

## ON THE VIRTUES OF VIRTUOSOS

**Erik Z. Woody<sup>1</sup> and Pamela Sadler<sup>2</sup>**

*<sup>1</sup>University of Waterloo, Ontario, Canada and <sup>2</sup>Wilfrid Laurier University, Waterloo, Ontario, Canada*

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### **Abstract**

We contrast the proposals of Kallio and Revonsuo (2003) with some of Ernest Hilgard's classic innovations in hypnosis research. In particular, we note some empirical difficulties with the reliance on hypnotic virtuosos as the basis of hypnosis research, rather than Hilgard's dimension-based individual-differences method. We also discuss the idea that deceptive hypnotic suggestions may have important properties that the more usual, invitational hypnotic suggestions lack.

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**Key words:** hallucination, hypnosis, hypnosis scales, hypnotic virtuoso

At the heart of the target article by Kallio and Revonsuo (2003) is a call for revolution. To appreciate this, it is useful to provide a brief historical context.

As is well known, Jack Hilgard and his colleagues at Stanford University in the 1950s, 60s, and 70s virtually invented modern hypnosis research. One of their seminal contributions was methodological: they developed standardized scales for measuring hypnotic responsiveness, whereby a person's standing on an underlying, reasonably normally distributed trait is indexed by the total number of suggestions passed (Hilgard, 1965). With this development, the overwhelmingly prevailing paradigm in hypnosis research became to pretest people on such scales and select relatively high scorers and relatively low scorers to contrast in studies of hypnotic phenomena. This approach 'domesticated' hypnotic responsiveness, so to speak: rather than seeming strange and intractable, it could be studied just like any other psychological trait such as intelligence.

A second seminal contribution of Hilgard was theoretical. His neodissociation theory proposed that in hypnosis the executive system becomes divided into two parts, with parallel, dissociated streams of consciousness (Hilgard, 1977). This conceptualization not only offered an explanation of many otherwise odd and singular phenomena in hypnosis (such as the 'hidden observer'), but also it connected these phenomena with everyday, nonhypnotic events, such as action slips, which were proposed to be relatively minor instances of the same mental mechanisms. Like the invention of the standardized scales, neodissociation theory helped to make hypnosis a more mainstream topic in psychology, in particular by embedding it in the broader landscape of everyday, nonhypnotic processes of cognition and attention.

In effect, Kallio and Revonsuo (2003) urge us to overturn much of this legacy of Hilgard, both the theory and the methodology. Concerning neodissociation theory, they

state that ‘we are suspicious about any use of the concept which implies that our normal integrated phenomenal consciousness could somehow be divided into two isolated but simultaneous streams by a hypnotic induction’ (p. 144). Instead, they cite the dissociated control theory of Bowers (1992) and Woody and Bowers (1994) as a more plausible and promising alternative. Although Bowers originally proposed this theory to rescue some parts of Hilgard’s neodissociation theory, its main ideas are actually much older. For example, consider the views of Sidis in 1899 (pp. 68–9, original emphasis):

The superior or the highest nervous centres ... possess the function of *choice* and *will*. ... These superior choice and will-centres, localized ... in the frontal lobes ... on account of their selective and inhibitory function, may be characterized as inhibitory centres *par excellence*.

In hypnosis the two systems of nervous centres are dissociated, the superior centres and the upper consciousness are inhibited, or, better, cut off, split off from the rest of the nervous system ..., which is thus laid bare, open to the influence of external stimuli or suggestions.

Thus, this part of Kallio and Revonsuo’s argument may, in effect, represent a cycling back to earlier ideas, which antedated Hilgard’s theory.

However, the revolution that Kallio and Revonsuo (2003) propose goes far beyond the rejection of neodissociation theory: they propose that Hilgard’s dimension-based individual-differences methodology for hypnosis research should be overturned. In particular, they argue that what standardized hypnosis scales measure in most people has little to do with the crucial phenomena of interest, which are unique to certain rare individuals, termed ‘hypnotic virtuosos’. Hence, the prevailing research paradigm, which contrasts relatively high versus relatively low scorers on standardized hypnosis scales, cannot illuminate the classic, true hypnotic phenomena, such as hallucinations. They propose, therefore, that we should abandon this paradigm and intensively study individual virtuosos instead. As in the theoretical domain, this suggestion would turn back the clock to a pre-Hilgard era, in which the study of hypnosis was much more a matter of case studies (e.g. James, 1890).

