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A CROSS-VALIDATION OF TWO DIFFERING MEASURES OF HYPNOTIC DEPTH

Ronald J. Pekala and Ronald L. Maurer

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Abstract: Several sets of regression analyses were completed, attempting to predict 2 measures of hypnotic depth: the self-reported hypnotic depth score and hypnoidal state score from variables of the Phenomenology of Consciousness Inventory: Hypnotic Assessment Procedure (PCI–HAP). When attempting to predict self-reported hypnotic depth, an $R$ of .78 with Study 1 participants shrank to an $r$ of .72 with Study 2 participants, suggesting mild shrinkage for this more attributional measure of hypnotic depth. Attempting to predict hypnoidal state (an estimate of trance) using the same procedure, yielded an $R$ of .56, that upon cross-validation shrank to an $r$ of .48. These and other results suggest that, although there is some variance in common, the self-reported hypnotic depth score appears to be tapping a different construct from the hypnoidal state score.

Hypnotic Depth

Measuring hypnotic depth is an endeavor that goes back decades. Davis and Husband (1931) first described a 30-point system to measure depth of hypnosis that included hypnoidal, light, medium, and somnambulistic levels. LeCron (1953) asked his participants to enumerate during hypnosis, using numbers from 1 to 100, their depth of trance when asked, “How deep are you?” Tart (1970) reviewed and critiqued six different self-hypnotic depth scales, with scores ranging from 0 to 100 or 1 to 10 points. Tart thought that spontaneous reporting

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was better than conscious deliberation and wrote that such scales measure the “momentary state of the S [subject] along some dimension of ‘profundity’ of the hypnotic state” (1970, p. 105).

Twenty-five 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). Due to this mix of interacting variables, they suggested that “adjusting hypnotic procedures according to Ss’ expectancies, preconceptions, and performance” (Laurence & Nadon, 1986, p. 222) was necessary to maximize the individual’s hypnotic response. They also reported that Orne (1966, 1980) emphasized that “behavioral concomitants are only valid if they accurately reflect subjective alterations in an individual’s experience” (Laurence & Nadon, 1986, p. 221), hence highlighting the importance of taking into account experiential or subjective/phenomenological variables to better understand hypnosis.

**Hypnotic Susceptibility**

Laurence and Nadon reported that, although hypnotic depth and hypnotic susceptibility were used early on rather interchangeably in the 19th century, they reported that these concepts differentiated themselves in the 20th century, “particularly following the work of White (1937/1965; 1941/1965) and the introduction of standardized hypnotic susceptibility scales (E. R. Hilgard, 1965)” (1986, p. 215).

Laurence and Nadon also suggested that there has been considerable controversy concerning the etiology of differential hypnotic responsiveness since the 19th century:

> [T]wo major viewpoints have sought to accommodate the findings of differential responses to hypnotic suggestions; hypnosis was either presented as an altered state of consciousness, the depth of which was thought to increase as the number and the difficulty of the suggested behaviors increase (Bernheim, 1889; Binet, 1896), or as a motivationally based set of behaviors most parsimoniously explained by Ss’ desires to conform to the suggested situation (see for example, Delboeuf, 1890). (1986, p. 215)

Similarly, state theorists, like Hilgard (1977), Bowers (1992), Kihlstrom (2003), Woody (Woody & Bowers, 1994), Barabasz and Watkins (2005), Gruzelier (1996), and Tart (1979), have generally espoused some variant of altered state effects or a “special process” (Spanos, 1982) as necessary for understanding hypnosis/hypnotism (see Pintar & Lynn, 2008, for a review). In contrast, nonstate theorists, like Sarbin (1950), Barber (1969), Spanos (1991), Lynn (1997), and Kirsch (1991), have suggested 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,
For the purposes of this article, we will be concerned with hypnotic depth, as opposed to hypnotic susceptibility, generally labeled as hypnotizability (Barabasz, 2011, p. 147).

Validity of the Concept of Hypnotic Depth

Weitzenhoffer, in his classic 2002 paper, “Scales, Scales, and More Scales,” suggested that self-report hypnotic depth scales, such as “the subjective scale devised by Leslie M. LeCron” (p. 214), are “lacking in solid evidence” (p. 214). He concluded that this was due partly to the fact that it is unknown to what extent the person being tested understands the term hypnotic depth “when asked to numerically assess how deeply hypnotized they are” (p. 214).

However, Wagstaff, Cole, and Brunas-Wagstaff (2008) in their recent paper suggested that brief depth-report scales such as the LSS [Long Stanford Scale] are at least as reliable and valid an indicator of hypnotizability as the conventional suggestion-based hypnosis scales. … Moreover, they also enable us to estimate whether subjects have been hypnotized in contexts not explicitly defined as hypnosis; for example, as when subjects receive procedures that have been identified as having commonalities with formal hypnotic induction, such as relaxation, autogenics, and meditation. (p. 137)

The authors (Pekala, Kumar, Maurer, Elliott-Carter, & Moon, 2006) have previously reported on a protocol, called the Phenomenology of Consciousness Inventory: Hypnotic Assessment Procedure (PCI–HAP; Pekala, 1995a, 1995b) to measure hypnotic depth using a self-report score called the self-report hypnotic depth (srHD) score. Several additional papers have been published concerning this score (Pekala, 2010, 2011; Pekala et al., 2010a, 2010b). Additionally, Wagstaff (2010) wrote that the srHD score “is very similar to that found in the Long Stanford Scale of Hypnotic Depth (LSS)” (p. 49), suggesting commonalities between the srHD and LSS scores.

Hypnotism, Hypnosis, and Trance

Weitzenhoffer (1989a, 1989b) also made the distinction between “hypnosis” and “hypnotism,” suggesting that whereas “hypnosis” means “altered state,” implying trance, “hypnotism” means something entirely different. It means giving suggestions after you think a person is in the state of hypnosis. Weitzenhoffer (2002) felt it was quite important to distinguish between “hypnosis” and “hypnotism:” “I will otherwise generally reserve the term hypnosis for the ‘state’ [our quotes] 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).
The present article will hereafter utilize Weitzenhoffer’s distinction between hypnosis and hypnotism.

