

Suggestibility, Expectancy, Trance State Effects, and Hypnotic Depth: I. Implications for Understanding Hypnotism

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Abstract

This paper reviews the relationships between trance or altered state effects, suggestibility, and expectancy as these concepts are defined in the theorizing of Weitzenhoffer (2002), Holroyd (2003), Kirsch (1991), and others, for the purpose of demonstrating how these concepts can be assessed with the PCI-HAP (Phenomenology of Consciousness Inventory: Hypnotic Assessment Procedure; Pekala, 1995a, b). In addition, how the aforementioned variables may relate to the nature of hypnosis/hypnotism as a function of self-reported hypnotic depth are discussed, along with how the PCI-HAP may be used as a means to measure hypnotic responsivity from a more phenomenological *state* perspective, in contrast to more traditional behavioral *trait* assessment instruments like the Harvard, the Stanford C, or the HIP. A follow-up paper (Pekala, Kumar, Maurer, Elliott-Carter, Moon, & Mullen, 2010) will present research data on the PCI-HAP model and how this model can be useful for better understanding hypnotism.

Keywords: Altered states of consciousness, consciousness, expectancy, hypnosis, hypnotic depth, hypnotism, psychophenomenology, suggestibility, trance.

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What is Hypnosis/Hypnotism?

This is a question that has haunted the scientific investigation of hypnotism since its inception with Mesmer over 200 years ago. To address this question, this paper reviews relevant concepts that various theorists have proposed are related to hypnosis/hypnotism and then shows how these concepts can be assessed with an instrument developed to measure hypnotic responsivity from a more phenomenological perspective than has traditionally been done in the past.

In recent decades prominent views concerning the nature of hypnosis have variously stressed alterations in consciousness, the use of imagination and fantasy, and suggestion and expectancy (Baker, 1990). The fact that hypnosis seems to involve various different processes has suggested to some researchers that hypnosis is really a pluralistic phenomenon subsuming several different domains. Such a conclusion was endorsed by Wagstaff over 25 years ago:

Having spent some years studying the literature on hypnosis I had to admit that no single “mundane” concept seemed capable of explaining all hypnotic effects. . . . Instead, we might have a collection of phenomena bound together in name only by the term ‘hypnosis,’ but which demand a number of different explanations (Wagstaff, 1981, p. ix).

Consistent with Wagstaff’s view, Brown and Fromm (1986) in their classic text, *Hypnotherapy and hypnoanalysis*, defined the “domain” of hypnosis as composed of three aspects: altered states of consciousness (trance), expectation and suggestibility, and the hypnotic relationship.

The view that more than one concept is required for understanding hypnosis has been echoed by Kihlstrom (2003), when he suggested that as hypnosis moves into the 21st century, we must move from monolithic to pluralistic approaches to hypnosis. Given the complexity of the phenomenon of hypnosis, “each of us will work out a part of the puzzle, a puzzle that has intrigued psychology from the time of James, and Freud, and Pavlov, to now” (p. 183).

A somewhat similar pluralistic approach was offered by Woody, Barnier, and McConkey (2005) when they discussed their notion of “multiple hypnotizabilities.” They reported evidence of a general hypnotizability factor and four specific factors: direct motor, motor challenge, perceptual-cognitive, and post-hypnotic amnesia. Thus, there is a general skill and several component subskills needed to respond to different types of hypnotizability test items. They concluded that “(O)ur perspective on hypnotizability is that each distinguishable ability involves the combination of general hypnotizability with a more specific, unique component” (p. 210), suggesting that these four different components involve “feelings of knowing” that are “qualitatively distinct from one another” (p. 210), and yet combine with a general hypnotizability factor.

The notion of a plurality of factors influencing hypnotic response has contributed to disagreements as to what hypnosis is and how to define and assess it. This conundrum concerning definition was addressed by Nash (2005): “When we fail to make the distinction between procedure and product in our field, we compromise discourse where clarity is at a premium” (p. 267): “Ironically, our field has not even come to grips with the word hypnosis . . . The terms *hypnosis* and *hypnotized* are both ambiguous, sometimes meaning “a procedure” and sometimes meaning “the product of a procedure” (p. 267). “The field deserves an optimally heuristic definition (of hypnosis) that preserves pluralism . . . “ (p. 265).

