "hallucination," etc. It is noteworthy that the early 19th century scales of hypnotic depth reviewed by Edmonston (1986) failed to mention most of these symptoms. Instead, the more advanced stages of hypnosis were marked by what could be called lucidity or expanded consciousness.

Late Nineteenth Century Measures of Hypnotizability

Edmonston (1986) and Hilgard, et al. (1961) provide excellent histories of hypnotic responsivity measures during the latter half of the 19th century. Important scales were proposed by Liebeault and Bernheim around 1890. These scales rated progressive levels of hypnotic "depth," based on the assumption that responding to different types of suggestions required differing levels of hypnosis. Thus, certain kinds of suggestions could discriminate between persons who could attain varying degrees of hypnotic depth (Weitzenhoffer, 1953).

Ratings tended to be based on classes of events rather than specific tests, and a great deal of weight was placed on nonsuggested posthypnotic amnesia. Procedures were not standardized, and the definition of "suggestion" varied considerably (Hilgard

et al., 1961). Nevertheless, thousands of subjects were tested, and the distributions are in fairly good agreement with findings from more modern scales (Hilgard et al., 1961).

Twentieth Century Measures

The next significant developments in measuring hypnotizability started around 1930, when scales were published by M.M. White (1930), Davis and Husband (1931), and Barry, MacKinnon, and Murray (1931). Later, important measures were developed by Friedlander and Sarbin (1933), Eysenck and Furneaux (1945), LeCron and Bordeaux (1947), and Watkins (1949). The most widely used were the scales by Davis and Husband, and Friedlander and Sarbin.

The *White Scale* (White, 1930), although not widely used, was notable for prompting a new interest in hypnotic suggestibility, as well as for using a quantitatively scored series of specific suggestions graded from easy to difficult (Hilgard, 1965). The features of arranging suggestions in order of difficulty, as well as scoring based on observable behavior, have been retained in most subsequent scales. White's scale (White, 1930, pp. 294-295) consisted of the following challenges to the subject:

1. Move fingers after they were suggested to become stiff.
2. Count to "4," but leave out "3" because you cannot say "3."
3. Say the alphabet as far as "F," but leave out "D" because you cannot say 'D."
4. Open your eyes and see a gray cat in your lap. Pet it. After the cat is removed, brush the fur from your lap.
5. Hear a woman singing "America." Acknowledge that you hear her singing.
6. Not be able to feel anything in your hand. (A pencil was placed in the hand and the subject was asked whether anything was in the hand.)
7. Take a pencil and write your name on a piece of paper. Leave out all the vowels in your name because you cannot write any vowels.
8. Add columns of numbers as accurately and rapidly as possible. (Two trials were presented. The case history of a neurotic was read during the second trial.)
9. A posthypnotic suggestion was given for the subject to see a book on the table and place the book on a chair after a signal from the hypnotist.

The *Davis and Husband Scale* (Davis & Husband, 1931) was practical and covered a wide range of hypnotic behaviors. Prior to the development of the Stanford scales, it was the most widely used hypnosis scale (Edmonston, 1986). However, it did not meet even minimal standards for scientific acceptability (Barber, 1969; Weitzenhoffer, 1953). The major problem with this scale was that it failed to specify standard test suggestions or explicit criteria to determine whether suggestions were passed or failed.

Like its 19th century predecessors, this scale assigned ratings of hypnotic depth based on the appearance of classes of responses thought to indicate various levels of hypnotic depth. It began with an eye-fixation induction, and progressed through tests indicating four stages of hypnotic depth:

1. *Insusceptible.* Relaxation only obtained.
2. *Hypnoidal*. Indicated by fluttering of lids through eye catalepsy.
3. *Light trance*. Indicated by limb catalepsies through post-hypnotic anesthesia.
4. *Medium trance*. Indicated by personality changes through posthypnotic amnesia and "complete somnambulism."
5. *Somnambulistic*. Indicated by posthypnotic positive visual hallucinations through negative visual hallucinations and hyperesthesias.