The term, trance, is also controversial. Tart, in his “Introduction” to Altered States of Consciousness (1972) said that when trying “to find a clear definition of the word trance” (p. 3), “for every defining characteristic of a trance mentioned by one authority, another authority would use the opposite characteristic” (p. 3). In the same volume, Shor (1972) suggested that any “state in which the generalized reality orientation has faded to relatively nonfunctional awareness may be termed a trance state” (p. 247).

Weitzenhoffer wrote that the term “trance” has been used interchangeably with the term “hypnosis” since Braid, but especially in modern times. He suggested that “trance,” however, appears to be an older and much broader concept than hypnosis: “[Trance] 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” (Weitzenhoffer, 1989a, p. 298).

The present study will evaluate two measures of hypnotic depth, one concerned with Weitzenhoffer’s conceptualization of hypnosis or trance (as operationalized by the hypnoidal state score—see below) and the other, the self-reported hypnotic depth score, in the tradition of LeCron (1953).

**Previous Research**

**Study 1**

Previous research (Pekala et al., 2006) attempted to predict a measure of hypnotic depth, the self-reported hypnotic depth (srHD) score, from a phenomenological assessment instrument, the PCI–HAP.³ The PCI–HAP (Pekala, 1995a, 1995b; Pekala & Kumar, 2000, 2007; Pekala et al., 2010a, 2010b) is an inventory that can be used to measure hypnotic responsivity from a more phenomenological or state perspective than traditional instruments.

Unlike familiar cognitive-behavioral instruments like the Harvard (Shor & Orne, 1962) or the Stanford C⁴ (Weitzenhoffer & Hilgard, 1962),

³Copies of the PCI–HAP (Pekala, 1995a, 1995b), the therapist and self-reported pre- and postassessment forms, the administration (Pekala, Kumar, & Maurer, 2009) and interpretative (Pekala, 2009a) manuals, and the EXCEL scoring program (Pekala, Maurer, & Ott, 2009) are available at www.quantifyingconsciousness.com.

⁴We will confine comments to comparisons with the Harvard and the Stanford C. The Hypnotic Induction Profile (HIP; Spiegel & Spiegel, 2004) is also a well-researched clinical/research assessment instrument. It includes phenomenological items, such as tingling, dissociation, amnesia, and floating sensations, in addition to behavioral items. It probably comes closest to the PCI–HAP in terms of methodological similarities.
CROSS-VALIDATION OF HYPNOTIC DEPTH

which measure hypnotic susceptibility or suggestibility from a more trait perspective by how many items of the inventory are passed or failed, the PCI–HAP measures what we have called hypnotic responsivity (Pekala et al., 2010a). The PCI–HAP does include two trait items, an imagoic suggestibility (hypnotic dream) item and an eye catalepsy item. It also includes what we believe to be an estimate of Weitzenhoffer’s (2002) conceptualization of hypnosis or trance. This measure of hypnosis is computed from a 53-item state instrument called the Phenomenology of Consciousness Inventory (PCI; Pekala, 1982, 1991b) and is called a “hypnoidal state” score (see Pekala, 1995a, 1995b; Pekala & Kumar, 2000, 2007; Pekala et al., 2010a, 2010b, for a review of this concept). The PCI maps 12 major and 14 minor dimensions of consciousness and, hence, generates scores on such phenomenological dimensions of consciousness as positive and negative affect, volitional control, rationality, and altered state of awareness, among others.

Besides measuring trance and self-reported hypnotic depth, the PCI–HAP measures hypnotic responsivity across several other domains, including imagoic suggestibility (a subtype of imaginative suggestibility as defined by Kirsch and Braffman, 1999, 2001) and expectancy (Kirsch, 2000). These are domains, along with the domain of trance, that various researchers and theorists (e.g., Barber, 2000; Cardeña, 2005; Holroyd, 2003; Kihlstrom, 2003, 2005; Kirsch, 1985, 1991; Lynn & Kirsch, 2006; Schumaker, 1991; Weitzenhoffer, 2002) have suggested are important aspects of the “hypnotic puzzle.”

Besides generating two measures of hypnotic depth, the srHD and the hypnoidal state score, the PCI allows for the estimation of percentile scores for 26 dimensions and subdimensions of phenomenological experience (such as altered state of awareness, imagery, volitional control, etc.). Additionally, there are a few other PCI–HAP variables, such as a finger response item and a self-report sleep state item, that may be used to help determine if the participant may have fallen asleep (or become unresponsive) during the hypnotic assessment. The PCI–HAP follows in the tradition of past phenomenological approaches to hypnotism (see Pekala, 2011, p. 209) but does so in a more sophisticated phenomenological manner than has been done in the past by using comprehensive phenomenological analyses to quantify and statistically evaluate differences in phenomenological experience (see Pekala, 1991a; Pekala & Cardeña, 2000; Pekala & Kumar, 2000, 2007).

In an earlier study (Pekala et al., 2006), participants took part in a study on relapse prevention and completed the PCI–HAP. Participants were divided into two approximately equal groups. Group 1 was used to generate a regression equation and the unstandardized regression coefficients from the equation were then used to generate a predicted srHD score for Group 2 participants. Predicted srHD scores were then
correlated with the actual srHD scores of Group 2 participants. Left in the regression equation using Group 1 participants were the hypnotic dream item (imagoic suggestibility), the hypnoidal state (pHGS score), and the finger response item. The split-half regression analyses generated an $R$ of .85 for an $R^2$ of .72 for Group 2 participants for this analysis.

**Study 2**

In a follow-up study (Pekala et al., 2010b), participants took part in a study on relapse prevention and completed the PCI–HAP. Several sets of regression analyses were again computed, attempting to predict the srHD score from the PCI–HAP variables. Left in the regression equation were the hypnotic dream item (imagoic suggestibility), total combined expectancy, the eye catalepsy item, and the hypnoidal state score for an $R$ of .80 and an $R^2$ of .65 for this previously reported analysis.

**The Present Investigation**

The present investigation sought to cross-validate the self-reported hypnotic depth (srHD) scores across Studies 1 and 2. The present investigation used the PCI–HAP’s variables from that earlier study’s (Study 1) complete (as opposed to the split-half) sample to generate a multiple $R$, whose unstandardized regression coefficients were then used to generate a predicted srHD score, which was subsequently correlated with the actual srHD scores of the participants of Study 2 (Pekala et al., 2010b). The goal was to see how much shrinkage would result.

