A Componential Approach to Individual Differences in Hypnotizability

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Abstract

Although responsiveness to hypnotic suggestions (hypnotizability) typically is conceptualized and studied as a singular homogeneous capability, numerous lines of evidence suggest instead that it is a hierarchically-structured cognitive capacity comprising a core superordinate ability and ancillary subordinate component abilities. After reviewing current approaches to the measurement of hypnotizability and componential approaches to other cognitive capabilities, we highlight outstanding questions in the field and argue for a componential approach to the study of hypnotizability. Such an approach assumes that hypnotizability is not a unitary construct but is rooted in multiple sub-abilities that interact to give rise to individual differences that are expressed within specific contexts. We revisit previous componential work on hypnotizability and propose a series of steps by which a componential model can be more rigorously interrogated and integrated with contemporary advances in our understanding of human cognition.

Keywords: hypnosis, hypnotizability, componential approach, suggestion, suggestibility

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In hypnosis, mere words can have remarkable effects on some people. When given specific hypnotic suggestions, an individual might feel their arm is paralyzed, they cannot speak or they cannot remember (Kihlstrom, 2008). Whether in the laboratory or the clinic, hypnotic experiences often feel surprisingly easy and exceptionally real (Barnier, Dienes, & Mitchell, 2008) as well as outside the person's control (Bowers, 1981; Polito, Barnier, Woody, & Connors, 2014). People who are highly responsive to hypnotic suggestions comprise approximately 10-15% of the population (Woody & Barnier, 2008). Their ability to respond to suggestions is related to important aspects of their everyday lives, both positive and negative (for review, see Barnier & Council, 2010). For example, high hypnotizability facilitates the effectiveness of some psychotherapeutic treatments including hypnotic interventions (e.g., Jensen & Patterson, 2008; Thompson, Terhune, Oram, Sharangparni, Rouf, Solmi, Veronese, & Stubbs, 2019) and predicts responsiveness to non-hypnotic verbal suggestions and placebo/nocebo manipulations (e.g., Derbyshire, Whalley, & Oakley, 2009; Nitzan, Chalamish, Krieger, Erez, Braw, & Lichtenberg, 2015;). Hypnotizability also acts as a vulnerability factor for dissociative psychopathology (Bell, Oakley, Halligan, & Deeley, 2011).

The ability to respond to hypnotic suggestions is a fascinating cognitive capability partly because of the power of verbal suggestions to modulate action, perception, cognition and affect in striking ways. And it is fascinating because even two hundred years after the first recognition of individual differences in hypnotizability (Laurence, Beaulieu-Prévost, & du Chéné, 2008), our understanding of the source of this variation remains incomplete. In this paper, we: (1) briefly review current methods for measuring hypnotizability, their strengths and shortcomings; (2) discuss the value of a *componential* approach to understanding individual differences in hypnotizability; (3) suggest a set of steps to integrate a componential approach with contemporary research on the cognitive-perceptual underpinnings of hypnotizability; and (4) consider the value of this componential approach to our understanding of hypnosis in the laboratory and clinic.

Measuring Individual Differences in Hypnotic Responsiveness

The ability to respond positively to hypnotic suggestions – hypnotizability – typically is measured by administering a standardized scale comprised of a hypnotic induction and then a sequence of suggestions (Barnier & Oakley, 2009). Hypnotic suggestions on these scales generally fall into one of three well-established types: *direct ideomotor* items suggest a motor action (e.g., "Your outstretched hands are moving apart"); *challenge ideomotor* items suggest a state of affairs and challenge participants to overcome it (e.g., "Your eyes are so tightly shut that you cannot open them. Try to open them"); and *perceptual-cognitive* items suggest alterations in perception, memory, belief or emotion (e.g., "You will not remember anything that happened"). A person is scored as passing or failing each suggestion according to pre-determined behavioral criteria (Barnier & McConkey, 2004) and his or her hypnotizability typically is calculated as the total number of items passed.