Weitzenhoffer (2002), also concerned about having a good definition of hypnosis, distinguished between *hypnosis* and *hypnotism*: “I will otherwise generally reserve the term *hypnosis* for the state, and the term, *hypnotism*, for the production, study and use of suggestion with the state of hypnosis presumably being present, whether or not it adds anything tangible to the situation” (p. 210). Weitzenhoffer considered *hypnotism* to be a result of a combination of *suggestibility* and “*hypnosis*” or *trance state* effects. (For the purposes of this article we will adhere to Weitzenhoffer’s distinction between hypnosis and hypnotism.)

Hypnotic Depth

Another important issue in understanding hypnotism concerns defining and understanding the notion of hypnotic depth. Hypnotic suggestibility or susceptibility is usually meant to define how responsive a person is as assessed by the passing of various items on hypnotizability tests, such as the Harvard Group Scale of Hypnotic Susceptibility: Form A (Shor & Orne, 1962), the Stanford Scale of Hypnotic Susceptibility: Form C (Weitzenhoffer & Hilgard, 1962), or the Hypnotic Induction Profile (HIP; Spiegel & Spiegel, 2004). Hypnotic depth is a different construct.

Tart (1970, 1979) regarded hypnotic depth as a theoretical construct inferred from the subject’s experiential and behavioral responses to hypnotism. He regarded hypnotic depth as “a momentary state of the S [subject] along some dimension of ‘profundity’ of the hypnotic state” (1970, p. 105). Integrating Tart’s (1979) work on hypnotic depth with their own, Brown and Fromm (1986) suggested that subjects “feel more deeply hypnotized” to the extent that (a) they believed there were alterations in subjective experience during hypnotism, and (b) they were responsive to the suggestions.

Over 75 years ago, Davis and Husband (1931) described a point system to measure depth of trance. LeCron (1953) was possibly the first to use a simple self-report, single-item scale to experientially measure hypnotic depth. He asked his subjects to enumerate during hypnotism, using numbers from 1 to 100, their depth of trance when asked, “How deep are you?” Other systems have also been offered, with 40-point, 4-point, and 10-point anchors (see Brown & Fromm, 1986). Tart’s (1970) review of hypnotic depth scales delineated six self-report scales anchored on a “1 to 10” or a “0 to 100” point system.

Over 20 years ago Laurence and Nadon (1986) suggested that the elucidation of “hypnotic depth is a complex task involving the interaction of experiential, cognitive, and contextual variables” (p. 215). Weitzenhoffer (2002) in his classic paper, “Scales, scales, and more scales,” noted that hypnotic depth scores are “lacking in solid evidence” (p. 214), due to problems with demand characteristics (Orne, 1962), and problems with such introspective self-reports. In contrast, and in support of self-report depth scales, Wagstaff, Cole, and Brunas-Wagstaff (2008) suggested that depth scales may serve as a useful alternative to conventional suggestion-based tests of hypnotizability: “they correlate well with conventional suggestion-based measures and enable the presence of hypnosis to be indexed independently of formal hypnotic induction procedures” (p. 119). Wagstaff et al., suggested that such self-report depth scales are less confounded by nonhypnotic suggestibility, and allow for the estimation of being hypnotized in ostensible nonhypnotic contexts. The PCI-HAP (see below) generates a self-reported hypnotic depth (srHD) score, somewhat similar to measures of hypnotic depth like that of LeCron (1953), Tart (1970, 1979) or Wagstaff et al. (2008). However, it also generates a *hypnoidal state* score that we believe is less prone to “distortion from response sets and demand characteristics” (Wagstaff et al., 2008, p. 127) with which such self-report hypnotic depth measures are usually prone, due to the nature of the phenomenology that the hypnoidal state score is measuring.