The *Barry, McKinnon, and Murray Scale* (1931) was published as part of their paper on hypnotizability as a personality trait. Barry McKinnon and Murray (1931) did not have a standard scripted induction, but described it as including eye-fixation, suggestions for relaxation, and physical stroking/pressure on the forehead. The scale itself was based on five specific suggestions, each of which challenged the hypnotized person to overcome a suggested effect. These included not being able to open one's eyes, raise the arm, bend the arm, separate interlocked fingers, and speak one's name. Barry et al.'s scoring system emphasized suggested posthypnotic amnesia as well as the inability to overcome the challenges. It ranged from "0" (no tendency at all to carry out suggestions) to "2" (two or three suggestions carried out) to "3" (all suggestions carried out). Amnesia was also scored, ranging from "0" (no loss of memory and no difficulty of recall) to "2" (complete or almost complete loss of memory).

The *Friedlander-Sarbin Scale* (1938) combined features of both the Davis-Husband scale and the Barry, et al. (1931) scale. This scale was much better than its precedents for research, since it employed standard procedures, items, and scoring. These included a scripted-out induction procedure, and a specific set of test suggestions with standardized scoring criteria. Friedlander and Sarbin's (1938) scoring included the time taken for eye closure during the induction, based on Hull's (1933) research. They also included the same five challenge suggestions as Barry, et al. (1931), as well as a hallucination item taken from Davis and Husband (1931). Each item was scored by the researcher, based on behavioral observations. Friedlander and Sarbin (1938) reported normative and reliability data-based on 109 participants. The distribution was negatively skewed, with over 70% of the participants obtaining less than half of the possible points. Test-retest reliability was quite satisfactory, about $r = .80$, and no gender differences were noted.

The induction procedure was very similar to that of the Stanford scales. The Friedlander-Sarbin suggestions and scoring were also very similar to those of the current Stanford scales. The suggestions consisted of:

1. *Eye closure*. Eyes close during induction.
2. *Eye catalepsy*. The eyes were suggested to be tightly shut, glued together, glued together, so they could not be opened. Then the subject was challenged to open the eyes.
3. *Arm heaviness*. The left arm was suggested to be as heavy as lead. Then the subject was challenged to try to raise the arm.
4. *Arm rigidity*. The right arm was extended and suggested to be rigid and stiff so it could not bend. The subject was challenged to try to bend the arm.

5. *Finger clasp*. The fingers were interlocked and suggested to be tightly interlocked so they could not be separated. The subject was challenged to try to separate the fingers.
6. *Agnosia*. The subject was told, "No matter how hard you try you cannot say your name." The subject was challenged to say his or her name.
7. *Posthypnotic amnesia/suggestion.* The suggestion was made to remember nothing of what happened after the termination of hypnosis. After awaking, the subject would hear someone calling his or her name.

To be complete, two other scales should be noted; however, they were not nearly as popular as the Davis and Husband (1931) and Friedlander and Sarbin (1938) scales (Edmonston, 1986). The *LeCron and Bordeaux* (1949) scale was developed to tap a wider range of hypnotic behaviors than existing scales. It contained a list of 50 symptoms or phenomena, which were scored 2 points apiece if present. The scale items were apparently arranged in order of difficulty, since they are clustered in groups ranging from *insusceptible* and *hypnoidal* to *light, medium*, and *deep* trance, ending in *plenary* trance, a condition in which all spontaneous activity is absent. However, LeCron and Bordeaux (1949) did not present normative data and did not justify their particular ordering of items. *Eysenck and Furneaux's* (1945) scale was developed for a specific investigation of primary and secondary suggestibility. It included items related to eye closure, relaxation, catalepsy, hallucinations, and amnesia. Although the items were similar to those of other scales, it was only used in the authors' own research.

Scales in Current Use

The Stanford Scales

In 1957, Ernest Hilgard, Andre Weitzenhoffer, and their colleagues at Stanford University began a major study of hypnotic responsivity that made Stanford one of the foremost centers for hypnosis research in the world. Their initial research used a modification of the Friedlander-Sarbin scale, which at the time was the most widely used scale (Edmonston, 1986). However, the need for a revised measure soon became evident. Problems included a bimodal distribution, too many extremely low scores resulting in a skewed distribution, inadequate norms, and lack of alternate forms (Hilgard, 1965; Hilgard, et al., 1961).

