

HYPNOSIS AND THE ALTERED STATE DEBATE: SOMETHING MORE OR NOTHING MORE?

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Abstract

Kallio and Revonsuo (2003) present an Altered State Theory of hypnosis that they contend provides a multilevel framework to guide research that can lead to the ultimate resolution of the debate about whether or not hypnosis is an altered state of consciousness. In our commentary, we take the opportunity to clarify a number of simplifications and misrepresentations of sociocognitive theories inherent in the Kallio and Revonsuo's presentation, consider some of their criticisms of nonstate theories of hypnosis, and discuss a number of problems and limitations of their theory.

Key words: hypnosis, nonstate, state, virtuoso

Since the nineteenth century, observations of the seemingly extraordinary, puzzling, and provocative behaviours and experiences (e.g. amnesia, hallucinations) of hypnotized participants have contributed to the idea that hypnosis is 'something more' than simply responding to suggestions. Mesmerism and later hypnotism became associated with the idea of unusual and even supernatural capabilities. Some early investigators argued that magnetized subjects could see without the use of their eyes, travel mentally to distant planets and report back accurately about the inhabitants, spot disease by seeing through the skin to the internal organs of sick individuals, and communicate with the dead (Lynn, Rhue and Spanos, 1994). During the nineteenth and early twentieth centuries, hypnosis researchers concluded that hypnotized individuals acquired greater strength, more accurate memory, and the ability to accomplish feats previously impossible when not hypnotized (Orne, 1959). Whereas many such claims have since been debunked, the contemporary field of hypnosis remains riven with controversy regarding the question of whether or not hypnosis involves an altered or 'trance' state of consciousness that is responsible for the heightened suggestibility manifested by hypnotized individuals. Or put another way, are the effects of hypnotic suggestions the byproduct of something more, or nothing more than waking suggestibility and processes and mechanisms that govern mundane behaviours and experiences?

In their interesting and provocative article, Kallio and Revonsuo (2003) propose that hypnosis is 'something more', and forward the Altered State Theory of hypnosis (AST), according to which hypnotic behaviour consists of both a special state of hypnosis and a 'degree of suggestibility that is not dependent on the presence of the state but is affected by it' (p. 113). They contend that 'if the empirical predictions of this theory would be systematically tested in the future, the central question of hypnosis research could be solved once and for all' (p. 113). We applaud the authors for generating a new theory of

hypnosis and for providing empirical predictions and suggested research to evaluate the theory. In this commentary, we take the opportunity to clarify a number of simplifications and misrepresentations of sociocognitive theories inherent in Kallio and Revonsuo's presentation, consider some of their criticisms of nonstate theories of hypnosis, and discuss a number of problems and limitations of their theory.

The authors actually divide the 'central question' of hypnosis research into two related questions that are each somewhat ambiguous. The first is: 'Is reference to a special psychological state required when describing and/or explaining hypnosis?' (p. 112). The way the question is posed does not distinguish between a description and an explanation of hypnotic phenomena. Researchers and theorists are generally not at odds regarding descriptions of hypnotic phenomena (e.g. amnesia, reports of involuntariness), nor what phenomena encompass the domain of hypnosis (Hilgard, 1973). There are, however, sharp disagreements about explanations of hypnosis.

The second question is: 'Is there a special psychological state, an altered state of consciousness (ASC) involved in the generation of these phenomena?' (p. 112). The authors label workers in the field who answer the question in the affirmative as state view (SV) theorists, while those who answer the question in the negative are termed nonstate view (NSV) theorists, a convention we adopt in our commentary. Kallio and Revonsuo's (2003) second question does not distinguish between whether an altered state causes hypnotic phenomena, or whether an altered state is merely correlated or associated with suggested responses, possibilities that the authors often interchange in their discussion. The correlation possibility is not the subject of much debate, especially if the state in question is construed as nothing more than altered experiences that have suggestion-related physiological correlates. Even if a causal link is taken to mean that a suggestion-related shift in experience is a precursor of an 'hypnotic' response, there may be considerably less disagreement among SV and NSV theorists than Kallio and Revonsuo (2003) imply in their discussion. Indeed, one sociocognitive theory (Kirsch and Lynn, 1998) holds that convincing suggestion-related subjective experiences must be present to trigger hypnotic responses.