The development of carefully constructed, psychometrically sound hypnotizability scales in the early 1960s, such as the *Stanford Hypnotic Susceptibility Scale, Form C* (SHSS:C; Weitzenhoffer & Hilgard, 1962) and the *Harvard Group Scale of Hypnotic Susceptibility, Form A* (HSGHS:A) (Shor & Orne, 1962), gave researchers from across the world a common language and standard for hypnotizability. This enabled a flowering of empirical work as well as the ability to replicate and extend each other's findings. Hypnosis research using these measures has probed the underlying nature and consequences of hypnotizability as well as used hypnosis to shed light on psychological phenomena such as consciousness, cognitive control, imagery, volition, delusions and hallucinations, and memory (Barnier, Cox, & McConkey, 2014; Oakley & Halligan, 2013).

One reason that standardized scales have been such a boon to research is that individuals with different levels of hypnotizability can be identified and selected for studies, which both increases statistical power of the work and allows us to ask questions about mechanisms (Sheehan & Perry, 1976). When administered a standardized scale, 10-15% of people pass none or only a few items and thus are “low hypnotizable” (hereafter “lows”); 70-80% pass some but not other items and thus are “medium hypnotizable” (hereafter “mediums”); and 10-15% pass all or most items and thus are “high hypnotizable” (hereafter “highs”). Hypnotizability is stable across the adult lifespan with test-retest correlations after 10, 15 or 25 years ranging from .64 to .71 to .82 (Piccione, Hilgard, & Zimbardo, 1989).

Although most theories of hypnosis recognize individual differences in hypnotizability, many are relatively silent on their source. In pioneering work, Josephine Hilgard and Arlene Morgan explored childhood pathways to hypnotic ability and its genetic underpinnings suggesting, for instance, that imaginative involvement (whether through play, storytelling or perspective taking) both develops and potentially preserves hypnotizability (e.g., Morgan & Hilgard, 1973). However, recent research has not capitalized enough on these insights to confirm how individual differences in hypnotizability arise in childhood or otherwise. Moreover, despite the important role of existing hypnotizability scales, they fail to capture at least some individual difference components of importance.

As just one example, consider a neuroimaging study of auditory hallucinations that used hypnosis as a method for producing hallucinations on demand (Szechtman, Woody, Bowers, & Nahmias, 1998). By supplementing a standardized hypnosis scale with a separate assessment to evaluate responses to a variety of suggested hallucinations, Szechtman and colleagues preselected two contrasting subgroups of participants with comparably high levels of hypnotizability: those who could produce hypnotic hallucinations and those who could not. These two groups yielded different patterns of hypnotic behavior, experience and brain activation. Such results indicate that existing hypnotizability scales do not rigorously measure some nuanced components or underlying abilities of hypnotic responding, which may be essential both for understanding hypnosis and for using it as a tool in psychology and neuroscience (Barnier et al., 2014; Terhune, Cleeremans, Raz, & Lynn, 2017).

Sadler and Woody (in press) reviewed major developments in hypnosis research over the second half of the twentieth century, and pointed out that the study of hypnotic phenomena (including overt responses, subjective experiences and underlying mechanisms) has yielded intriguing evidence that individual differences in hypnotic responsiveness are driven by multiple underlying components that are important to distinguish. Nonetheless, for the most part, hypnosis researchers have not systematically followed up these lines of evidence. Instead, most hypnosis research has assumed that the diversity of response to hypnosis is largely reducible to differences in degree along a unitary construct of hypnotizability, presumed to represent a common underlying mechanism. Indeed, the vast majority of research on correlates of hypnotizability and the characteristics of high hypnotizability treats hypnotizability as a single variable (see Laurence et al., 2008; Terhune et al., 2017; but for early exceptions, see Glisky, Tataryn, Tobias, Kihlstrom, & McConkey, 1991; Roche & McConkey, 1990).

