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Hypnosis as an Altered State of Consciousness

Abstract: *The status of hypnosis as an altered state of consciousness (ASC) has long been controversial. The classic phenomena of hypnosis, such as sensory anaesthesias, analgesia, amnesia, and post-hypnotic suggestion, provide prima facie evidence of altered consciousness, but some theorists contend that these are the products of normal mental processes, such as suggestion and expectation. In this article, hypnosis is viewed against a general framework for describing ASCs in terms of four converging operations: induction procedure, subjective experience, behavioural correlates, and physiological correlates. Although 'neutral' hypnosis, in the absence of specific suggestions, has few distinctive characteristics, many of the classic phenomena of hypnosis involve dissociations between explicit and implicit memory, or perception, such that percepts, memories, and thoughts influence ongoing experience, thought, and action outside conscious awareness and control.*

1. Introduction

Hypnosis is a phenomenon in which one person (the hypnotist) offers suggestions to another person (the subject) for imaginative experiences entailing alterations in perception, memory, and action. In the classic case, these experiences are associated with a degree of subjective conviction bordering on delusion, and an experienced involuntariness bordering on compulsion. As such, hypnosis entails alterations in consciousness which take place in the context of a particular interpersonal relationship. These alterations in consciousness have

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made hypnosis an object of interest to researchers and clinicians since the time of William James and Jean-Martin Charcot; but the fact that these phenomena are instigated by suggestion has made hypnosis an object of controversy (Kihlstrom, 2007; 2008b; for comprehensive coverage of hypnosis, see Nash and Barnier, 2008).

Any survey of responses to hypnotic suggestions, such as provided by the standardized scales constructed to measure individual differences in hypnotizability (Hilgard, 1965), makes it obvious that hypnosis represents an ASC. In the sensory aneasthesias, subjects cannot see, hear, or feel stimuli presented at suprathreshold levels of intensity; in analgesia, they may feel a tactile stimulus, but not the pain it would normally cause; in the positive hallucinations, they see or hear things that are not there; in the negative hallucinations, they fail to see or hear things that *are* there; in agnosia, they cannot identify objects that are objectively familiar to them; when age-regressed, adults feel like children again; they respond to post-hypnotic suggestions without knowing that they are doing so, or why; and, by virtue of post-hypnotic amnesia, they cannot remember what transpired while they were hypnotized, until the suggestion has been cancelled by a prearranged reversibility cue. Even the ideomotor suggestions, perhaps the most prosaic of all hypnotic phenomena, involve altered consciousness: hypnotized subjects do not just lower or fail to bend their outstretched arms — they *feel* a heavy weight pulling their hands and arms down, or their arms held rigidly in place by a splint. That these effects do not occur spontaneously (and must be suggested to subjects), and they do not occur in all subjects who have been hypnotized (by virtue of individual differences in hypnotizability, even at the high end), does not gainsay that each of them entails an alteration in the subject's state of consciousness (Kihlstrom, 1992b; 2005; 2007).

2. Critiques of State Theory

Nevertheless, the status of hypnosis as an ASC has long been controversial (for overviews of the controversy, see Barber, 1972; Gruzelier, 2005; Hilgard, 1973b; Kallio and Revonsuo, 2003; 2005; Kihlstrom, 1992b; 2005; Kirsch, 2005; Lynn *et al.*, 2007; Mazzoni *et al.*, 2013; Oakley, 1999; Sarbin, 1992; Sarbin and Coe, 1972; Spanos, 1986; Spanos and Chaves, 1970; Wagstaff and Cole, 2005).

Sometimes the debate has been couched in terms of the validity of 'trance' or 'special-process' theories of hypnosis. For example, Barber

(1969) argued that all of the effects of hypnosis could be explained in terms of the subject's attitudes and motivations, without resort to any sort of special process or trance-like state. Later, he expanded his view to include the subject's expectations (Barber, Spanos and Chaves, 1974), but the thrust of his theory continued to be that hypnosis was the product of perfectly normal psychological processes. Later, Barber (1999) conceded that hypnosis might be an ASC after all, at least when it occurs in highly hypnotizable subjects. Similarly, Sarbin (Sarbin and Andersen, 1967) offered an explanation of hypnosis in terms of sociological role theory — essentially, that the hypnotized subjects were enacting a socially prescribed role, behaving as they believe hypnotized subjects *should* behave. But later, Sarbin and Coe (1972) allowed that, sometimes, subjects become so involved in the proceedings that they do not realize that they are enacting a role — which would seem to indicate that they are in some kind of ASC after all.