Although there are points of little dispute, if not agreement, among state and nonstate theorists, the greatest divergence of opinion pivots around the question of whether a trance or altered 'background state' (Kirsch, 2000) is necessary to account for hypnotic suggestibility in a causal sense. In Kallio and Revonsuo's (2003: 141) terms, 'The state of consciousness refers to the underlying context in the brain in which the phenomenal contents of consciousness are brought about'.

By defining hypnosis in this manner, Kallio and Revonsuo (2003) seek to advance the theoretical debate between SV and NSV theorists, which they contend has been doomed to be unresolved because theories are inadequate for testing the central questions they propose due to the lack of a generally accepted or shared empirically testable definition of an altered state of consciousness (p. 113). However, a serious problem with the authors' formulation is that they reverse the burden of proof on NSV theorists. To be more specific, the burden of proof of the claim that hypnosis involves an altered state, and the imperative to define such a state, does not rest on NSV theorists, who do not postulate that hypnosis involves a special state to begin with. Accordingly, the lack of definition of an ASC is not so much a problem for NSV theorists as it is for SV theorists, for which the concept of an altered state is crucial to their position.

Kallio and Revonsuo (2003) hold that research designed to demonstrate that hypnosis involves an ASC must carefully define the referent state. On this point we agree. To our knowledge, much research inspired by a SV (e.g. psychophysiological research), has

failed to define or operationalize an altered state of consciousness, distinguish whether such a state is construed in a causal or explanatory sense, or indicate what evidence would falsify the hypothesis that an altered state is present. Thus, in our view, much of the psychophysiological research has been of great interest yet not determinative vis-à-vis the altered state issue.

The validity and value of sociocognitive theories of hypnosis do not depend on ‘proving the negative – that is, demonstrating that hypnosis is *not* associated with an altered state of consciousness. Nor is the burden on nonstate theorists to prove that subjects are ‘in hypnosis’ or that ‘hypnosis is present,’ as the authors imply (p. 116). Sociocognitive theories view suggestibility as being on a continuum, and not as the byproduct of a state that is present or absent at any given time. NSV theorists seek to identify the determinants of individual differences in suggestibility and hypnotic phenomena rather than a point of entry into an altered state. Accordingly, the criticism of failing to delineate specific criteria for ‘being in hypnosis or hypnotized’ is based on an arguably irrelevant and arbitrary dichotomy, as far as NSV theories go.

Indeed, the thrust of much sociocognitive research has been to show that hypnotic and nonhypnotic responses have similar antecedents, and that hypnotic suggestibility can be increased or decreased as a function of social and cognitive mechanisms. In fact, Kallio and Revonsuo (2003) acknowledge that a great deal of evidence has accumulated over the years to indicate that sociocognitive variables play a highly influential role (see Lynn and Rhue, 1991). Indeed, many of the so-called markers or distinguishing characteristics of hypnosis (e.g. literalness of response, involuntariness, hidden observers, amnesia) can be reasonably well accounted for in terms of sociocognitive factors and/or are evident in comparable frequency in nonhypnotic conditions (see Spanos, 1986; Lynn, Rhue and Weekes, 1990; Lynn and Rhue, 1991; Wagstaff, 1991; Kirsch and Lynn, 1998). The failure to find consistent differences between hypnotized and nonhypnotized individuals, when appropriate controls are imposed, constitutes strong evidence that it is not necessary to invoke an altered state of consciousness to explain hypnotic responding. Moreover, individual differences are apparent in response to imaginative suggestions regardless of whether the situation is defined as hypnosis or not. Further, research in our laboratory and elsewhere (see Braffman and Kirsch, 1999; Meyer and Lynn, 2004) has shown quite convincingly, we believe, that hypnosis does not increase suggestibility much above nonhypnotic suggestibility, if it increases suggestibility at all.