No published research by the authors attempting to predict the hypnoidal state score via regression analysis has been done to date. Hence, a second aim of this investigation was to do a similar cross-validation analysis as was done on self-reported hypnotic depth, but using the hypnoidal state score as the dependent variable, and to determine how much the hypnoidal state score shrinks when generalizing from one sample to another. We believe the hypnoidal state score is tapping a different construct from the srHD score (see Pekala et al., 2010a, 2010b), and comparing the cross-validation analyses across the two constructs would be one way of better determining their differences. Finally, by doing stepwise regression analyses across the full samples of both studies, we hoped to determine in what respects the srHD score might be different from the hypnoidal state score (based on which variables would be left in the regression equation).
Participants

Participants for both studies were chronic drug and alcohol individuals residing at an in-patient program who were involved in using self-hypnosis training for relapse prevention postdischarge. Informed consent was procured; participation was voluntary. The studies were reviewed and approved by the hospital Institutional Review Board and Research and Development committees. These participants were highly motivated to use new strategies to help them with their drug and alcohol addiction, given the chronic nature of their addiction (Pekala et al., 2004). Participants completed a variety of questionnaires before discharge. One of those inventories involved the hypnotic assessment procedure (PCI–HAP) described below (Pekala, 1995a, 1995b, 2002; Pekala & Kumar, 2000, 2007).

Study 1. Three hundred participants from two substance abuse residential rehabilitation treatment programs (SARRTPs) matriculated into the study on relapse prevention (Pekala et al., 2006). Two hundred and sixty-one of those participants subsequently completed the PCI–HAP. Eliminating participants with incomplete data resulted in 250 participants; 180 were found to be reliable at completing the PCI (had a reliability index, RI^5, of less than 2.30).

Study 2. Two hundred and twenty-three participants from two SARRTPs initially matriculated into two slightly different substudies on relapse prevention (Pekala et al., 2010b). Both substudies used the same design with one major difference: The first substudy paid the participants for a follow-up interview (n = 120), and the second study (n = 103) did not. The PCI–HAP preassessment form was added part way through Substudy 1 and it was used throughout Substudy 2. Eliminating participants who were unreliable and who had not completed both pre- and postassessment forms resulted in 123 participants. Study 2 participants served as the cross-validation sample for Study 1 participants.

Procedure

Study 1. Participants were assigned to one of four groups (control, attention-placebo, transtheoretical/cognitive-behavioral, and hypnotism). The three treatment groups completed four sessions of intervention, and before discharge (along with the control participants),

^5The PCI includes five items of similar or identical content that are used to get a measure of how reliably participants completed the PCI. Scores about 2.30 are considered to be unreliable. (See Pekala, 2010, for more information about the reliability index.)
all participants completed the PCI–HAP. Before the interventions, participants completed a variety of assessment instruments, one of which was the PCI–HAP. They are paid $10 for the preassessment testing, $10 for attendance at all four interventions, and $20 for a 2-month follow-up interview.

Study 2. Participants were seen for two counterbalanced assessment/treatment sessions spaced about a week a part for two substudies that involved very similar designs. For both substudies, whereas the first hour was assessment (either the PCI–HAP or personality testing), the second hour was self-hypnosis training for relapse prevention or self-esteem enhancement. Participants were paid $10 for their participation in either substudy. Participants were paid $10 for a follow-up interview in Substudy 2; no such remuneration was given in Substudy 1.

Materials

The PCI–HAP consists of a preassessment, a hypnotic induction, and a postassessment (debriefing). For the preassessment, participants report whether they experienced hypnotism before and, if so, how hypnotizable they felt they were then. They are also asked to estimate their subsequent level of hypnotic depth on a 1 to 10 scale (called the estimated hypnotic depth score). Additionally, participants are told to imagine themselves in a hot tub and to estimate the vividness of their visual and kinesthetic imagery, and to estimate how helpful the hypnotic session was going to be to help them with their problems and concerns.

The actual hypnotic induction consisted of progressive relaxation but without the tensing (called a “body scan”) and a “mind calm” (counting back from “10” to “1” while “you let your mind become more and more calm, more and more empty”). Participants are then asked to go on vacation in their mind and “have a wonderful and relaxing time.” After this imaginary vacation (labeled the imagoic suggestibility item), participants are told to raise their left index finger when asked to do so (called the finger response item) to get a measure as to whether participants were unresponsive at this point in time.

Participants are then told that their eyes are “heavy like lead” and are asked to try to open their eyes (eye catalepsy item). After this suggestion, participants are asked to sit quietly and to “just continue to experience the state you are in right now.” Afterwards participants complete the Phenomenology of Consciousness Inventory (PCI; Pekala, 1982, 1991b) in reference to this sitting quietly period. After the sitting quietly period, participants are asked to pause for 15 seconds so that they can remember what they were experiencing during that time. Participants are then counted out of the induction and complete a debriefing form about their experience.
After deinduction, participants complete the PCI in reference to the 2-minute sitting quietly period during the hypnotic induction. The 53 items of the PCI assess subjective experiences across the following 12 major dimensions and 14 minor dimensions (in parentheses): altered state of awareness, altered experience (body image, time sense, perception, unusual meaning), volitional control, self-awareness, rationality, internal dialogue, positive affect (joy, sexual excitement, & love), negative affect (anger, sadness, & fear), imagery (amount & vividness), attention (direction & absorption), memory, and arousal.