Weitzenhoffer and Hilgard refined and expanded the Friedlander-Sarbin scale, adding easier items to spread out the distribution of scores. In addition, scoring was simplified and two alternate forms were devised to permit repeated measures without contamination from practice effects. The result was the *Stanford Hypnotic Susceptibility Scale, Forms A and B* (SHSS:A,B; Weitzenhoffer & Hilgard, 1959).

The first Stanford scale, although a major advance in the measurement of hypnotic responsivity, had limited usefulness since the content predominantly consisted of simple motoric items. Furthermore, it did not seem sensitive to differences among the most responsive subjects (Hilgard, 1965; Perry, Nadon, & Button, 1992). In order to more fully represent the cognitive aspects of hypnosis, as well as the high end of hypnotic responsivity, the Stanford researchers developed the *Stanford Hypnotic Susceptibility Scale, Form C* (SHSS:C; Weitzenhoffer & Hilgard, 1962). The hypnotic induction and general structure of the SHSS: C are quite similar to those of the SHSS:A

and B scales. Although it retains the same format and number of items as the earlier scales, the SHSS:C includes new items that more fully assess the subject's ability to experience distortions of perception and memory during hypnosis. The SHSS:C also differs from the SHSS:A in presenting the items more or less in order of increasing difficulty. Finally, to meet the need for a scale to differentially assess the abilities of good hypnotic subjects, Weitzenhoffer and Hilgard (1967) developed the *Stanford Profile Scales of Hypnotic Ability, Forms I and II* (SPS:I & II). In contrast to the other Stanford Scales, the purpose of the Stanford Profile Scales is not to obtain a single global score, but rather generate a profile of hypnotic abilities.

The format and item content of the Stanford scales has proven so useful that a number of extensions have been developed for special purposes and populations. One of the first was the *Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A*; Shor & Orne, 1962), which was derived from the SHSS:A and shares many items. Besides the HGSHS group version, Bowers (1993, 1998) developed a group version of the SHSS:C, the Waterloo-Stanford Group Scale of Hypnotic Susceptibility, which is examined in this issue by Moran, Kurtz, and Strube (2002). Hilgard and Hilgard (1975, 1979; Morgan & Hilgard, 1978-1979a) have published a clinical adaptation of the Stanford scales which draws on item content from the A, B, and C forms. London (1963, 1965; London & Cooper, 1969) has developed a children's version of the Stanford A and B scales, while Morgan and Hilgard (1978-1979b) published an adaptation for clinical use with children.

The Barber Suggestibility Scale

The *Barber Suggestibility Scale* (BSS) was originally developed for a series of studies designed to isolate the factors determining responsiveness to hypnotic suggestions (Barber, 1965; Barber & Glass, 1962). These experiments required a procedure that was quick, easy, required no special equipment, could be defined either as hypnosis or as a test of imagination, and could be administered with or without a hypnotic induction (Barber & Wilson, 1978-1979). The scale also had to be reliable and assess both objective behavior and subjective experience. Since the existing Stanford scales required a hypnotic induction and did not include subjective scores, the development of a new scale was necessary (Barber, 1965). In its final form, the BSS has all of the desired features. The BSS is suitable for children as well as adults (Edmonston, 1986), making it one of the most flexible and convenient scales available.

Carleton University Responsiveness to Suggestion Scale

Like the BSS, this scale comes out of the sociocognitive tradition of hypnosis research. Thus, the CURSS stands in a similar relation to the BSS as the HGSHS:A does to the SHSS:A —a group scale that superceded its predecessor due to the convenience and economy of group administration. Its brevity, flexibility, and strong psychometric characteristics should make this scale attractive to both researchers and clinicians. Although its acronym reflects Spanos' sense of humor and somewhat irreverent attitude toward hypnosis, the construction and associated psychometrics of the CURSS reflect his rigorously scientific approach. The CURSS has been described, with accompanying psychometric, normative, and validity data, in several publications (Spanos, Radtke, Hodgins, Bertrand, Stam, & Dubreuil, 1983; Spanos, Radtke, Hodgins, Bertrand, Stam, & Moretti, 1983; Spanos, Radtke, Hodgins, Stam, & Bertrand, 1983).