Trance State/Altered State Effects and Hypnosis/Hypnotism

The term *trance* is often used interchangeably with the term *hypnosis*. Weitzenhoffer (1989) pointed out that there has been a tendency to use the term *trance* as synonymous with *hypnosis* since the time of Braid, but especially so in modern times. *Trance* appears to be a much broader and older concept than *hypnosis* according to Weitzenhoffer, and “denotes various states of being that have the appearance of consciousness but seem to differ from normal consciousness. . . as being a sleeplike, or a half awake, half asleep state” (1989, p. 298).

Weitzenhoffer also suggested that some writers have equated both *hypnosis* and *trance* because both are “frequently defined as altered states of consciousness” (p. 300). Additionally, he reported that it is not unusual for individuals, said to be hypnotized, to “describe themselves in a state of altered perception of themselves and the world” (p. 300).

The question as to how much of hypnotic behavior is due to an “altered or trance state of consciousness” is a controversy that has raged for decades. Lynn and Kirsch (2006) have succinctly summarized the controversy. State theorists, like Hilgard (1977), Bowers (1992), Kihlstrom (2003), Woody (Woody & Bowers, 1994), Gruzelier (1996), and Tart (1979), generally espouse some variant of altered state effects or a “special process” (Spanos, 1982) as necessary for understanding *hypnosis/hypnotism*. In contrast, nonstate theorists, like Sarbin (1950), Barber (1969), Spanos (1991), Lynn (1997), and Kirsch (1991), suggest that “subjects’ beliefs, expectations, and imaginings about *hypnosis*, and their interpretations of the suggestions of the hypnotist, are sufficient to explain hypnotic response” (Pintar & Lynn, 2008, p. 126). That is, one does not have to imply an altered state to explain so called hypnotic behavior; rather such behavior can more simply be explained as some aspect of expectancy and social interaction. A major problem concerning the theorizing of both of these groups of theorists/researchers is that they are inferring or alluding to altered state or special process effects, but such effects are not well defined.

This controversy (Kirsch, 2004) has not subsided due partly to a recent surge of interest in the psychobiology of altered states of consciousness (ASC) via the neurosciences (De Pascalis, 2007; Gruzelier, 1998, 2000; Jamieson, 2007a, b; Raz, 2005). Vaitl et al. (2005) have summarized that research, suggesting that with “increasing knowledge of the neural correlates of consciousness, the formerly strange and hard to explain phenomena of ASC become increasingly understandable as a natural consequence of the workings of the brain” (p. 119).

Kallio and Revonsuo (2003, 2005) readdressed the altered state controversy suggesting that a neurobiological basis for altered states of consciousness could be definitively confirmed only if there is a consensually agreed upon definition for consciousness, altered states of consciousness, and related phenomena, such as *hypnotism*:

If such phenomena as ‘*hypnosis*,’ ‘*consciousness*,’ or ‘*altered state of consciousness*’ exist at all, then for science to describe and explain them coherently, surely the relevant research community in psychology and cognitive neuroscience should aim at developing an internally coherent and widely shared theoretical vocabulary to make genuine progress in their scientific explanation (Kallio & Revonsuo, 2005, p. 51).

After considering the various commentaries on their original article, Kallio and Revonsuo (2005) concluded that “the concept of altered state of consciousness (ASC) still lacks a commonly accepted definition and is in need of further clarification” (p. 46). Thus, the controversy continues concerning the nature of *hypnotism* and to what extent alterations in consciousness or “*trance*” effects contribute to the experience of *hypnotism*.

The eye-roll sign of the Hypnotic Induction Profile has been regarded as a behavioral neurobiological marker associated with state-trait correlates of hypnotizability (Spiegel & Spiegel, 2004). We believe that if and when neurophysiological markers are found to be associated with high hypnotic suggestibility/susceptibility (Kirsch, 2004), the search for such markers would still require some measure of subjective experience with which such neurobiological markers would be compared or correlated. As Lutz and Thompson (2003) reported, “a growing number of cognitive scientists now recognize the need to make systematic use of introspective phenomenological reports in studying the brain basis of consciousness” (p. 31). Additionally, there is a growing realization “that it will not be possible to make serious headway in understanding consciousness without confronting the issue of how to acquire more precise descriptive first-person reports about subjective experience” (Zelano, Moscovitch, & Thompson, 2007, p. 2).

