

## **MULTILEVELING THE PLAYING FIELD: ALTERING OUR STATE OF CONSCIOUSNESS TO UNDERSTAND HYPNOSIS**

**David Spiegel**

*Stanford University School of Medicine, California, USA*

---

### **Abstract**

The state/nonstate controversy involving hypnosis is examined through six principles of explanation. The importance of hypnotizability is emphasized as a moderating factor in studying hypnotic phenomena. Framing discussions of social, intrapsychic and neurophysiological influences on hypnosis in terms of relative contributions to the explanation of variance rather than winner-take-all approaches is recommended.

---

**Key words:** hypnosis, hypnotizability, neurophysiological, social influence

Kallio and Revonsuo are to be congratulated for a very thorough and thoughtful review of the hypnosis literature and for their suggestions of methods to examine the state/nonstate controversy. Their idea of studying special cases – hypnotic virtuosos – is a useful one that we and others have employed. It serves to underscore the fact that hypnotizability is a crucial dimension in understanding the phenomenon – hence the need to select for the highest on this dimension.

There are some fundamental problems in the rather enervating state/nonstate, social psychological, and altered state of consciousness debate. I propose some basic principles.

1 *When you have a hammer, everything starts to look like a nail.* Like patients with a dissociative disorder, scientists tend to see the world in terms of their particular explanatory framework. We should be asking not whether hypnosis is merely a social psychological phenomenon, but rather how much of the variance in hypnotic experience can be accounted for by social psychological factors. Likewise, since we use our brains to do everything (most of us do, anyway), there will be neural correlates of much human activity, including, as the authors have documented, hypnosis. Again the question is one of unique variance. When hypnotized and highly hypnotizable people can change brain function in ways that typically occur only with alterations in actual perception, it looks as though the hypnotic state is something special. For example, hypnotic visual hallucinations are opaque, and are associated with changes in event-related potential amplitude and blood flow in specific visual processing regions (Spiegel, Cutcomb, Ren and Pribram, 1985; Spiegel, Bierre and Rootenberg, 1989; De Pascalis, 1994; De Pascalis and Carboni, 1997; Barabasz, Barabasz, Jensen, Calvin, Trevisan and Warner, 1999; Kosslyn, Thompson, Constantino-Ferrando, Alpert and Spiegel, 2000; Jensen, Barabasz, Barabasz and Warner, 2001; Bryant and Mallard, 2003; Spiegel, 2003). Social psychological theories postulate that such alterations are efforts to comply but not experienced as ‘real’ (Spanos, 1986). But to hypnotized individuals with the requisite hypnotic capacity, there

are real – believing is seeing (Spiegel, 1987). Kallio and Revonsuo have proposed other clever experiments to further test the idea that hypnotic performance is non-ordinary (Spiegel, 1998).

2 *Categories are artificial.* We simplify the world by creating them, but most real phenomena are continuous. It is always possible to blur real differences by comparing two points on a 10-point scale, or to exaggerate differences by comparing extremes. Hypnotic virtuosos are interesting in a variety of ways, but they represent simply a more extreme form of what many (though not all) people can do.

3 *Hypnosis is not confined to context.* Hypnotic phenomena occur with or without a formal hypnotic induction. The absorption literature makes it clear that hypnotic-like experiences occur among hypnotizable individuals, whether or not they have ever been exposed to a dangling watch or a social psychologist. The Wagstaff argument that you could not slip into a hypnotic state without being aware of it is tautological and wrong. As many have noted (Spiegel, 1988, 1990; Hilgard, 1965, 1986), the very focus of the hypnotic state in the central percept may hamper or eliminate the type of superordinate awareness that is required to make an accurate observation about being in that state, as in states of ‘flow’ (Csikszentmihalyi, 1991).

4 *Social influence theory is a social influence.* The pure social psychological ‘explanation’ for hypnosis is fundamentally as arid as pure behaviourism, which similarly, patronizingly, and inaccurately referred to the brain as a ‘black box’. It is one thing to make a set of assumptions, as mathematicians do, and see what you can learn from sticking to them. It is another to treat the assumptions as facts. Hypnosis occurs outside of social contexts as well as in them, for example in self-hypnosis and absorption, among people capable of it. Furthermore, most social psychological explanations ignore hypnotizability as an intervening variable.

