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IS HYPNOSIS AN ALTERED STATE OF CONSCIOUSNESS *OR WHAT*?

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Abstract

The debate over whether hypnosis is an altered state of consciousness is a distraction from the real business of studying the phenomena that occur in the context of hypnotic suggestion. These phenomena can be profitably studied at several levels of analysis: the psychological, the sociocultural, and the neurobiological. A comprehensive understanding of hypnosis must emphasize that the phenomena of hypnosis reflect both alterations in consciousness and social interactions.

Key words: consciousness, hypnosis, nonstate, state

Kallio and Revonsuo (2003) are correct to note that a debate over whether hypnosis is an altered state of consciousness has been raging for decades, but they are incorrect that the debate is really over 'the level of description at which the phenomenon "hypnosis" should be conceptualized' (p.111; see also p.138). If the debate were merely about levels of analysis, there would not be a debate, because levels of analysis are optional and do not contradict each other. Cognitive psychologists can describe memories as bundles of features, neuroscientists can describe them as reverberating neural networks, and social psychologists can describe them as beliefs shaped by conformity and persuasion, all without contradicting each other or engendering any debate at all. So what *is* the problem?

It cannot be that the term 'consciousness' is poorly defined. Consciousness has two principal aspects: *monitoring* ourselves and our environment, so that objects, events, and our internal mental states are accurately represented in phenomenal awareness; and *controlling* ourselves and the environment, through the voluntary initiation and termination of thought and action (Kihlstrom, 1984). From this point of view, the alterations in perception and memory exemplified by hypnotic analgesia or deafness, positive and negative hallucinations, posthypnotic amnesia, and posthypnotic suggestion constitute disruptions in conscious awareness: the subject appears to be unaware of percepts, memories, and thoughts that nevertheless continue to influence ongoing experience, thought, and action outside of conscious awareness (Kihlstrom, 1998). This disruption in awareness, in turn, gives rise to the experience of involuntariness that frequently accompanies suggested hypnotic experiences – an apparent loss of control over cognition and behaviour (Kihlstrom, 1992). It would seem that the only way to deny that the phenomena of hypnosis reflect alterations in consciousness would be to deny that the phenomena themselves are genuine – to assert, for example, that hypnotic subjects really do feel pain, and really do remember, despite what they say after they have been given suggestions for analgesia and amnesia.

Perhaps, though, the problem lies in the way that *altered state* is defined – which is, admittedly, a little fuzzy (Ludwig, 1966). If we believe that every altered state should be associated with a unique physiological signature, much as sleep is associated with the absence of alpha activity in the EEG and dreaming with the occurrence of rapid eye movements (REM), then the lack of a physiological indicator for hypnosis may be taken as evidence that hypnosis is not an altered state of consciousness after all. But of course, this puts the cart before the horse. Physiological indices are validated against self-reports: Aserinsky and Kleitman (1953) had to wake their subjects up during periods of REM and ask them if they were dreaming. As such, physiological correlates have no privileged status over introspective self-reports: Aserinsky and Kleitman were in no position to contradict subjects who said that they were not dreaming. It is nice when our altered states have distinct physiological correlates, but our present knowledge of mind-body relations is simply not sufficient to make such correlates a necessary part of the definition. After all, cognitive neuroscience has made very little progress in the search for the neural correlates of ordinary waking consciousness (Metzinger, 2000). How far in the future do the neural correlates of altered states of consciousness, like hypnosis, await?

In the final analysis, it may be best to treat hypnosis and other altered states of consciousness as *natural concepts*, represented by a prototype or one or more exemplars, each consisting of features that are only probabilistically associated with category membership, with no clear boundaries between one altered state and another, or between altered and normal consciousness (Hilgard, 1969; Kihlstrom, 1984). And because we cannot have direct knowledge of other minds, altered states of consciousness must also remain *hypothetical constructs*, inferred from a network of relationships among variables that are directly observable (Campbell and Fiske, 1959; Garner, Hake, and Eriksen, 1956; Stoyva and Kamiya, 1968), much in the manner of a psychiatric diagnosis (Orne, 1977). From this point of view the diagnosis of an altered state of consciousness can be made with confidence to the extent that there is convergence among four kinds of variables: an induction procedure, alterations in subjective experience, associated changes in overt behaviour, physiological correlates, and an induction procedure. Let me address each of these aspects briefly in turn.

Operationally, an altered state of consciousness can be defined, in part, by the means employed to induce it – or, alternatively, as the output resulting from a particular input. Barber (1969) employed such an input-output definition as the sole index of hypnosis, largely ignoring individual differences in hypnotizability. Operational definitions of this sort are a residue of functional behaviourism in psychology, and we should get over them. At the very least, hypnosis would seem to require *both* a hypnotic induction *and* a hypnotizable individual to receive and act upon it. But in the case of very highly hypnotizable subjects, even the induction procedure may be unnecessary.

Introspective self-reports of changes in subjective experience would seem to be central to the definition of any altered state of consciousness. The domain of hypnosis is defined by suggested changes in perception, memory, and the voluntary control of behaviour – analgesia, amnesia, the experience of involuntariness, and the like (Hilgard, 1973). If the hypnotist gives a suggestion – for example, that there is an object in the subject's outstretched hand, getting heavier and heavier – and the subject experiences nothing of the sort, it is hard to say that he or she has been hypnotized.