In a sense, Kallio and Revonsuo (2003) are suggesting that the current impasse in hypnosis research is iatrogenic. Instead of studying ‘true’ hallucinations in those capable of them, namely hypnotic virtuosos, we have conflated these phenomena with qualitatively different, easier ones in a broader spectrum of people. Kallio and Revonsuo argue that unlike true hallucinations, which may require a genuinely altered state of consciousness, direct motor and motor challenge suggestions require no special state and fall in the same category as ‘ordinary mental imagery’ (p. 129). In short, the dimensional, standard-scales view of hypnosis research inadvertently substitutes phenomena that only require ‘vividly imagining an experience’ for the real thing, which is ‘truly hallucinating an experience’ (p. 130).

Kallio and Revonsuo’s (2003) abandonment of Hilgard’s idea that hypnosis lies on some kind of continuum with certain everyday phenomena may be viewed as a bid, in effect, to restore some of the strangeness and uniqueness of hypnotic phenomena. In this way, it is somewhat comparable to Barber’s (1999) recent proposal that there may be three qualitatively different, alternative types of high responder to hypnosis: those with a positive set, those with high imagery capacity, and a small minority with unusual dissociative/amnesic capacities. Kallio and Revonsuo are clearly zeroing in on the last of these possibilities, in contrast to the first two.

### **Some uncomfortable evidence**

Although Kallio and Revonsuo's methodological proposal is intriguing, it does not yet deal with certain lines of evidence. Interestingly, Hilgard carefully considered several of these lines of evidence in formulating his own, quite different views.

Of chief importance, the available evidence does not strongly support the hypothesis that there is a rare type of highly responsive person who differs in kind, rather than degree, from the rest of the population. Hilgard (1965) was himself intrigued with the idea that bimodality in the distribution of scores on hypnosis scales might possibly suggest the presence of two types, including a rarer, more capable one; however, bimodality is probably a problematic basis for inferring underlying types (Balthazard and Woody, 1989). In the most comprehensive approach to the typology issue to date, Oakman and Woody (1996) found some evidence in favour of two latent types in response to hypnosis scales; however, their results indicated that the 'high' type was not rare.

Likewise, the evidence indicates that even among the unusual people who are the very most responsive to hypnosis, there is considerable heterogeneity (McConkey and Woody, 2003). There may be several quite different ways to be a 'virtuoso', or several quite different profiles among 'virtuosos'. Hilgard's interest in this problem led to the development of the Stanford Profile Scales, designed to map different patterns of hypnotic aptitude among the most highly hypnotizable individuals (Weitzenhoffer and Hilgard, 1963, 1967). In addition to having different patterns of ability, the underlying strategies used by different virtuosos may be quite different as well. For example, an intensive case study of two virtuosos by McConkey, Glisky and Kihlstrom (1989) found that one of them was very passive cognitively, whereas the other was very active cognitively. Taken together, such lines of evidence suggest that there may be no unitary entity of hypnotic virtuoso.

Another important issue is that the available evidence does not support the strong qualitative distinction that Kallio and Revonsuo describe between hypnotic hallucinations and other classic, motor-based hypnotic suggestions. They ask, 'Why should we assume that such very different subjective experiences as a visual hallucination of an object and the feeling of heaviness in the hand should have a common underlying mechanism?' (p. 118). The answer is that the two kinds of responses are quite strongly correlated, suggesting a common mechanism to at least some extent (Hilgard, 1965). In very recent factor-analytic work on the combined item pool of the two most widely used hypnosis scales – the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor and Orne, 1962), and the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C; Weitzenhoffer and Hilgard, 1962) – Woody, Barnier, and McConkey (2004) found that the Perceptual-Cognitive (or hallucination) factor correlated 0.69 with the Direct Motor factor and 0.67 with the Motor Challenge factor. Given these substantial correlations, it is difficult to see how expectancies and other sociocognitive variables could be fully explanatory for response to motor suggestions but irrelevant for hallucinations, as Kallio and Revonsuo argue. Instead, we believe that Kallio and Revonsuo's tendency to ascribe all motor-suggestion responsiveness to purely sociocognitive factors is premature and probably incorrect (e.g. see Woody, Drugovic and Oakman, 1997; Woody and Sadler, 1998).