Over the years the authors have found the PCI to be reliable and valid for mapping phenomenological experiences in response to such stimulus conditions as eyes open and closed sitting quietly, breathing, progressive relaxation, hypnotism, drumming and trance postures, and fire walking (Forbes & Pekala, 1993, 1996; Maurer, Kumar, Woodside, & Pekala, 1997; Pekala & Ersek, 1992/1993; Pekala & Levine, 1981, 1982; Pekala, Steinberg, & Kumar, 1986; Pekala & Wenger, 1983; Woodside, Kumar, & Pekala, 1997). Over the last two decades Pekala and colleagues (Kumar & Pekala, 1988, 1989; Kumar, Pekala, & Cummings, 1996; Kumar, Pekala, & Marcano, 1996; Kumar, Pekala, & McCloskey, 1999; Pekala, 1991a; Pekala & Kumar, 1984, 1986, 1987, 1989, 2000; Pekala, Kumar, & Marcano, 1995; Pekala & Nagler, 1989) have used this approach to assess and quantify the subjective experiences associated with hypnotism. Research has shown the PCI to have adequate validity for measuring hypnotic experience (Barnes, Lynn, & Pekala, 2009; Forbes & Pekala, 1993; Hand, Pekala, & Kumar, 1995; Kumar & Pekala, 1988, 1989; Kumar, Pekala, & Marcano, 1996; Kumar, Pekala, & McCloskey, 1999; Pekala, 1991a; Pekala & Kumar, 1984, 1986, 1987, 1989, 2000; Pekala, Kumar, & Marcano, 1995; Pekala & Forbes, 1988; Pekala & Kumar, 1984, 1986, 1987, 1989; Pekala, Steinberg, & Kumar, 1986).

After completing the PCI, the participant completes a postassessment form rating the vividness of their imagery in reference to going “on a vacation somewhere to a beautiful place and have a very relaxing and very wonderful time” (Pekala, Kumar, & Maurer, 2009, p. 11) on a 1-to 10-intensity scale the vividness of their imagery, letting 1 = “just a thought, no image at all” and 10 = “as real and vivid as actually being there” (2009, p. 19). This form also asks whether participants opened their eyes during the eye catalepsy item (1 = opened eyes; 2 = “did not open eyes”), if they raised their finger when asked to do so (1 = raised finger; 2 = did not raise finger), and their self-report as to whether they fell asleep (sleep state item) on a 4-point scale: 4 = “no, I did not fall asleep”; 1 = “yes, I fell asleep”6 (p. 19).

6For the data analysis, the scoring for the finger response item and the sleep state item were reversed to allow for more intuitive interpretation of the results.
The next to last item on the debriefing form asks the participants about their hypnotic depth: “On a ‘1’ to ‘10’ scale, how hypnotized do you feel that you became? Let ‘1’ = ‘not hypnotized at all,’ and let ‘10’ = ‘the most hypnotized that you can imagine.’” (Pekala, Kumar, & Maurer, 2009, p. 20). This item measures a participant’s self-reported hypnotic depth (the srHD) score.

**Results**

**Study 1**

*Regression analyses.*

**Predicting the self-reported hypnotic depth score.** Regression analyses were completed attempting to predict self-reported hypnotic depth (srHD) using all participants of Study 1 from the hypnoidal state score, the imagoic suggestibility item, the eye catalepsy item, the finger response item, and the sleep state item (these were the items used in the regression analyses reported in Pekala et al., 2006, which generated a multiple \( R \) of .85 for an \( R^2 \) of .72 when doing a split-half analysis). The regression equation used a (default) forward stepwise algorithm with alpha-to-enter and alpha-to-remove of .15 (Wilkinson, 1998) (used in all subsequent analyses). Left in the regression equation were imagoic suggestibility item (the hypnotic dream item; standard coefficient of .60), the hypnoidal state score (standard coefficient of .25), and the eye catalepsy item (standard coefficient of .14) for an \( R \) of .78 and an \( R^2 \) of .61 (see Table 1). The \( R \) and coefficient of determination (\( R^2 \)) were slightly lower than that obtained with the earlier (Pekala et al., 2006) split-half sample.

**Predicting the hypnoidal state score.** No research has been completed by the authors predicting the hypnoidal state score from the other PCI–HAP variables. In the first set of regression analyses, the srHD score was not included since it appears to be an attributional variable (Pekala et al., 2006) that is assessed at the end of the PCI–HAP hypnotic assessment. We believe its high correlation would have automatically led to its inclusion in the stepwise regression equation (but see below).

Regression analyses were completed, attempting to predict the hypnoidal state score from the imagoic suggestibility item (hypnotic dream item), the eye catalepsy item, the finger response item, and the sleep state item. Left in the regression equation were the imagoic suggestibility item (hypnotic dream item; standard coefficient of .34), the sleep state item (standard coefficient of .31), and the eye catalepsy item (standard coefficient of .14) for an \( R \) of .51 and an \( R^2 \) of .26 (see Table 2). Notice that the coefficient of determination (\( R^2 \)) of the hypnoidal state
Table 1
Predicting Self-Reported Hypnotic Depth Using the PCI–HAP Debriefing Form Items: Full Sample for Study 1

<table>
<thead>
<tr>
<th>Subscale</th>
<th>R</th>
<th>R²</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>F Value²</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagoic Suggestibility (Imagery Vividness Dream Item)</td>
<td>.727</td>
<td>.529</td>
<td>0.529</td>
<td>0.60</td>
<td>138.14</td>
<td>.000</td>
</tr>
<tr>
<td>Hypnoidal State</td>
<td>.771</td>
<td>.594</td>
<td>0.484</td>
<td>0.25</td>
<td>23.44</td>
<td>.000</td>
</tr>
<tr>
<td>Eye Catalepsy Item</td>
<td>.782</td>
<td>.611</td>
<td>0.699</td>
<td>0.14</td>
<td>7.69</td>
<td>.006</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = 180.

²F and p are final values for independent variables left in the regression equation.
Table 2
Predicting Hypnoidal State Using the PCI–HAP Debriefing Form Items: Full Sample for Study 1

<table>
<thead>
<tr>
<th>Subscale</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>$F$ Value$^a$</th>
<th>$p$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagoic Suggestibility (Imagery Vividness Dream Item)</td>
<td>.373</td>
<td>.139</td>
<td>0.152</td>
<td>0.34</td>
<td>25.51</td>
<td>.000</td>
</tr>
<tr>
<td>Sleep State Item</td>
<td>.495</td>
<td>.245</td>
<td>0.419</td>
<td>0.31</td>
<td>22.53</td>
<td>.000</td>
</tr>
<tr>
<td>Eye Catalepsy Item</td>
<td>.512</td>
<td>.262</td>
<td>0.362</td>
<td>0.14</td>
<td>4.18</td>
<td>.042</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $n = 180$.