Of course, a reliance on self-reports has always made psychologists nervous, so another residue of radical behaviourism is a focus on overt behaviour. If a subject hallucinates an object in his outstretched hand, and feels it grow heavier and heavier, eventually

his arm ought to drop down to his side. Individual differences in hypnotizability are measured in terms of the subject's publicly observable, overt, behavioural response to suggestions. But in this instance, the overt behaviour is, to borrow a phrase from the Anglican Book of Common Prayer, an outward and visible sign of an inward and spiritual grace. Overt behaviour is a consequence of the subject's altered subjective experience, and is of no interest in the absence of corresponding subjective experience. For this reason, requests for 'honesty reports' (Bowers, 1967; Spanos and Barber, 1968) or other appropriate post-experimental interviews (Orne, 1971; Sheehan and McConkey, 1982) can help clarify subjects' overt behaviour, and serve as correctives for simple behavioural compliance.

Because both self-reports and overt behaviours are under voluntary control, and thus subject to distortion by social-influence processes, hypnosis researchers have long been interested in psychophysiological indices of response. Over the years, a number of such indices have been offered, including skin conductance and alpha activity, but these have usually proved to be artifacts of relaxation, and not intrinsic to hypnosis. In retrospect, it was probably a mistake to expect that there would be any physiological correlates of hypnosis in general, following an induction procedure but in the absence of any specific suggestions (Maquet et al., 1999), because subjects can have a wide variety of experiences while they are hypnotized. Progress on this issue is more likely to occur when investigators focus on the physiological correlates of specific hypnotic suggestions – as in brain imaging work that shows specific changes in brain activity corresponding to hypnotic visual hallucinations (Kosslyn, Thompson, Costantini-Ferrando, Alpert, and Spiegel, 2000) or analgesia (Rainville, Hofbauer, Bushnell, Duncan and Price, 2002).

In fact, this may be a good strategy for traditional, performance-based investigations of hypnosis as well. Kallio and Revensuo (2003) argue that the 'state' view is troubled by the fact that hypnotic induction procedures do not appear necessary to produce hypnotic effects, but this is a problem only if an induction procedure is construed as a defining feature of an altered state. An even more troubling fact is that every phenomenon produced in hypnosis can also be produced posthypnotically – that is, after the subject has been brought out of hypnosis. This only reinforces the point that alterations in consciousness are not *caused* by a state of hypnosis. Studying hypnosis, as an ostensible state, is likely to be far less productive than studying specific hypnotic phenomena, such as analgesia, amnesia, posthypnotic suggestion, or hypnotic hallucinations (positive and negative).

Whatever the focus of study, we would do well to bear in mind the multifaceted nature of hypnosis itself. As White (1941: 502) noted at the dawn of the modern era of hypnosis research, 'The theory of hypnotism will never prosper until, outgrowing the dialectic dichotomy of "striving" and "state", it considers the possibility of interaction'. In White's view, hypnosis was an 'altered state of the person' that takes place in a context of 'meaningful, goal-directed striving' (p. 504). Orne (1959), who was White's protege as both an undergraduate and a graduate student at Harvard, famously tried to distinguish between artifact and essence of hypnosis, but a careful reading of his work makes it clear that the demand characteristics that *surround* hypnosis are as important as any 'trance logic' that might arise *in* hypnosis. Similarly, at the beginning of what might be called the 'golden age' of hypnosis research, Sutcliffe rejected both the credulous and sceptical views of hypnosis (another version of the state-nonstate dichotomy), and offered a third view: that hypnosis involves a quasi-delusional alteration in self-awareness constructed out of the interaction between the hypnotist's suggestions, and the subject's interpretation of those suggestions (Sutcliffe, 1960, 1961).

Hypnosis entails changes in conscious perception, memory, and behaviour, to be sure, but these changes also occur following specific suggestions made by the hypnotist, as they are interpreted by the subject. These changes in conscious mental life, occurring in the context of suggestion, define the domain of hypnosis; hypnosis as a state is characterized by these changes, but it does not *cause* them to occur (Hilgard, 1969, 1973). The 'third way' in hypnosis research construes hypnosis simultaneously as both a state of (sometimes) profound cognitive change, involving basic mechanisms of perception, memory, and thought, *and* as a social interaction, in which hypnotist and subject come together for a specific purpose within a wider sociocultural context. A truly adequate, comprehensive theory of hypnosis will seek understanding in both cognitive and interpersonal terms.

We do not yet have such a theory. Until we produce one, individual investigators will naturally emphasize one aspect over the other in their work, whether altered consciousness or social context. The inter-individual competition that is part and parcel of science as a social enterprise often leads investigators to write as if alterations in consciousness and social influence were mutually exclusive processes. Taken together with the null-hypothesis statistical tests that remain part and parcel of the experimental method, and a propensity for making strong rather than weak inferences from experimental data, investigators will often present evidence for one process as evidence against the other. But if there is one reason why hypnosis has fascinated successive generations of investigators, since the very dawn of psychology as a science, it is that hypnosis exemplifies the marvellous complexity of human experience, thought, and action. In hypnosis and elsewhere, comprehensive understanding will require a creative synthesis in the spirit of discovery, rather than the spirit of proof – a creative synthesis of *both-and*, as opposed to a stance of *either-or*.

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