Kallio and Renonsuo (2003) cite Kirsch’s (1985, 1990) expectancy theory to proffer a blanket criticism of NSV theories for being unable to account for hallucinations, noting that if expectations produced hallucinatory experiences, then individuals might experience hallucinations of everyday objects such as keys in places where it was expected they were located, even though they were not physically present. However, there are two problems with this criticism. First, the analogy between hypnosis and everyday life is strained. Hallucinations during hypnosis are suggested, and do not arise spontaneously. It is the context of hypnosis, which provides subjects licence to hallucinate, along with the expectation that it is possible to have a vivid hallucination that legitimizes the use of imagination to hallucinate, while specific suggestions (e.g. hallucinate a cat just like a real cat) provide the scaffolding for the hallucination. Second, many NSV theorists (e.g. Sarbin, Coe, Lynn, Wagstaff) do not emphasize expectancies so much in the context of hallucinations as the importance of imaginative abilities, which are no doubt crucial to generating vivid hallucinations. In all likelihood, expectations are important because they engage imaginative processes, not because they result in the spontaneous occurrence of hallucinations, although this hypothesis warrants further study.

Given that a great deal of evidence supports an account of hypnosis that does not depend on the ‘something more’ ASC hypothesis, the question arises, ‘What phenomena can such a special altered state account for, above and beyond the “nonhypnotic” variables identified by NSV theorists?’ According to Kallio and Revonsuo (2003), the altered state of consciousness of hypnosis is a rare phenomenon, restricted only to a few individuals dubbed hypnotic virtuosos (p. 141). In fact, virtuosos represent such a vanishingly small percentage of the population that the authors contend that they are so rare that it may be impossible to conduct group studies of them for practical reasons.

For virtuosos, the hypnotic induction purportedly alters the background state of consciousness in such a way as to ‘represent available information non-veridically and/or delusionally so that the resulting phenomenal content of conscious experience will misrepresent reality ... regardless of what the specific contents of consciousness are’ (p. 142). The background state is further divided into an input phase after the induction that facilitates the activation of representations in any sensory modality that correspond to the verbal suggestions, and an output phase during which the representations are released so that they ‘modulate the phenomenal content of consciousness’ (p. 143). Because the output phase happens entirely outside the participants’ conscious experience or voluntary control, the altered contents of consciousness ‘simply appear’ in a manner quite distinct from ordinary mental imagery which requires intention and focused attention.

The authors suggest an experiment that they claim holds the potential to reveal differences between virtuoso participants, who receive a neutral hypnotic induction vs. those who do not, in terms of an imagery task that can purportedly reveal the reality of colour experiences in synesthesia. Kallio and Revonsuo (2003) contend that if hypnotized virtuosos exhibit what amounts to suggested eidetic imagery abilities on such a task, it could provide evidence for an ASC, assuming that psychophysiological correlates of successful task responding could be identified and the results could not be attributed to the deliberate use of imagery or focused attention.

In our estimation, the rather extraordinary claim that a tiny minority of the population evidences an altered state of consciousness that is specific to hypnosis and not imagination, and is not present in nonhypnotic situations or in less suggestible subjects demands rigorous research that considers a variety of alternative explanations, if not ‘extraordinary proof’, as Carl Sagan was fond of saying. The problem as we see it is that even if the virtuosos show suggestion-related eidetic imagery, it would demonstrate little more than that the experimenters have succeeded in identifying those rare individuals who possess eidetic imagery abilities, and that these abilities have neural correlates. If such eidetic abilities were not evident in nonhypnotized individuals, then the results may well be attributable to sociocognitive variables related to the failure to employ imagery abilities or perform optimally in the nonhypnotic context (e.g. a ‘holdback effect’ due to poor motivation, demand characteristics). Kallio and Revonsuo make no mention of the need to study the influence of such variables in the context of the research they propose, nor do they elaborate exactly why sociocognitive factors would not be influential in virtuoso subjects. Additionally, the meaningfulness of the data obtained by their proposed study is limited by the failure to include comparison groups of less highly suggestible individuals (high, medium, low suggestible), or participants who are given motivational instructions but not hypnotized. And finally, it seems like it would be difficult to distinguish spontaneous imaginings and more goal-directed imagining, and, given the limits of introspection, to rule out the possibility that individuals were not using strategies to produce hallucinations, even though they reported otherwise. At any rate, the development of a ‘model system’ with reference to a tiny percentage of the population –