Given the history of distrust in the behavioral sciences regarding subjective data (Holt, 1964; Kukla, 1983; Lieberman, 1979; Singer & Kolligian, 1987), it is imperative that we investigate this subjective side of consciousness reliably and validly. Consciousness is “phenomenal consciousness” (Chalmers, 2007), a subjective or “first person” phenomena. A subjective or phenomenological marker of trance depth or “altered state” effects, if reliable and valid, could surely help with the quandaries associated with hypnotism as defined by Kallio and Revonsuo (2003, 2005). We (Pekala, 1991a; Pekala & Kumar, 2000, 2007), have previously reported on a *psychophenomenological* approach to phenomenological assessment (Hilgard, 1980) using reliable and valid methodologies for quantifying, diagramming, and statistically assessing subjective experiences associated with a variety of psychological phenomena.

A Review of Research on Measuring Trance Depth Phenomenologically

Although there may be different types of trance associated with hypnotism, there may be at the same time some commonality across these different types of trance, analogous to Spearman’s (1904, 1923) “g” factor for general mental ability, vis-à-vis different types of intelligence, a la Gardner (1983).

Trance can be operationally defined as the subjective state the highly hypnotizable person reports in response to a hypnotic induction. In attempting to derive a general measure of trance that includes the assessment of subjective states in relation to hypnotizability, Pekala & Kumar (1984, 1987) derived a multiple regression equation to predict Harvard Group Scale (pHGS) scores, Form A, from the (sub)dimensions of the Phenomenology of Consciousness Inventory (PCI) (Pekala, 1982, 1991b), a self-report instrument for measuring subjective experience. The multiple regression equation (Pekala & Kumar, 1984) was cross-validated in two subsequent studies, yielding criterion validity coefficients of .62 (Pekala & Kumar, 1987) and .67 (Forbes & Pekala, 1993).¹ Additionally, a validity coefficient of .86 (Hand, Pekala, & Kumar, 1995) was found when correlating the actual Stanford C Scale (Weitzenhoffer & Hilgard, 1962) scores obtained by subjects with their predicted Harvard Group Scale (pHGS) scores. The aforementioned results provide evidence concerning the criterion-related validity of the pHGS score in predicting hypnotic susceptibility as measured by both the Harvard and Stanford C Scale scores.

The pHGS scores, based on regression weights assigned to particular PCI (sub)dimensions, can be assumed to reflect individual differences in subjective experiences assessed by the PCI. The pHGS score was subsequently defined as an estimate of a person’s “hypnoidal state” (Pekala, Forbes, & Contriascini, 1988; Pekala & Nagler, 1989) or “depth of trance” that individuals with varying levels of susceptibility are likely to experience during

hypnotism. The hypnoidal state score is a phenomenologically based measure of trance that is primarily a function of state effects, although influenced by trait factors (Kumar & Pekala, 1988, 1989; Kumar, Pekala, & Cummings, 1996).

Table 1 shows the unstandardized regression weights for the PCI (sub)dimensions used in computing the predicted Harvard Group Scale score (hypnoidal state score) and the relative percentages of variance accounted for by each of the variables (Pekala & Kumar, 1984).² An advantage of using the regression based approach is that the hypnoidal state scores can be readily computed for any (hypnotic) experience in which the PCI is administered. (See Pekala, 1991a, for the methodological and statistical limits for the use of the PCI-based scores.)

An instrument has construct validity to the extent that it assesses the underlying conceptual variable that it intends to represent (Bryant, 2000). The PCI-based hypnoidal state score has demonstrated criterion-related validity inasmuch as it predicts the Harvard Group Scale scores, Form A. However, the hypnoidal state (pHGS) score has also shown some evidence of construct validity as high hypnoidal state scores reflect the extent to which an individual reports increased alterations in experience and an altered state of consciousness, along with losses in volitional control and self-awareness, consistent with the way a hypnotic experience is traditionally described (see Table 1).