Although highs might be more responsive to hypnotic suggestions than mediums or lows, this does not mean that all highs, mediums or lows respond to the same sets of suggestions or via the same mechanism(s) (Woody & McConkey, 2003). One person scoring 8 on a standardized measure of hypnotizability is not necessarily the same as another person scoring 8 because there are, in fact, 495 ways to score 8 on the HGSHS:A or SHSS:C (Woody & Barnier, 2008). This theoretical variability would be uninteresting if items on standardized hypnotizability scales loaded on a single factor. However, evidence to date suggests that hypnotizability is best modeled by a single higher-order latent factor (perhaps representing a core or superordinate ability) and a set of important, specific factors that reflect subordinate abilities (Woody, Barnier, & McConkey, 2005). It follows that passing different suggestions may involve different underlying abilities. This possibility highlights a need to reconsider and revise both the manner in which we measure hypnotizability and study its correlates.

A Componential Approach to Hypnotizability

In the past 30 years, our understanding of many cognitive capabilities has been significantly improved by the adoption of a *componential* approach. For instance, researchers have successfully decomposed face recognition (Bruce & Young, 1986), speech production (Levelt, Roelofs, & Meyer, 1999), spelling (Rapp, Epstein, & Tainturier, 2002), reading (Coltheart, 2012) and other broad cognitive capabilities into their component abilities. The notion that hypnotizability likewise is composed of multiple distinguishable components is not new. It has been an intermittent but important theme in hypnosis research. For instance, Weitzenhoffer and Hilgard (1967) developed advanced hypnosis scales (the *Stanford Profile Scales*) that attempted to portray high hypnotizability in terms of a profile of separable abilities; unfortunately, these scales have almost never been used (e.g., Terhune, Cardeña, & Lindgreen, 2011a, 2011b). Balthazard and Woody (1985, 1989) argued that conceptual and methodological impasses in interpreting previous factor analyses of hypnosis scales could be overcome by adopting a componential approach.

Building on such ideas, Woody and McConkey (2003) described a componential approach to hypnotizability, which Woody et al. (2005; see also Woody & Barnier, 2008) empirically investigated in one of the few componential studies in the literature. They pooled data from two scales (HGSHS:A and SHSS:C) administered to over 600 participants, calculated pass rates for each of the 23 suggestions and subjected the data to Full Information Factor Analysis (Bock & Aitkin, 1981; Bock, Gibbons, & Muraki, 1988). They identified a *General Hypnotizability* factor and four additional factors: a *Direct Motor* factor, important for enacting suggestions involving motor responses (e.g., hands moving apart); a *Motor Challenge* factor, important for enacting suggestions that inhibit motor responses (e.g., eye catalepsy); a *Perceptual Cognitive* factor, important for enacting suggestions for hallucinations (e.g., voice hallucination); and a *Posthypnotic Amnesia* factor, important for enacting suggestions that temporarily impair memory (e.g., forgetting the preceding suggestions). Each component explained unique variance in responsiveness to hypnotic suggestions above and beyond the general factor, and differentially predicted response to motor, hallucination and amnesia suggestions in subsequent experiments (Woody et al., 2005).

Importantly, each of the four secondary factors depended on general hypnotizability as well as the contribution of unique latent abilities, which may correspond to the component abilities originally proposed by Woody and McConkey (2003) and foreshadowed in earlier generations of work by, for instance, Shor, Barber, Sheehan and McConkey (Barber, 1999; McConkey & Barnier, 2004). These findings collectively suggest that hypnotizability is a hierarchically-structured skill comprised of a core latent, general ability that facilitates responsiveness to (hypnotic) suggestions and at least four latent, ancillary component abilities that contribute to variability in responsiveness to specific suggestions.

This pattern of a general factor and four additional factors can be considered the current best model of the structure of hypnotizability.