5 *Is consciousness a social construct?* We are, of course, social creatures. We have a state of waking alertness in which we function most of the day. We could call it a non-altered state of consciousness. Does it exist only because of social suggestion, i.e. we all have learned to expect to be awake at times? Is it merely a result of social influence or expectation?

6 *Occam’s razor can bleed the life out of phenomena.* Multilevel explanations are an absolute necessity in understanding human mind/brain/body phenomena because we are both neurally-based and social creatures who experience the world in mental phenomenal terms. To choose one of these domains as the complete explanatory context is to be by definition wrong.

## References

- Barabasz A, Barabasz M, Jensen S, Calvin S, Trevisan M, Warner D (1999) Cortical event-related potentials show the structure of hypnotic suggestions is crucial. *International Journal of Clinical and Experimental Hypnosis* 47(1): 5–22.
- Bryant RA, Mallard D (2003) Seeing is believing: the reality of hypnotic hallucinations. *Conscious Cognition* 12(2): 219–30.
- Csikszentmihalyi M (1991) *Flow: The Psychology of Optimal Experience*. New York: Harper Perennial.
- De Pascalis V, Carboni G (1997) P300 event-related-potential amplitudes and evoked cardiac responses during hypnotic alteration of somatosensory perception. *International Journal of Neuroscience* 92(3–4): 187–207.
- De Pascalis V (1994) Event-related potentials during hypnotic hallucination. *International Journal of Clinical and Experimental Hypnosis* 42(1): 39–55.

- Hilgard E (1986) *Divided Consciousness: Multiple Controls in Human Thought and Action*. New York: Wiley.
- Hilgard ER (1965) *Hypnotic Susceptibility*. New York: Harcourt, Brace & World.
- Jensen SM, Barabasz A, Barabasz M, Warner D (2001) EEG P300 event-related markers of hypnosis. *American Journal of Clinical Hypnosis* 44(2): 127–39.
- Kosslyn SM, Thompson WL, Constantino-Ferrando MF, Alpert NM, Spiegel D (2000) Hypnotic visual illusion alters color processing in the brain. *American Journal of Psychiatry* 157(8): 1279–84.
- Spanos NP (1986) Hypnotic behavior: a social-psychological interpretation of amnesia, analgesia, and ‘trance logic’. *Behavioral and Brain Sciences* 9: 449–502.
- Spiegel D (1987) Seeing through social influence: hypnotic hallucinations are opaque. *Behavioral and Brain Sciences* 10: 775–6.
- Spiegel D (1988) Hypnosis embodying the mind: I think therefore I am? *Contemporary Psychiatry* 7(2): 117–20.
- Spiegel D (1990) Hypnosis, dissociation, and trauma: hidden and overt observers. In: JL Singer (ed.) *Repression and Dissociation: Implications for Personality Theory, Psychopathology, and Health*. Chicago: University of Chicago Press, 121–42.
- Spiegel D (1998) Using our heads: effects of mental state and social influence on hypnosis. *Contemporary Hypnosis* 15(3): 175–7.
- Spiegel D (2003) Negative and positive visual hypnotic hallucinations: attending inside and out. *International Journal of Clinical and Experimental Hypnosis* 51(2): 130–46.
- Spiegel D, Bierre P, Rootenberg J (1989) Hypnotic alteration of somatosensory perception. *American Journal of Psychiatry* 146(6): 749–54.
- Spiegel D, Cutcomb S, Ren C, Pribram K (1985) Hypnotic hallucination alters evoked potentials. *Journal of Abnormal Psychology* 94(3): 249–55.

*Address for correspondence:*

*David Spiegel*

Stanford University School of Medicine

401 Quarry Road

Stanford

CA 94305-5718

California

USA

Email: [dspiegel@stanford.edu](mailto:dspiegel@stanford.edu)