Table 1: Hypnoidal State (pHGS score) Regression Equation

PCI (Sub)Dimension	x	Unstandardized Regression Coefficient	Relative %
Altered Experience	x	+ .35	17%
Altered State	x	+ .31	15%
Volitional Control	x	- .28	13%
Self-Awareness	x	- .27	13%
Rationality	x	+ .23	11%
Absorption	x	+ .19	9%
Memory	x	- .14	7%
Altered Time Sense	x	+ .13	6%
Internal Dialogue	x	- .11	5%
Altered Body Image	x	- .07	3%
Constant		+4.51	

Note: Percentages indicate relative magnitude of the coefficient. Each PCI (sub)dimension is rated on a “0” to “6” scale with “0” indicating “none or little” and “6” indicating “much or complete.”

Additionally, high hypnoidal state scores are associated with increased absorption, but decreased memory and internal dialogue. Most of the variables listed in Table 1 are in the direction and magnitude endorsed by various theorists concerning how hypnotism is associated with a loss of control (the classic suggestion effect - Weitzenhoffer, 1974), alterations in experience and state of consciousness, and increased absorption (Barabasz & Watkins, 2005; Hilgard, 1965; Spiegel & Spiegel, 2004; Weitzenhoffer, 1989). The variables in the regression equation are also those processes that, we believe, clinicians would say are present at least some of the time in most highly hypnotizable clients during their hypnotic experience.

Only the regression weights associated with two of the variables in the regression equation appear counterintuitive; that concerning the positive coefficient for rationality and the negative coefficient for body image (the actual Pearson r s for these variables are opposite that listed). Both variables appear to be functioning as suppressor variables (Grimm & Yarnold, 1995), more highly correlated with the other independent variables than the criterion variable. That is, they allow for more of the variance to be accounted for than would otherwise be the case: “the effect of a suppressor variable is to partial out of the other predictors’ variance that is irrelevant to the criterion, resulting in larger relationships with, the prediction of, the criterion” (p. 63).

Although more research needs to be done to further demonstrate the construct validity of the hypnoidal state score, the aforementioned review suggests that the hypnoidal state score may be used to get an *estimate* of trance state effects, a la Weitzenhoffer (2002), for a variety of stimulus conditions.

Trance Depth, Suggestibility/Imagination, and Expectancy

In a provocative article Barber (2000) suggested that there are three “types” of highly hypnotizable individuals: the “fantasy prone” high, the “amnesia-prone” high, and the “positively-set” high hypnotizable. Whereas the fantasy prone high is especially good at “fantasizing vividly and realistically” (Barber, 2000, p. 208), the “amnesia-prone” individual appears “passive and close to sleep, manifesting a marked loss of muscle tone, lethargic movement, and a tendency to fall out of their chairs” (Barber, 2000, p. 219), highlighting alterations in consciousness and experience associated with this particular type. The third type, the “positively-set” high, is characterized by a “hypnosuggestive readiness,” which includes positive attitudes, positive motivation, and positive expectancies.

Along somewhat similar lines as Barber, but addressed to processes, as opposed to “types,” Holroyd (2003) suggested that three variables: trance or altered state of consciousness, imagination/suggestibility, and expectancy contribute to a person’s response to suggestions. From a synthesis of research on the neurophysiology of hypnosis (Crawford, 2001; Crawford & Gruzelier, 1992) and its phenomenology (Cardeña, 2005; Pekala & Kumar, 2000), Holroyd distilled three factors that she thought accounted for most of the effects we see in hypnotism: imagination/suggestibility, altered state effects, and expectancy. Holroyd (2003) suggested imagination/suggestibility and altered state effects interact with expectancy to account for how individuals experience hypnotism: “Suggestion without an altered state is just an invitation to use imagination and fantasy. An altered state without suggestion is just trance or meditation. Not only are altered states and suggestibility interactive contributors, but they also interact with expectancy,” (p. 121) to produce hypnotic phenomena. (Here, “interaction” is used figuratively; it is not meant to suggest a statistical interaction effect, Holroyd, personal communication, April, 2008).