virtuosos – who are purportedly the only individuals who experience ‘hypnosis proper’ (p. 113) severely limits the generalizability of the ASC theory to the general population and to understanding hypnotic phenomena across the range of individual differences manifested in response to imaginative suggestions.

Kallio and Revonsuo (2003) suggest that a complete understanding of hypnosis demands consideration of multiple levels of analysis (e.g. social psychological, cognitive, phenomenological, and neurophysiological). We concur, and appreciate their delineation of a multilevel framework of ‘description and explanation.’ However, the authors oversimplify differences between the state and nonstate views by claiming that proponents of nonstate views localize explanations of hypnosis at the level of social interaction, and that NSV theorists contend that a sufficient explanation should refer to the personal level (e.g. expectations). Moreover, the authors claim that SV theorists localize the crucial phenomena inside the person who is hypnotized. The outside-inside dichotomy is fuzzy and perhaps artificial at best, but, that said, virtually all NSV theorists (see Lynn and Rhue, 1991) have acknowledged the potential importance of imaginative abilities, and mental strategies that participants employ to respond to the requirements of suggestions – all of which are localized ‘inside the person’ and clearly encompass what Kallio and Revonsuo (2003) term the ‘cognitive level’ (i.e. how information is processed). To cite only one example, Lynn and his colleagues (Frauman, Lynn, Hardaway, and Molteni (1984), conducted a study to determine whether subliminal stimuli could impact participants’ unconscious fantasies and thereby their responsiveness to hypnosis. Additionally, we are not acquainted with a single NSV theorist who currently denigrates the value or relevance of examining neural correlates of behaviours or cognitive activities. Such information is interesting in its own right, independent of its ultimate bearing on the altered state issue. Accordingly, we do not agree with the authors’ contention that the ‘SV versus NSV debate is really a disagreement about the level of description at which the phenomenon of hypnosis should be conceptualized and the level at which an explanation should be constructed’ (p. 138). NSV theories, while regarding hypnotic behaviour as social behaviour, also take into consideration variables that span most of the levels identified by the authors. It is tempting to speculate that had reliable psychophysiological correlates of hypnosis emerged relatively early in the history of hypnosis, there might be no state/nonstate debate today.

Contrary to Kallio and Revonsuo’s (2003) implication, we believe the reason the debate between state and nonstate theorists has not resulted in a conclusive victor, much less a satisfactory resolution, has much less to do with the failure to find common definitional ground, than it has to do with the failure of the available evidence to convince proponents of opposing theoretical camps. To make a case that compels NSV theorists, it will be necessary to show that something beyond responsivity to the imaginative suggestions administered during hypnosis, cognitive strategies, participants’ motivation and imaginative abilities, and the unique expectational context of hypnosis, accounts for changes in neural/physiological markers observed during hypnosis. Even if the neural underpinnings of responses to hypnotic suggestions could be delineated some day, the burden is on state theorists to demonstrate that the identified markers provide a satisfactory causal explanation of hypnotic phenomena. Still and all, it is difficult to see how if such a case was made it would diminish the explanatory power of sociocognitive variables that have been identified in hundreds of studies over the past four decades.