$^aF$ and $p$ are final values for independent variables left in the regression equation.
Table 3
Predicting Hypnoidal State Using the PCI–HAP Debriefing Form Items (Including the srHD Score): Study 1

<table>
<thead>
<tr>
<th>Subscale</th>
<th>R</th>
<th>R²</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>F Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reported Hypnotic Depth</td>
<td>.508</td>
<td>.259</td>
<td>0.245</td>
<td>0.48</td>
<td>59.23</td>
<td>.000</td>
</tr>
<tr>
<td>Sleep State Item</td>
<td>.577</td>
<td>.333</td>
<td>0.372</td>
<td>0.28</td>
<td>19.67</td>
<td>.013</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = 180.

*F and p are final values for independent variables left in the regression equation.

score (.26) is about half the size of the coefficient of determination of the srHD score (.61).

Additional regression analyses were completed attempting to predict the hypnoidal state score for Study 1 participants from the aforementioned items and (now adding) the srHD score. Left in the regression equation were the self-reported hypnotic depth score (standard coefficient of .48) and the sleep state item (standard coefficient of .28) for an $R$ of .58 and an $R^2$ of .33 (see Table 3). No longer included in the regression equation was imagoic suggestibility and the eye catalepsy items. However, the sleep state item was still included.

Study 2

Preliminary analyses. Since the data for Study 2 came from two slightly different substudies, multivariate analyses of variance (MANOVAs) were completed to determine if there were significant differences across the variables as a function of substudies (1 and 2) and order (first or second session — since the two sessions were counterbalanced). This preliminary analysis was done to determine if the two data sets could be combined to obtain a larger sample size. Dependent variables included in the analyses were srHD, imagoic suggestibility, hypnoidal state, finger response, eye catalepsy, negative effects, and the sleep state items. There was neither a significant main effect for study, Wilks’ Lambda = 0.92, $F(7, 113) = 1.48, p = .18$, nor for order, Wilks’ Lambda = 0.94, $F(7, 113) = 0.96, p = .46$. The interaction between Study and Order was also not significant, Wilks’ Lambda = 0.93, $F(7, 113) = 1.31, p = .25$.

Descriptive and correlational analyses. To give the reader an idea as to the distribution of the srHD and hypnoidal state scores, Figures 1 and 2 show the histograms of the self-reported hypnotic depth score and the hypnoidal state scores (truncated to the nearest whole number),
respectively. Skewness and kurtosis for the srHD score were 0.20 and −0.89, respectively. Skewness and kurtosis for the hypnoidal state score were, −0.55 and 0.52, respectively.

Pearson rs were computed for Study 2 variables (see Table 4). Self-reported hypnotic depth and hypnoidal state correlated .48 (p < .001). The highest correlation for the srHD score was with imagoic suggestibility (r = .68); for hypnoidal state, its highest correlation was with
### Table 4

**Pearson Correlation Matrix for the PCI–HAP Variables for Study 2**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-Reported Hypnotic Depth (srHD)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hypnoidal State</td>
<td>.48</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Imagoic Suggestibility (Imagery Vividness Dream Item)</td>
<td>.68</td>
<td>.36</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Finger Response Item</td>
<td>.06</td>
<td>−.07</td>
<td>.14</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Eye Catalepsy Item</td>
<td>.45</td>
<td>.30</td>
<td>.34</td>
<td>−.25</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>6. Sleep State Item</td>
<td>.12</td>
<td>.35</td>
<td>.05</td>
<td>−.29</td>
<td>.19</td>
<td>1.00</td>
</tr>
<tr>
<td>7. Predicted srHD</td>
<td>.72</td>
<td>.67</td>
<td>.92</td>
<td>−.24</td>
<td>.34</td>
<td>.14</td>
</tr>
<tr>
<td>8. Predicted Hypnoidal State</td>
<td>.69</td>
<td>.48</td>
<td>.85</td>
<td>−.09</td>
<td>.69</td>
<td>.42</td>
</tr>
</tbody>
</table>

*Note. r > .18 (p < .05); r > .24 (p < .01); and, r > .29 (p < .001).*

*a $n = 123$.

---

![Figure 3](image-url). Scatterplot of the self-reported hypnotic depth scores versus the hypnoidal state scores.

The srHD score ($r = .48$). Viewed another way, the variance in common between srHD and imagoic suggestibility is 46%; the variance in common between hypnoidal state and imagoic suggestibility is 13%. Although there is significant variance in common between the srHD and hypnoidal state scores (23%), they appear to be tapping different constructs (see “Discussion” below). Figure 3 shows the scatter plot of the srHD scores versus the hypnoidal state scores.
The sleep state item correlated .12 (not significant) with self-reported hypnotic depth, but .35 \((p < .001)\) with hypnoidal state. These results suggest that the hypnoidal state score is more associated with the feeling of falling asleep than is the srHD score.

Regression analyses

**Predicting the self-reported hypnotic depth score.** Regression analyses were completed attempting to predict self-reported hypnotic depth (srHD) using the participants of Study 2 from the hypnoidal state score, the eye catalepsy item, the finger response item, and the sleep state item (these were the items used in the regression analysis depicted in Table 1 from Study 1). Left in the regression equation were the imagoic suggestibility item (hypnotic dream item; standard coefficient of .53), the hypnoidal state score (standard coefficient of .24), and the eye catalepsy item (standard coefficient of .20) for an \(R\) of .75 and an \(R^2\) of .56 (see Table 5).

**Predicting the hypnoidal state score.** Regression analyses also were completed attempting to predict the hypnoidal state (pHGS) score from the imagoic suggestibility item (hypnotic dream item), the eye catalepsy item, the finger response item, and the sleep state item. Left in the regression equation were the imagoic suggestibility item (hypnotic dream item; standard coefficient of .30), the sleep state item (standard coefficient of .31), and the eye catalepsy item (standard coefficient of .13) for an \(R\) of .51 and an \(R^2\) of .26 (see Table 6).

Additional regression analyses were completed attempting to predict the hypnoidal state (pHGS) score from the imagoic suggestibility item (hypnotic dream item), the eye catalepsy item, the finger response item, the sleep state item, and (now adding) the srHD score. Left in the regression equation were self-reported hypnotic depth score (standard coefficient of .44) and the sleep state item (standard coefficient of .30) for an \(R\) of .57 and an \(R^2\) of .32 (see Table 7).