Despite the success of these analyses, this model has several shortcomings. First, the factors were constrained by the suggestion item pool, which was drawn from two 60-year-old scales that do not adequately sample the full range of behavioral and cognitive alterations experienced during hypnosis (Woody & Barnier, 2008). Second, data for this analysis were based on binary (pass/fail) responses, which incorrectly assume that hypnotic responding is an all-or-nothing phenomenon (Terhune, 2015). Third, not all the scale items analyzed by Woody and Barnier robustly invoke the feeling of involuntariness that characterizes classic hypnotic phenomena (Bowers, Laurence, & Hart, 1998). Indeed, more recent work inspired by componential approaches suggests that involuntariness during hypnotic responding offers an important window on individual differences (e.g., Polito et al., 2014; Terhune, Cardeña, & Lindgren, 2011a). Fourth, not all the existing items have good ecological validity, as many have no bearing on suggestions that currently are used in clinical (e.g., hypnoanalgesia) or experimental (e.g., delusions) contexts. For example, an individual's ability to experience the suggestion of a fly buzzing around is largely irrelevant to clinical applications of hypnosis. Finally, the latent abilities that seem to underlie responsiveness to different hypnotic suggestions remain to be specified. It is imperative that we connect these latent abilities both theoretically and empirically to specific, directly measurable cognitive processes.

Overcoming these shortcomings will require a thorough reconsideration of the domain of hypnotic suggestions and the development of a more comprehensive, carefully constructed inventory of hypnotizability that captures and characterizes these unique abilities (Weitzenhoffer, 1997; Woody & Barnier, 2008; Woody et al., 2005; Woody &

McConkey, 2003). Rather than attempting this comprehensive approach, recent hypnosis scale development largely has adopted the framework of existing scales and aimed mainly for increased utility, which remains an important consideration. For instance, the *Sussex-Waterloo Scale of Hypnotic Susceptibility* (Lush, Moga, McLatchie, & Dienes, 2018), an adaptation of the earlier *Waterloo-Stanford Group Scale of Hypnotic Susceptibility, Form C* (Bowers, 1998; itself a group adaptation of the SHSS:C (Weitzenhoffer & Hilgard, 1962)) and the *Elkins Hypnotizability Scale* (Elkins, 2014) were both designed to provide time-efficient screening of hypnotic ability.

It is no small undertaking to develop scales for measuring hypnotizability in a way that allows us to identify underlying component abilities. Nonetheless, the fact that multiple components are at work in hypnosis continues to be clearly demonstrated in an important strand of hypnosis research examining the properties of hypnotic response in finer detail. In particular, even among those who successfully enact hypnotic suggestions, there is important heterogeneity in the underlying response patterns and mechanisms by which they do so (e.g., Carlson & Putnam, 1989; King & Council, 1998; Sadler & Woody, in press; Terhune & Cardeña, 2015). However, the focus on high hypnotizable individuals in this work leaves unexamined the broader range of components that underlie the entire distribution of hypnotizability. What would be the potential benefits of such a componential undertaking, and what would this program of research look like?

Towards an Empirically-Grounded Componential Approach to Hypnotizability

If we apply a cognitive decomposition approach to the hypnotizability we will be able to identify: (1) sets of distinguishable abilities that underlie hypnotizability, (2) distinct individual-difference profiles of performance across distinct types of hypnotic suggestions, and (3) different subtypes of individuals of similar hypnotizability levels, indicating alternative pathways or underlying mechanisms. Studying hypnotizability within the context of a componential model suggests a wealth of new research avenues and the potential for significant advances in our understanding of hypnosis and its clinical application. However, such an approach also brings multiple challenges that require substantial changes in the ways in which we think about and measure hypnotizability. Here we outline a possible set of steps by which a componential model might be more fully realized. We hope that our broad goals and these recommendations motivate a new generation of research on individual differences in hypnotizability (Woody & McConkey, 2003).