### **Invitation versus deception**

Kallio and Revonsuo (2003: 129) draw an interesting distinction between hypnotic suggestions that function as *invitations* versus ones that function as *deceptions*:

When given a suggestion, the subject is invited to imagine some alternative state of affairs ... This view implies that the subject is not being deceived or led to believe that such a state of affairs really is the case. By contrast, a deceptive suggestion would aim at convincing the person that the state of affairs described in the suggestion actually holds, i.e. that the world is different from what it actually is. A deceptive suggestion aims at bringing about a true hallucination rather than just ordinary mental imagery.

In a somewhat similar vein, Tellegen (1978/1979) argued that acts of imagining that are not experienced as real do not meet the minimal definition of hypnotizability; instead, 'it is the *act* of positing something imagined as real that characterizes a response as hypnotic rather than the *content* of the imagined event' (p. 220, original emphasis). However, the invitational quality of most hypnotic suggestions is not usually viewed as an impediment to this experience of reality. Indeed, some hypnosis experts (e.g. McConkey and Barnier, in press) would argue that even very difficult hypnotic suggestions function essentially as invitations, to which the participant responds by actively co-constructing the suggested experience.

Nonetheless, what is intriguing about the idea of deceptive suggestions is they may obviate certain kinds of competing explanations for a hypnotic response. If subjects cannot anticipate what kind of response is expected of them, then presumably they would have difficulty bringing into play processes such as 'voluntary intention, subjective effort, and focused attention' (Kallio and Revonsuo, 2003: 143). Thus, somewhat paradoxically, deceptive suggestions should be more difficult to experience, rather than easier.

Our impression is that truly deceptive suggestions are quite rare in hypnosis research. The suggestions on the standard hypnosis scales, including ones for hallucinations, have a clear 'as if' (or invitational) quality (Sarbin and Coe, 1972). There is not much mystery about why this is so: consider that deceptive motor-challenge suggestions, implying that the subject is actually paralysed, could raise tricky ethical issues. Similarly, the recent study of colour hallucination by Kosslyn, Thompson, Costantini-Ferrando, Alpert and Spiegel (2000), which Kallio and Revonsuo cite approvingly as a model of the kind of research they advocate, clearly used invitational rather than deceptive suggestions. Subjects were 'asked to alter actively the stimulus, to drain or add color' (Kosslyn et al., 2000: 1281).

In contrast, a good example of a deceptive suggestion for a hallucination is the one used by Szechtman, Woody, Bowers and Nahmias (1998). After being asked to listen to a taped message and then imagine it, subjects were told the taped message would be played again, but it actually was not. The hallucinators in the study heard the message again, as real, whereas the non-hallucinators, who were otherwise equally highly hypnotizable, heard nothing. In addition, Szechtman and his colleagues were able to show that the neurophysiological signature of hallucinating was clearly unlike that of imagining.

Let us close with a brief, related anecdote. Many years ago, Ken Bowers invited the students in his lab to construct a variety of special, very difficult suggestions for use in a demonstration session with a hypnotic virtuoso. As it turned out, this subject's most impressive responses were, indeed, elicited by what Kallio and Revonsuo would call deceptive suggestions. For example, Ken asked the subject to experience the smell of chocolate, which was actually a bottle of strong-smelling ammonia. When the subject reported that it smelled like chocolate, Ken ventured further into the deceptive by saying, 'Well, of course, but what *kind* of chocolate?' The students were amazed as the subject snorted away vigorously at the bottle of ammonia, eventually reporting his discovery with a big smile: 'A Hershey bar!' (Prior to the demonstration, none of the students had been able to take even a whiff of the bottle without a strong, involuntary flinch.)

At the close of the demonstration, the students surprised Ken by expressing doubt whether what they had just witnessed could really be the same kind of thing as the tamer phenomena they were studying in their own hypnosis experiments, using non-virtuosos ('highs') preselected in the usual way on standardized hypnosis scales, and using the more typical 'as if' kinds of suggestions. Ken duly reassured them. However, if Kallio and Revonsuo are right, the students' reservations were well founded, and we might have been better advised to study the virtuoso!

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*Address for correspondence:*

*Erik Z. Woody*

Department of Psychology

University of Waterloo

Waterloo, Ontario N2L 3G1, Canada

Email: ewoody@uwaterloo.ca