Suggestibility

Suggestibility means different things to different researchers and theorists. The interested reader is invited to peruse Schumaker (1991) for a comprehensive review of these very different viewpoints. According to Weitzenhoffer (1989), Braid (1843) was the first to introduce the notion that suggestibility is a characteristic of the hypnotized person. Hilgard (1991) defined suggestion as a type of influential communication. Weitzenhoffer defined suggestibility more specifically as the “capacity to produce what I call the classical suggestion effect (Weitzenhoffer, 1974); that is, a nonvoluntary (or avolitional) response relevant to the content of a communication intended to be a suggestion” (2002, p. 210), hence highlighting

his viewpoint of suggestibility as nonvolitional in nature. Given the charge by some that hypnotism is “only” suggestibility, Killeen and Nash (2003) responded: “Although changes in suggestibility are one of the main effects of hypnosis, suggestibility is not one of the causes of hypnosis.” (p. 204)

Kirsch and Braffman (1999) distinguished two types of suggestibility: “if ‘hypnotic suggestibility’ is responsiveness to suggestions given after hypnosis has been induced;” (p. 226) then ‘nonhypnotic suggestibility’ may be used “to denote responsiveness to suggestions administered without the prior induction of hypnosis” (p. 226). They also emphasized the role of fantasy and imagination in suggestibility. They defined “imaginative suggestions” as “requests to experience an imaginary state of affairs as if it were real” (Kirsch & Braffman, 2001, p. 59), and “imaginative suggestibility” as the “degree to which the person succeeds in having the suggested experiences” (p. 59) whether such experiences occur within, or outside of, hypnotism.

Suggestibility and Imagination

Josephine Hilgard (1979) envisioned “imaginative and sensory-affective involvements” as being “closely related to the capacity to experience hypnosis” (p. 483), with imaginative involvements “expressing individual interests in a variety of experiences whereby imagination and fantasy provide the individual with highly satisfying experiences” (pp. 483-484). Sheehan (1979), in a comprehensive review of the relationships between imagination and hypnotism, suggested that imaginative activity is a major, but not the only, predictor of hypnotic responsivity. In addition, one needs to consider cognitive, motivational, and personality attributes. Hence, imaginative suggestibility, as conceptualized by Kirsch and Braffman (1999, 2001), may be a major, but not the only, aspect of being hypnotizable. Because there are individuals who “seem to respond to suggestion solely on the basis of imaginative involvement - good ability to imagine or fantasize” (Holroyd, 2003, pp. 120-121), it is likely that there are moderately to highly hypnotizables who use their fantasy or imagery ability to achieve hypnotic effects and yet do not necessarily experience an altered state of consciousness during hypnotism (see Pekala & Kumar, 2000, 2007).

Expectancy

Kirsch (1991) has made expectancy a central tenet in his theorizing concerning hypnotism. According to Kirsch “hypnotic inductions can best be understood as expectancy modification procedures” (p. 448): “the capacity of people’s beliefs and expectations to bring about changes in experience may be the ‘essence’ of hypnosis, and attempts to eliminate expectancy as ‘artifact’ may be doomed to failure” (p. 461). Kirsch (1985) hypothesized that hypnotic responses are determined by the person’s expectancy of their occurrence. Participants expect and experience hypnotic responses as a function of: belief that the response is appropriate to the hypnotized subject’s role, judge the situation to be one in which hypnotic behavior should occur, and believe themselves to be good hypnotic participants.

Attitude versus Aptitude in Hypnotizability

Besides looking at hypnotism from a “state versus nonstate” perspective, hypnotism can also be evaluated from the “attitude versus aptitude” perspective, well articulated by Benham, Woody, Wilson, and Nash (2006). Benham et al. suggest that whereas “aptitude-centered theories posit that the highly consistent individual differences in hypnotic

performance reflect the direct and substantial operation of a latent cognitive ability” (p. 343), “attitude-centered theorists view hypnotic responsiveness as based primarily (and perhaps even exclusively) on the direct operation of social learning, or social-cognitive, variables (expectations, motivation, attitude, and role enactment; Spanos, 1991)” (p. 343). To evaluate differences between these two perspectives, Benham et al. evaluated a model integrating ability, expectancy, and hypnotic response while measuring and assessing expectations and hypnotic performance throughout a hypnotic protocol. Their results generated the following conclusions:

(a) Expectancies showed significant stability across the course of the hypnosis protocol; (b) expectancies influenced subsequent hypnotic responses, even controlling for latent ability; (c) hypnotic responses, in turn, affected subsequent expectancies; and (d) a latent trait underlay hypnotic responses, even controlling for expectancies. As such, the results indicate a fairly complex but quite plausible web of effects interconnecting these important variables (p. 347).