In order to fully understand the structure of hypnotizability and elucidate the cognitive mechanisms underlying hypothesized component abilities we believe that it is necessary to develop a new hypnotizability inventory (Woody & Barnier, 2008). At a practical level, this will involve developing a new, large battery of suggestions that more fully maps the multi-dimensional space of hypnotizability. Unlike previous scales that unevenly sample different item content, and thus vary in the precision with which component abilities are measured (e.g., the HGSHS:A is dominated by motor items), we need to develop and select items that broadly sample the underlying types of item content, motivated by Woody and Barnier's (2008) current best model and principles of Facet Theory (Shye, Elizur, & Hoffman, 1994). Specifically, we must include items that sample across different content (motor vs perceptual-cognitive), direct versus challenge, timing of response (hypnotic vs posthypnotic), response type (active vs withholding response) and level of difficulty (Woody & Barnier, 2008; Woody et al., 2005). In addition, whereas many previous scales (especially the oldest scales) focus only on participants' behavioral responses to items, a new inventory must assess both behavioral responses (e.g., using Likert scales of pre-determined criteria) and experiential responses, for example by incorporating recent work by Polito and colleagues on subjective alterations in the sense of agency in hypnosis (e.g., Polito, Barnier, & Woody, 2013).

After constructing this preliminary battery of candidate items, it will be useful to administer the inventory to a large sample of participants and perform exploratory factor analysis on behavioral and subjective responses. The factor structure that emerges from this analysis will start to map key components of hypnotizability. We should validate this mapping with confirmatory factor analysis of a second large sample's set of responses as well as by comparing the emergent structure to Woody et al.'s (2005) results. We have successfully used a similar approach to understand individual differences in the sense of agency in hypnosis (e.g., Polito et al., 2013; Polito et al., 2014). By creating and testing a properly balanced set of suggestions, this empirically-grounded componential model of hypnotizability will address shortcomings of earlier work (e.g., Woody et al., 2005). We might also try to identify individuals who perform high or low on each of the identified factors or components (e.g., with Latent Profile Analysis or Q-Mode Factor Analysis), highlighting subtypes of hypnotic responding and patterns of related hypnotic abilities across individuals. As a final step in the scale construction phase, we should confirm convergent and discriminant validity by comparing our new inventory to earlier scales such as the SHSS:C (Weitzenhoffer & Hilgard, 1962), the current gold standard measure of hypnotizability. Although a new inventory constructed following the steps outlined here should yield superior measurement of a wider set of component abilities than the SHSS:C, we expect that total hypnotizability scores will be highly correlated across new and old measures.

Following the development of a new componential inventory and model of hypnotizability, which offers a more refined, representative and ecologically valid account of the structure of hypnotizability, we need to identify and explain the cognitive underpinnings of different component abilities. Previous generations of research typically have looked for (self-reported) personality correlates of a poorly defined, uniform conceptualization of hypnotizability with limited success (Laurence et al., 2008). By contrast, we suggest that a revised componential model of hypnotizability will provide a more robust and sensitive framework for understanding and identifying (via correlates) the cognitive mechanisms underlying hypnotizability. For example, whereas imagery and imagination have been relatively poor predictors of general hypnotizability, they may be valuable in accounting for individual differences in component abilities (Terhune & Oakley, in press). Insofar as the revised componential model remains as-yet unspecified, we can only speculate on cognitive factors (and relevant correlates) that are related to hypothetical component abilities. Nevertheless, Table 1 starts the process of proposing underlying component abilities and potential performance or self-report correlates or measures of these underlying abilities. For instance, the current best model would suggest that general hypnotizability should be associated with a general preparedness to respond (i.e., a positive attitude towards hypnosis and willingness to attempt suggestions) and the ability to experience agency alterations, whereas each of the four additional factors should be associated with more specific abilities that enable each class of response (such as delusion proneness, dissociation, or fantasy proneness for the Perceptual-Cognitive Primary Factor; McConkey & Barnier, 2004; Woody & McConkey, 2003). We expect that the search for correlates of component abilities will be more successful than the longstanding and mostly unsuccessful search for correlates of summed overall hypnotizability scores from measures not designed to distinguish underlying determinants of variability in hypnotic responding (Laurence et al., 2008). A focus on component abilities also will help us answer in more nuanced ways "second generation" questions such as the potential impact of labelling a context as "hypnosis" (Woody & McConkey, 2003). Providing suggestions in a context that avoids any mention of hypnosis may modify the underlying nature of the components or how they are organized.