**Summary of regression analyses.** To help summarize the aforementioned regression results, Table 8 shows a summary of the results of the two studies including those variables that ended up in the regression equation and the \(R\) and \(R^2\) values. As the reader can see, when predicting srHD, both imagoic suggestibility and hypnoidal state were included in the two sets of regression equations (see Table 8A). The eye catalepsy item was included in both studies with relatively similar Rs and \(R^2\)s across both studies (the sleep state item was not included in either analysis).

When predicting hypnoidal state, the sleep state item was present in all the regression equations, even when using the srHD score in the regression equation. Rs and \(R^2\)s were lower for predicting hypnoidal state than self-reported hypnotic depth, with the \(R^2\)s accounting for
Table 5

Predicting Self-Reported Hypnotic Depth Using the PCI–HAP Debriefing Form Items: Study 2

<table>
<thead>
<tr>
<th>Subscale</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>$F$ Value&lt;sup&gt;a&lt;/sup&gt;</th>
<th>$p$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagoic Suggestibility (Imagery Vividness Dream Item)</td>
<td>.677</td>
<td>.458</td>
<td>0.463</td>
<td>0.53</td>
<td>59.86</td>
<td>.000</td>
</tr>
<tr>
<td>Hypnoidal State</td>
<td>.723</td>
<td>.523</td>
<td>0.437</td>
<td>0.24</td>
<td>12.35</td>
<td>.001</td>
</tr>
<tr>
<td>Eye Catalepsy Item</td>
<td>.746</td>
<td>.556</td>
<td>1.063</td>
<td>0.20</td>
<td>8.77</td>
<td>.004</td>
</tr>
</tbody>
</table>

Constant: $-1.020$

Note. $n = 123$.

<sup>a</sup>$F$ and $p$ are final values for independent variables left in the regression equation.
Table 6
Predicting Hypnoidal State Using the PCI–HAP Items: Study 2

<table>
<thead>
<tr>
<th>Subscale</th>
<th>R</th>
<th>$R^2$</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>$F$ Value$^a$</th>
<th>$p$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagoic Suggestibility (Imagery Vividness Dream Item)</td>
<td>.359</td>
<td>.129</td>
<td>0.141</td>
<td>0.30</td>
<td>12.51</td>
<td>.001</td>
</tr>
<tr>
<td>Sleep State Item</td>
<td>.491</td>
<td>.241</td>
<td>0.430</td>
<td>0.31</td>
<td>15.03</td>
<td>.000</td>
</tr>
<tr>
<td>Eye Catalepsy Item</td>
<td>.507</td>
<td>.257</td>
<td>0.387</td>
<td>0.13</td>
<td>2.42</td>
<td>.122</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $n = 123$.

$^aF$ and $p$ are final values for independent variables left in the regression equation.
Table 7
Predicting Hypnoidal State Using ALL the PCI–HAP Items (Including the srHD Score): Study 2

<table>
<thead>
<tr>
<th>Subscale</th>
<th>( R )</th>
<th>( R^2 )</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>( F ) Value</th>
<th>( p ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reported Hypnotic Depth</td>
<td>.481</td>
<td>.232</td>
<td>0.239</td>
<td>0.44</td>
<td>34.29</td>
<td>0.000</td>
</tr>
<tr>
<td>Sleep State Item</td>
<td>.565</td>
<td>.319</td>
<td>0.411</td>
<td>0.30</td>
<td>15.45</td>
<td>0.000</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \( n = 123 \).

\( a \) \( F \) and \( p \) are final values for independent variables left in the regression equation.

Table 8
Summary Table for Regression Analyses

<table>
<thead>
<tr>
<th>Table no.</th>
<th>Study no.</th>
<th>Variables Left in the Regression Equation</th>
<th>( R )</th>
<th>( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Predicting Self-Reported Hypnotic Depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Imagoic Suggestibility</td>
<td>.78</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hypnotoidal State</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Catalepsy Item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>Imagoic Suggestibility</td>
<td>.75</td>
<td>.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hypnotoidal State</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Catalepsy Item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Predicting Hypnoidal State</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Imagoic Suggestibility</td>
<td>.51</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep State item</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Catalepsy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>Imagoic Suggestibility</td>
<td>.51</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep State Item</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye Catalepsy Item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Self-Reported Hypnotic Depth</td>
<td>.58</td>
<td>.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep State Item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>Self-Reported Hypnotic Depth</td>
<td>.57</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep State Item</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

about half the variance for hypnoidal state vis-à-vis self-reported hypnotic depth.

Cross-validation regression analyses. The unstandardized regression coefficients from the regression analyses for self-reported hypnotic depth (srHD) involving Study 1 participants (using the unstandardized regression coefficients of Table 1) were then used to generate a predicted self-reported hypnotic depth score for the participants of Study 2. The predicted srHD score was subsequently correlated with the actual srHD
scores for these participants. This resulted in a Pearson $r$ of .72 ($p < .0001$). Since the $R$ was .78 from the original study, this suggests mild shrinkage.

The unstandardized regression coefficients from the regression analysis for hypnoidal state involving Study 1 participants (using the unstandardized regression coefficients of Table 2) were used to generate a predicted hypnoidal state score for the participants of Study 2. The predicted hypnoidal state score was then correlated with the actual hypnoidal state scores for these participants. This resulted in a Pearson $r$ of .48 ($p < .0001$). Since the $R$ was .56 from the first study, this suggests mild shrinkage (see bottom two rows of Table 4). The cross-validation analysis suggests that the srHD score is more readily predicted across studies than is the hypnoidal state score.

**Discussion**

*Descriptive and Correlational Analyses*

The distributions of the srHD and the hypnoidal state scores are illustrated in Figures 1 and 2, respectively. Although Wagstaff (2010) suggests that the srHD score “is very similar to that found in the Long Stanford Scale of Hypnotic Depth (LSS), which is one of the most widely used measures of hypnotic depth in the literature” (p. 49), the LSS score is more positively skewed than the srHD score, that is, “a pronounced skew to the lower end” (Wagstaff et al., 2008, p. 133). We believe this is due to the nature of instructions for estimating the LSS, vis-à-vis the srHD, score.