It was also used extensively in Spanos' research program, of which many publications are referenced in Spanos' book, *Multiple Identities and False Memories: A Sociocognitive Perspective* (1996). The CURSS was never published, although Spanos made it freely available to those who requested copies. As a brief scale well suited to a variety of applications, the CURSS deserves wider recognition. Unfortunately, Spanos' untimely death in 1994 may prevent this scale from receiving the attention it deserves.

The Creative Imagination Scale

T.X. Barber and Sheryl Wilson developed the CIS as an alternative to scales like the BSS and Stanford scales, which employ an authoritarian approach and direct suggestions (Barber & Wilson, 1979; Wilson & Barber, 1978-1979). Wilson and Barber (1978-1979) argue that the hypnotic inductions and suggestions in older scales derived from a culture in which doctors took a much more authoritarian approach to their patients. The CIS presents the experience of responding to suggestions as being under the individual's control, generated through creative thinking and imagining along with the suggestions. Rather than telling a participant what to do, the CIS administrator takes the role of a guide or coach. Due to its unique approach, the CIS may be particularly useful for persons who are apprehensive about hypnosis or fearful of losing control.

Hypnotic Induction Profile

The *Hypnotic Induction Profile* (HIP; Spiegel & Spiegel, 1978) is unique among hypnotizability scales for several reasons. First, it was developed in a clinical setting for clinical applications, although its authors have always stressed the importance of empirical validation. According to Spiegel and Spiegel (1978), measures like the Stanford scales have important shortcomings for clinical assessment. They are too long and may tire a patient. In addition, the range of hypnotic phenomena sampled may be inappropriate or embarrassing, and the instructions for "sleep" and relaxation interfere with a patient's active involvement in therapeutic procedures.

The most unique and controversial aspect of the HIP is its "eye-roll" test, theorized to indicate a person's biologically-based capacity for trance (Spiegel & Spiegel, 1978). The eye-roll is measured by the amount of sclera visible between the bottom of the iris and the lower eyelid, when a person is asked to roll his or her eyes upward. A number of studies have failed to support a relationship between the eye-roll sign and conventional measures of hypnotizability like the Stanford scales (e.g., Sheehan, Latta, Regina, & Smith, 1979; Orne, Hilgard, Spiegel, et al., 1979). Accordingly, more recent versions of the theory present the eye-roll as a measure of a client's potential to experience hypnosis, which can be decreased by psychological, neurological, or other factors.

According to Stern, Spiegel, and Nee (1979), the HIP has three complementary purposes in clinical work: to measure clinically useful hypnotizability, to identify persons with relatively severe psychopathology, and assess general personality style. It consists of the eye-roll measure and responses to a procedure that combines hypnotic induction and arm levitation. The degree of arm levitation is objectively scored and combined with other ratings, including posthypnotic arm levitation and subjective ratings obtained after hypnosis. These ratings are summed for an *induction score*,

which corresponds to the additive scores used in traditional measures like the Stanford scales. The other summary score is the *profile score*. The profile score categorizes examinees by comparing their eye-roll to other scores, and is presumed to indicate the extent to which a person is realizing his or her inborn potential for hypnosis (Spiegel & Spiegel, 1978).

Conclusion

This historical overview of hypnosis scales has attempted to show that our current scales have a significant heritage. In fact, if attempts to measure hypnotizability began in the early 19th century, these scales should be counted among the earliest psychological measures. This should be cause for both pride and concern. Pride, because hypnosis has been a pioneer in psychological measurement, but concern because outmoded conceptions of hypnosis and hypnotizability have influenced our measurement methodology. Scales in current use may or may not be measuring the construct of hypnotizability as it is currently understood. This question is certainly beyond the scope of this article. In any case, an appreciation of the historical underpinnings of hypnosis measures seems essential to a science of hypnosis. If this article leads anyone to think more critically about the scales they are using, it will be a success.

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