Despite the wealth of evidence marshalled by NSV theorists, SV theorists still insist that there is ‘something more’ to hypnosis, and remain adamant that sociocognitive variables do not provide a complete account of hypnosis. We agree. In fact, a ‘complete

account' has proven elusive, even though much valuable research has been undertaken in the service of a complete understanding of hypnosis. Scientific discovery is a never ending story, and we are far from reaching a satisfactory conclusion, a least as far as the issues raised by Kallio and Revonsuo (2003) go.

So how do we proceed? Delineation and operationalization of constructs is crucial to any research study, and the enterprise of science in general. Yet there is no 'one way' to operationalize a concept such as 'altered state'. In fact, different ways of operationalizing the construct can yield a rich trove of information, insofar as research based on different conceptualizations of an 'altered state' can expand our understanding of both hypnosis and alterations in consciousness. Accordingly, we see no reason for there to be a uniform definition or operationalization of hypnosis, or altered states, in order for science to advance our understanding of these phenomena.

It may ultimately be more important for researchers who embrace opposing viewpoints and all too commonly virtually shun one another, to begin to talk to each other regarding the pros and cons of scientific methodologies (e.g. control groups, selection of subjects, fMRI research) and the nature and outcome of research that would constitute more or less definitive evidence for competing viewpoints, than for all to settle on a single definition of hypnosis, criteria for the presence or absence of hypnosis, or level of analysis of hypnosis. Hopefully, Kallio and Revonuso's (2003) provocative paper will usher in a new era of congenial dialogue between state and nonstate researchers. Count us in.

References

- Braffman W, Kirsch I (1999) Imaginative suggestibility and hypnotizability: an empirical analysis. *Journal of Personality and Social Psychology* 77: 578–87.
- Frauman D, Lynn SJ, Hardaway R, Molteni A (1984) Effects of subliminal symbiotic activation on hypnotic rapport and susceptibility. *Journal of Abnormal Psychology* 93: 481–3.
- Hilgard ER (1973) The domain of hypnosis: with some comments on alternate paradigms. *American Psychologist* 28: 972–82.
- Kallio S, Revonsuo A (2003) Hypnotic phenomena and altered states of consciousness: a multi-level framework of description and explanation. *Contemporary Hypnosis* 20: 111–64.
- Kirsch I (1985) Response expectancy as a determinant of experience and behavior. *American Psychologist* 40: 1189–202.
- Kirsch I (1990) *Changing Expectations: A Key to Effective Psychotherapy*. Pacific Grove, CA: Brooks/Cole.
- Kirsch I (2000) The response set theory of hypnosis. *American Journal of Clinical Hypnosis* 42: 274–92.
- Kirsch I, Lynn SJ (1998) Social-cognitive alternatives to dissociation theories of hypnotic involuntariness. *Review of General Psychology* 2: 66–80.
- Lynn SJ, Rhue J (eds) (1991) *Theories of Hypnosis: Current Models and Perspectives*. New York: Guilford Press.
- Lynn SJ, Rhue JW, Spanos NP (1994) Hypnosis. In: I Ramachadran (ed.) *Encyclopedia of Human Behaviour*. Wiley Press.
- Lynn SJ, Rhue J, Weekes JR (1990) Hypnotic involuntariness: a social-cognitive analysis. *Psychological Review* 97: 169–84.
- Meyer EC, Lynn SJ (2004) The determinants of hypnotic and nonhypnotic imaginative suggestibility. Manuscript submitted for publication.
- Orne MT (1959) The nature of hypnosis: artifact and essence. *Journal of Abnormal Psychology* 58: 277–99.
- Spanos NP (1986) Hypnotic behaviour: a social-psychological interpretation of amnesia, analgesia, and 'trance logic'. *The Behavioural and Brain Sciences* 9: 449–67.
- Wagstaff GF (1991) Compliance, belief, and semantics in hypnosis: a nonstate perspective. In: SJ

Lynn, JW Rhue (eds) *Theories of Hypnosis: Current Models and Perspectives*. New York: Guilford Press, 362–96.

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