The Value of a New Approach and a Call to Collaborative Arms

Measuring, mapping and modelling the capacities that underlie hypnotic performance, via the kinds of steps laid out above, offers the promise of clarifying the place of hypnotizability in human cognition as well as propelling the field of hypnosis to new generations of theories, research and applications. Advancing our knowledge of hypnotizability also will have important practical benefits in the laboratory and clinic.

In the laboratory, specific hypnotic suggestions can create powerful "analogues" of cognitive phenomena or clinical symptoms, turning hypnotizable people into temporary "virtual patients" we then study under controlled conditions (Woody & Szechtman, 2011). Neuroscientists, cognitive psychologists and cognitive neuropsychologists have used this valuable approach to study, for instance, hallucinations and delusions, functional amnesia, blindness, pain and paralysis, and obsessive-compulsive disorder and the suppression of unwanted thoughts and emotions (Barnier et al., 2014; Oakley & Halligan, 2013). Consider, for example, a neuroscientist who studies neural substrates of color hallucinations. High hypnotizables with relevant component abilities can experience such hallucinations readily in response to suggestion; thus, hypnosis potentially can help this researcher. But not all highs experience visual hallucinations and we don't know why. With current assumptions and methods, selecting people with the right abilities for such experiments is laborious. Also, because we don't understand the underlying nature of hypnotizability well enough, researchers cannot be sure how closely a hypnotized individual's experience of a phenomenon (e.g., hypnotic hallucination) maps onto the nonhypnotic phenomena we use hypnosis to model (e.g., clinical hallucinations) (e.g., Vuilleumier, 2014).

As a way of solving these problems, the approach advocated here retains from earlier work an appreciation of the pervasive role of general hypnotizability but differs crucially in advocating much greater attention to specific component abilities that come into play in hypnosis; for example, the component abilities that underlie such distinct hypnotic phenomena as hallucinations versus analgesia. Past practice may have shortchanged these specific components. For instance, Hilgard, Crawford, Bowers, and Kihlstrom (1979) advocated a “tailored” SHSS:C in which a suggestion relating to a specific component of interest is substituted for one of the twelve standardized suggestions (alongside a stable of other valuable Stanford adaptations including for children and clinical settings; London & Cooper, 1969; Morgan & Hilgard, 1978-1979). Unfortunately, such a single-item measure, added idiosyncratically from researcher to researcher, is unlikely to tap a specific component reliably or validly. We believe the time has come to take the measurement and characterization of such specific components more seriously and to better exploit their potential for predicting and understanding the corresponding response domains.

A new componential understanding of hypnotizability also should help clinicians to use hypnosis more efficiently, economically and powerfully as they treat psychological and physical symptoms such as anxiety, depression, habit disorders, trauma and pain (Moore & Tasso, 2008). Economic and meta-analyses show that hypnotic treatments can lead to long-lasting effects (Kirsch, Montgomery, & Sapirstein, 1995) and cost half as much as traditional treatments (Lang & Rosen, 2002). For example, pain researchers argue that hypnosis should be a first line treatment because it is low cost, often successful and has virtually no negative side effects (Jensen & Patterson, 2008). However, not all people benefit from a hypnotic pain intervention and we do not know why (Jensen & Patterson, 2008). Indeed, hypnotizability as measured by our current scales predicts response to treatment of clinical pain only weakly (Patterson & Jensen, 2003). By providing new insights and relevant componential measurement tools (for example, an inventory subset that samples components of particular relevance to pain control), clinicians may be more able to accurately predict treatment success or failure as well as match patients and their abilities to appropriate interventions.