The Benham et al.’s article was one of 3 papers reviewed by Barabasz and Perez (2007) as to whether hypnotizability as a trait really matters. The laboratory study by Benham et al. (2006), a treatment analogue study by Milling, Reardon, and Carosella (2006), and a hospital-based randomized clinical trial (Lioffi, White, & Hatira, 2006) were all found to converge to suggest “in identifying hypnotizability unambiguously as a powerful predictor of outcome” (Barabasz & Perez, 2007, p. 377): “there appears to be a latent cognitive ability that strongly influences the extent of an individual’s hypnotic response and operates along side the more modest influence of situation and attitude” (p. 376). How much of this latent cognitive ability is related to altered state trance effects and/or suggestibility was not addressed in these articles. However, a hypnotic assessment instrument, the PCI-HAP (Phenomenology of Consciousness Inventory - Hypnotic Assessment Procedure; Pekala, 1995a, 1995b), allows for aspects of both of these processes to be operationally defined, in addition to expectancy.

Operationalizing the Assessment of Hypnotism via the PCI-HAP

The previous review has highlighted the importance of suggestibility, altered (“trance”) state effects, and expectancy, as important variables in understanding hypnotism. These are variables that Holroyd (2003), Kirsch, (1991), and Weitzenhoffer, (2002), among others, have identified as important to better understand the nature of hypnotism, as defined by Weitzenhoffer (2002). In contrast to cognitive-behavioral instruments like the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962), or the Stanford, Form C (Weitzenhoffer & Hilgard, 1962), which measure participants’ responses to passing or failing various items during hypnotism, the PCI-HAP, via the hypnoidal state score and the PCI (sub)dimension scores, measures the nature of the content of subjective experiences during a sitting quietly period embedded in hypnotism from a more phenomenological perspective.

Whereas the Harvard and the Stanford C can be conceptualized as measuring “trait” effects of hypnotism (within a state context), the hypnoidal state score of the PCI-HAP is measuring the “state” effects of hypnotism, while still subsuming trait influences (Kumar, Pekala, & Cummings, 1996). By adding items on expectancy and items on suggestibility (the imagery vividness dream item and the eye catalepsy item) to the PCI-HAP, we hoped to generate an instrument for measuring hypnotic responsivity that would help assess the concepts of trance, suggestibility, and expectancy, and also be more clinically

relevant (Pekala, 2006; Pekala & Kumar, 2007; Pekala & Wickramasekera, 2007) than the commonly employed traditional scales.

Obviously, by having fewer suggestibility items than the traditional scales, the PCI-HAP is not meant to be used as a measure of hypnotic *suggestibility* (responses to suggestions) or *hypnotizability* (“the skill or talent a person has that enables him or her to respond to hypnotic tasks, such as suggestions on standardized scales,” Wagstaff et al., 2008, p. 129). Rather, it was developed to be used as a measure of hypnotic *responsivity* from a more state perspective. As such, the PCI-HAP is not meant to replace existing cognitive-behavioral instruments, but to possibly complement them. Furthermore, it can be used in clinical settings where the client’s phenomenological experience (loss of volitional control, feelings of altered consciousness, positive and negative affect, internal dialogue, imagery vividness, etc.) is judged to be more important than which behavioral items on a standardized hypnosis scale are passed.

The PCI-HAP³ includes a pre-assessment, administration of the induction and suggestions, the subsequent completion of the PCI (Pekala, 1982, 1991b) in reference to a sitting quietly period embedded in the hypnotic induction protocol, and also a post-assessment (debriefing form). For the pre-assessment, participants report whether they experienced hypnotism before and if so, how hypnotizable they felt they were at that time. They also are asked to estimate their subsequent level of hypnotic depth on a “1” to “10” scale (estimated hypnotic depth). Additionally, participants are told to visualize themselves in a hot tub and estimate the vividness of their kinesthetic and visual imagery. Finally, they are asked to estimate how helpful the hypnotic session is going to be to help them with their problems and concerns.