The scoring for the LSS is as follows: “(0 = awake and alert, 1 = borderline, 2 = light, 5 = quite hypnotized, 8–9, very hypnotized, 10 = very deeply hypnotized; Tart, 1970)” (Wagstaff et al., 2008, p. 125). In contrast, for the srHD score, participants are told to answer “On a ‘1’ to ‘10’ scale, how hypnotized do you feel that you became. Let ‘1’ = not hypnotized at all, and let ‘10’ = the most hypnotized that you can imagine” (Pekala, Kumar, & Maurer, 2009, p. 18).

We feel the instructional set for the LSS that gives a “5” to “quite hypnotized” and a “8–9” to “very hypnotized”, results in less individuals choosing scores between “5” and “10,” since we feel there is not much differentiation between “quite” versus “very,” which results in a more skewed, less normal distribution than the srHD, which has a skewness of 0.20. Hence, the srHD score may be easier to use for statistical analysis purposes than the LSS score. Although Wagstaff et al. (2008) suggest that “it may, nevertheless, be the case that the skewed distribution [of the LSS] is a more accurate representation of psychological reality” (p. 134), we feel that the more skewed distribution of the LSS is likely an artifact of the instructional set.
When comparing the srHD and hypnoidal state scores, whereas the srHD score is more platykurtic (−.89), the hypnoidal state score is leptokurtic (.52). The hypnoidal state score is more negatively skewed (−.55); the srHD score is slightly positively skewed (.20). Whereas the srHD score is most highly correlated with the imagoic suggestibility (hypnotic dream) score, the hypnoidal state score is most highly correlated with the srHD score (see Table 4). The more likely participants felt they were asleep, then the more likely they reported not passing the finger response item (−.29, \( p < .01 \) - see Table 4).

The Regression Analyses

The cross-validation analysis generated a higher Pearson \( r \) for the self-reported hypnotic depth score, an \( r \) of .72 for the srHD score versus an \( r \) of .48 for hypnoidal state score. As we have argued in earlier papers (Pekala, 2010, 2011; Pekala et al., 2010a, 2010b), we believe this reflects the fact that these two variables are tapping different constructs. We believe the srHD score is an “attributional” variable that participants use as they try to estimate how deeply hypnotized they were. The srHD score is assessed near the very end of the postassessment debriefing form. We believe it represents a “summary” score as participants estimate how hypnotized they felt they became.

Table 8 gives a summary of the regression analyses, Table 8A for the srHD score and Table 8B for the hypnoidal state score. As the reader can see from Table 8A, when predicting the srHD score, whether using Study 1 (Table 1) or Study 2 (Table 5), both imagoic suggestibility and hypnoidal state are left in the regression. When looking at predicting hypnoidal state, imagoic suggestibility is listed in two of the four sets of analyses (Tables 2 and 6), the eye catalepsy item is listed in two of the four sets of analyses, and the sleep state item is listed across all four sets of analyses. It appears that the hypnoidal state item is associated with the feeling of falling asleep in a manner that is not the case with the self-reported hypnotic depth score.

The hypnoidal state score, we believe, is tapping into Weitzenhoffer’s (2002) conceptualization of hypnosis: “I will otherwise generally reserve the term hypnosis for the ‘state’ [our quotes] 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). Hence, the hypnoidal state score, we believe, is tapping or estimating what clinicians typically call “trance,” as related to hypnotism.

According to Weitzenhoffer (1989a) the term, trance “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 [emphasis added]. Decreased sensitivity or
responsiveness to external stimuli, including a total lack of it, is usually considered a characteristic feature, as is a shift from voluntary to automatic activity” (1989, p. 298).

The more the participant felt that they were asleep, the higher the hypnoidal state score, as supported by the correlation of .35 between hypnoidal state and the sleep state item (see Table 4). This communality of hypnosis, or trance, and sleep is also supported, we believe, by the inclusion of the sleep state item in several regression equations for predicting the hypnoidal state score.

Additionally, in contrast to Weitzenhoffer’s assertion in 2002 that hypnotic depth scales may be “lacking in solid evidence” (p. 214) when talking about LeCron (1953) type scales, the present research adds some support to the self-reported hypnotic depth (srHD) score and also the hypnoidal state score, as assessed by the PCI–HAP, as tapping into different aspects of a person’s hypnotic responsivity. Use of these concepts may have relevance to helping to better understand the nature of hypnotism, as defined by Weitzenhoffer, and hypnotic susceptibility, as defined in the literature, as Laurence and Nadon (1986) have indicated.

Limitations

There are various limitations associated with the results reviewed above. A participant’s level or hypnotic depth can vary during a hypnotic protocol and is probably a function of several variables. Hence, it is not yet known to what extent the hypnoidal state score, or the PCI (sub)dimensions scores of which the hypnoidal state score are a function, would be significantly different had a different time period during the hypnotic induction been sampled. In addition, completing the PCI in reference to a 2-minute sitting quietly period during the Harvard would presumably be quite different from completion of the PCI in reference to the eye catalepsy item, the hypnotic dream item, or the finger response item, due to the principle of stimulus state specificity. This principle posits that

across groups of randomly selected individuals, the same behaviors in the same stimulus settings (the same stimulus conditions) will be associated with the same intensities and patterns of phenomenological experience (the same phenomenological state), while different stimulus conditions will be associated with different intensities and/or patterns of phenomenological experience. (Pekala & Wenger, 1983 p. 255)

This principle was posited so that comparisons between differing stimulus conditions and variations in phenomenological experience associated with those stimulus conditions could be validly assessed during retrospective phenomenological assessment (RPA). The reader is referred to Pekala (1991a) for a review of data in support for this principle and how this principle may modulate and hence impact the
usefulness of this phenomenological approach for quantifying consciousness, in addition to other issues related to RPA.\textsuperscript{7}

Previous research (Pekala, 1980; Pekala & Levine, 1981, 1982; Pekala & Wenger, 1983) reported that the variability during RPA appears dependent upon the instructional set, the context, the nature of the stimulus condition assessed, and individual differences factors. Hence, there is need for more basic research on this phenomenological assessment approach to consciousness and its use with various types of stimulus conditions, hypnotism included.