Although the approach advocated here would involve the consideration of a particularly extensive inventory of different types of hypnotic suggestions, it does not follow that any resulting practical instruments would be of prohibitive length. For example, with regard to pain control, the benefit of this componential research for clinicians would be: (1) to better delineate cognitive factors specifically related to hypnotic analgesia, and (2) to identify hypnotic items that most robustly predict analgesia response, which could be used in an abbreviated scale targeted for this specific use. More generally, the proposed program of research may generate multiple subscales from which a subset relevant to a problem of interest can be selected and used independently in a reasonably brief manner, marrying new conceptual insight and predictive power with practical utility.

The development of our current gold standard measures of hypnotizability, such as the SHSS:C and the HGSHS:A, coincided with a golden age of hypnosis research in the middle of the 20th century, especially in the “big five” hypnosis laboratories of North America and Australia: E. R. and J. R. Hilgard’s at Stanford University; M. T. and E. C. Orne’s at Harvard University and later at the University of Pennsylvania; T. X. Barber’s at the Medfield Foundation; T. R. Sarbin’s at the University of California, Berkeley; and A. G. Hammer and J. P. Sutcliffe’s at the University of Sydney (McConkey, 2008). These laboratories hosted large and highly productive research programs with motivation and resources to explore both intrinsic and instrumental questions about hypnosis, including the creation of the standardized measures that put experimental hypnosis research on a sound scientific footing. Current hypnosis research arguably is more dispersed across countries, laboratories, research enterprises and disciplines. This represents a great success in terms of Hilgard's (1971) "domestication of hypnosis" but makes it much less likely that any single research or clinical group has resources to independently develop a new, rigorous componential model, inventory and practical subscales as described above. An alternative path to meeting this challenge is adopting Open Science, Big Data and other distributed yet coordinated scientific approaches (such as the Psychological Science Accelerator or StudySwap; Chartier, Riegelman, & McCarthy, 2018; Moshontz, Campbell, Ebersole, IJzerman, Urry, Forscher, … & Chartier, 2018). Collaborating across the world and across our research or clinical teams, together we might harness the power of a componential approach and take the next major steps needed to illuminate the nature, uses and wider implications of individual differences in hypnotizability.

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Table 1

Potential Performance or Self-Report Correlates/Measures of Proposed Underlying Component Abilities in Hypnotizability

***General Hypnotizability* Factor and Four Additional Factors**	**Proposed Underlying Component Abilities**	**Examples of Potential Performance or Self-Report Measures**
General Hypnotizability	Preparedness to respond	Attitudes to Hypnosis Scale (Capafons, Cabañas, Espejo, & Cardeña, 2004) Social Desirability Scale (Stöber, 2001)
	Agency alterations	Force Matching (Shergill, Bays, Frith, & Wolpert, 2003)
Direct Motor	Response facilitation	Simple Reaction Time Task (Braffman & Kirsch, 2001)
	Metacognition	W-Judgement Task (Libet, Gleason, Writh, & Pearl, 1983)
	Motor intention awareness	Adapted Libet Task (Lush, Naish, & Dienes, 2016)
Motor Challenge	Response inhibition	Go/No-Go Task (Jodo & Kayama, 1992)
	Metacognition	W-Judgement Task (Libet et al., 1983)
Perceptual-Cognitive	Absorption	Tellegen Absorption Scale (Tellegen & Atkinson, 1974)
	Delusion proneness	Peters Delusional Inventory (Peters, Joseph, Day, & Garety, 2004) Jumping to Conclusions (Fine, Gardner, Craigie, & Gold, 2007)
	Dissociation	Dissociative Experiences Scale (Bernstein & Putnam, 1986)
	Fantasy proneness	Creative Experiences Questionnaire (Merckelbach, Horselenberg, & Muris, 2001)
Posthypnotic Amnesia	Dissociation	Dissociative Experiences Scale (Bernstein & Putnam, 1986)
	Source monitoring	Imagination Inflation Task (Garry, Manning, Loftus, & Sherman, 1996)