The hypnotic induction consists of a “body scan” (progressive relaxation but without the tensing), and a “mind calm” (counting back from “10” to “1” while “you let your mind become more and more calm, more and more empty”). After the mind calm, participants are asked to go on vacation in their mind and “have a wonderful and relaxing time.” After this mental vacation (the imagoic suggestibility item), participants are told to raise their left index finger when asked to do so (the finger raising item is intended to obtain a measure as to whether participants may have been unresponsive at this point in time). Participants are subsequently given the suggestion that their eyes are “heavy like lead” and are asked to try to open their eyes (the eye catalepsy item). Participants are then told to sit quietly and “just continue to experience the state you are in right now.” After the 2-minute sitting quietly period, participants are asked to pause for 15 seconds and make a mental note of what they were experiencing during that time. Participants are then counted out of the induction, using a “1” to “5” scale, and then complete the PCI in reference to the two minute sitting quietly period and the debriefing questionnaire.

As mentioned, the PCI-HAP generates a *pHGS score* or “hypnoidal state” score (Pekala & Nagler, 1989) that may be construed as a “general measure of trance” (Pekala & Kumar, 2000, p. 112). The PCI-HAP includes self-report measures of two types of expectancies: pre-hypnotic estimated hypnotic depth and pre- and post-hypnotic therapeutic efficacy. In addition, the PCI-HAP assessment protocol also includes a measure of “imagoic suggestibility” that is assessed via an *imagery vividness dream item*. Imagoic suggestibility is an aspect of imagination and fantasy as defined by Sheehan (1979), or “imaginative suggestibility” as defined by Kirsch and Braffman (2001): “requests to experience an imaginary state of affairs as if it were real” (p. 59). (Imagoic suggestibility we conceive as one aspect of imaginative suggestibility, since the latter may include many other aspects of suggestibility.) The PCI-HAP post-assessment debriefing form allows participants to estimate their hypnotic depth in the spirit of LeCron (1953) via a self-reported Hypnotic Depth (srHD) score. The post-assessment form also assesses responses to several other items: a finger response item, an eye catalepsy

item, and a “fell asleep” item. Additionally, there is a measure for reliability.

Over 20 years ago Laurence and Nadon (1986) suggested that “more sophistication in the experimental inquiries of hypnotic depth is required in order to further our understanding of the cognitive and affective structures underlying the hypnotic experience” (p. 215). In a subsequent paper (Pekala, Kumar, Maurer, Elliott-Carter, Moon, & Mullen, 2010) we present a study wherein self-reported hypnotic depth was predicted using the PCI-HAP in a group of substance dependent individuals. This research offers initial support for the importance of suggestibility, expectancy, and trance (altered) state effects in helping to better understand the nature of self-reported hypnotic depth. We believe this data can help us better understand the “the cognitive and affective structures underlying the hypnotic experience,” which in turn, can help to better illuminate the nature of hypnotism.

Footnotes

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¹Multiple regression analysis was used, instead of exploratory/confirmatory factor analysis, so as not to blur the distinction between PCI (sub)dimensions, which would have been the case had factor analysis been utilized instead.

²The original research (Pekala & Kumar, 1984) used all 26 dimensions and subdimensions of the PCI in the regression analysis. By doing this we were able to increase the *R* over and above that obtained when using only the 12 PCI major dimensions. Because of multicollinearity, several of the variables were more highly correlated among themselves than with the criterion variable, which resulted in these variables functioning, we believe, as suppressor variables (Grimm & Yarnold, 1995), and hence increasing the resulting *R*.

³Copies of the PCI (Pekala, 1982, 1991b), the PCI-HAP, the therapist and self-report pre- and post-assessment forms, the administration (Pekala, Kumar, & Maurer, 2009), and interpretative (Pekala, 2009) manuals, and the EXCEL scoring program are available at www.quantifyingconsciousness.com.

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