To date, the PCI has been used in reference to such stimulus conditions (other than hypnotism) including meditation (Venkatesh, Raju, Shivani, Tompkins, & Meti, 1997), fire walking (Hillig & Holroyd, 1997/1998; Pekala & Ersek, 1992/1993), an out-of-the-body experience within a near-death experience (Maitz & Pekala, 1991), shamanistic trances (Rock, Wilson, Johnston, & Levesque, 2008), religious/spiritual narratives (Wildman & McNamara, 2010), a virtual reality environment (Huang, Himle, & Alsip, 2000), drumming (Maurer et al., 1997), and psi phenomena (Rock & Storm, 2010).

The nature of one’s subjective experience, as the functionalists (Angell, 1907; James, 1890/1950; Titchener, 1898) documented a century ago, appears to be dependent upon instructional and contextual effects, the nature of the design and procedures associated with the stimulus condition for which subjective experience is assessed, and individual differences in phenomenological experience across participants (Pekala 1980, 1991a). Slightly changing the instructional set/stimulus environment may hence have a significant impact upon the phenomenology that is reported. Due to the lower test-retest reliabilities of the PCI (sub)dimensions (Pekala, 1980, 1991a; Pekala et al., 2010a, 2010b) than are usually found with trait instruments, larger numbers of participants are probably needed to replicate the aforementioned results than might

\textsuperscript{7}No doubt, how participants rate the PCI dimensions (from which the hypnoidal state score is obtained) will be a function of the participant’s subjective experience and their ability to remember, as opposed to inferring, that experience. Results of such retrospective phenomenological assessment (RPA) may also be a function of expectancy effects (Kirsch, 1985) and demand characteristics (Orne, 1962), etc. Prior research (Pekala et al., 2010b) suggested that about 30\% of the relative variance associated with ones self-reported hypnotic depth was a function of expectancy effects. Completing the PCI in reference to a sitting quietly period during hypnotism may generate different phenomenological experiences than when completed in reference to a sitting quietly period during visualization, due to such expectancy effects. As an example, Gandhi and Oakley (2005) found that labeling a procedure “hypnosis” produced different results than labeling the protocol “visualization.” In conclusion, little research has been done, to date, concerning basic RPA research. Some of the issues that plagued the classical introspectionists 100 years ago (see Boring, 1921, 1953) may also be operating here (see Pekala, 2009a, 2009b, 2010, 2011, for a more in-depth review of some of these issues). Hence, much more basic RPA research appears warranted.
be the case had trait (instead of state) measures been used. These are all important areas that will need to be addressed in future studies.

Conclusions

Twenty-five 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). We believe that such sophistication will accrue as we integrate phenomenological analyses (Pekala, 2011) with neurophysiological (Jamieson, 2007; Jamieson & Hasegawa, 2007) and cognitive-behavioral approaches (Terhune & Cardeña, 2010) for investigating hypnosis/hypnotism. The present research hence adds some support to the self-reported hypnotic depth score as an attributional measure of a participant’s assessment of their hypnotic depth and the hypnoidal state score as an estimate of Weitzenhoffer’s conceptualization of “trance.” Yet, more research needs to be done with other populations and by other labs to help determine the validity of these concepts in furthering our understanding of hypnotism and hypnotic responsivity. The results we believe also support the use of this methodology (Pekala, 1991a, 1995a, 1995b, 2002, 2009a, 2010, 2011; Pekala & Kumar, 2000, 2007) as a means, in conjunction with cognitive-behavioral and neurobiological approaches, to further explore and to help explicate the mystery of hypnosis/hypnotism.

References


Vergleichsprüfung auf ein $R$ von 0,48 sank. Diese und andere Ergebnisse lassen darauf schließen, daß trotz einiger Widersprüche die Skala der subjektiven Trancetiefenbewertung ein abweichendes Konstrukt der Skala des hypnotischen Zustandes ist.

**Stephanie Reigel, MD**

Une validation croisée de deux mesures différentes de profondeur hypnotique

Ronald J. Pekala et Ronald L. Maurer

Résumé: Plusieurs séries de tests de régression ont été effectués afin de tenter de prédire deux degrés de profondeur hypnotique: la profondeur hypnotique autosignalée et le score d’état hypnotique évalué selon des variables de l’inventaire de la phénoménologie de la conscience - Procédure d’évaluation hypnotique (PCI–HAP). Durant un essai visant à prédire la profondeur hypnotique autosignalée, un $R$ de 0,78 chez les participants à l’Étude 1 a atteint 0,72 chez les participants à l’Étude 2, indiquant une légère diminution pour cette mesure plus attributionnelle de profondeur hypnotique. Un essai visant à prédire l’état hypnoïde (une estimation de la transe) à l’aide de la même procédure a donné un $R$ de 0,56, lequel a atteint 0,48 après évaluation croisée. Ces résultats, ajoutés à d’autres, indiquent que malgré une certaine variance commune aux deux états, la profondeur hypnotique autosignalée semble provenir d’un construct différent de celui de l’état hypnoïde.

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Una validación cruzada de dos mediciones distintas de profundidad hipnótica

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Resumen: Varios conjuntos de análisis de regresión se completaron, en un intento de predecir 2 medidas de profundidad hipnótica: la puntuación del autoreporte de profundidad hipnótica y la puntuación del estado hipnoidal a partir de variables del Inventario de la Fenomenología de la Conciencia: Procedimiento de Evaluación Hipnótica (PCI–HAP). Al intentar predecir la profundidad hipnótica autoreportada, la R de .78 con participantes en el Estudio 1 se redujo a una R de .72 con los participantes del Estudio 2, sugiriendo una reducción leve para esta medida atribucional de profundidad hipnótica. Al intentar predecir el estado hipnoidal (una estimación de trance) usando el mismo procedimiento, resultó una R de .56, que al hacer una validación cruzada se redujo a una R de .48. Estos y otros resultados sugieren que aunque existe varianza común, la puntuación del autoreporte de profundidad hipnótica aparentemente está evaluando un constructo distinto a la puntuación del estado hipnoidal.

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