Other 'non-state' approaches to hypnosis have relied on various social-cognitive constructs, without resort to notions of an ASC (for an overview, see Lynn, Kirsch and Hallquist, 2008). Spanos (1986) drew on both Barber's and Sarbin's earlier work to emphasize subjects' motivation to display behaviour regarded as characteristically hypnotic, as well as the features of the social context that influence both these displays and their tendency to attribute these effects to the suggestions of the hypnotist, rather than to their own voluntary responses. Kirsch (1991), for his part, drew on social learning theory to argue that, given appropriately positive expectancies, subjects' responses to hypnotic suggestions take the form of self-fulfilling prophecies. Hypnosis, then, is analogous to a placebo, which has no active ingredient beyond the subjects' belief that the pill will have its intended effects. Similarly, Lynn (Lynn and Rhue, 1991) argued that, given the appropriate response set, subjects responded automatically to the hypnotist's suggestions, and that certain features of the hypnotic context discourage subjects from becoming aware of the personal and situational factors that influence their responses. Although lack of awareness and control would ordinarily be the sort of features we would ascribe to an ASC, Lynn, like Kirsch, emphasizes that automaticity is a common feature of normal behaviour, and so it is not necessary to postulate an ASC to explain their occurrence in hypnosis.

On occasion, the 'altered state' debate seems to be a local manifestation of a long-standing conflict over whether 'mentalistic entities' like consciousness have any place in a scientific explanation of

experience, thought, and action. And sometimes, the 'non-state' view appears to be a cover for a debunking attitude which claims, for example, that subjects reporting hypnotic deafness still hear perfectly well (Spanos, Jones and Malfara, 1982), that post-hypnotic amnesia is not genuine forgetting (Coe, 1978), or that the failure to counteract hypnotic suggestions is a strategy for convincing the hypnotist that subjects are deeply hypnotized (Spanos, Cobb and Gorassini, 1985). But to the extent that 'non-state' theorists agree (or concede) that subjects' responses to hypnotic suggestions are subjectively compelling, that would seem to resolve the question: hypnosis is an ASC.

3. Defining an ASC

Defining an *altered* state of consciousness has proven as difficult as defining consciousness itself (e.g. Ludwig, 1966; Revonsuo, Kallio and Sikka, 2009). In one influential attempt, Stoyva and Kamiya (1968) defined an ASC as a *hypothetical construct*, which may be inferred from a network of relationships among variables that are directly observable. Employing the logic of converging operations, they argued that an ASC can be identified with respect to four facets: an induction procedure, alterations in subjective experience, associated changes in overt behaviour, and physiological correlates (Figure 1).

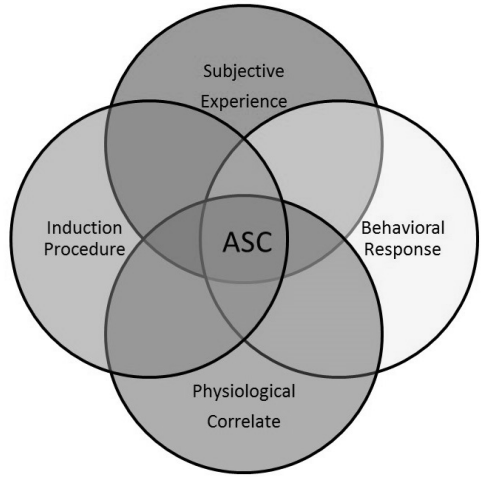

Figure 1. Venn diagram showing the convergence of four characteristic features on an altered state of consciousness (ASC).

Ideally, every ASC would have a unique set of features in each of these respects. However, given what we know about the structure of concepts and categories, it is better to treat ASCs 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 (Kihlstrom, 1984).

3.1. Induction

Operationally, an ASC can be defined simply as the output resulting from a particular input — which is to say, by the means employed to induce it. One induces a psychedelic state by ingesting a tab of LSD; one begins meditating by adopting the lotus position; one goes to sleep by climbing into bed, pulling up the covers, and turning off the lights. Hypnosis is typically induced by verbal suggestions for relaxation, eye fixation, focused attention, and eye closure — although other techniques are also employed (Edmonston, 1986). But none of these elements is necessary: for example, subjects can be hypnotized while pedalling vigorously on a bicycle ergometer. Nor are they sufficient: there are wide individual differences in hypnotizability (Hilgard, 1965), and highly hypnotizable subjects may need little or nothing by way of an induction procedure. Nevertheless, a formal induction procedure helps to define the situation as hypnosis, as opposed to something else, so that subjects have some sense of what is going to happen and what they should do.

3.2. Subjective Experience

Regardless of whether there has been a formal induction procedure, there is no point in talking about an ASC unless the subject actually experiences subjectively compelling changes in the monitoring or controlling functions of consciousness, as instigated by the hypnotist's suggestions. Here it should be noted that there are some forms of hypnosis which do not entail suggestions of this sort. For example, 'neutral' hypnosis, a concept that has its origins with Pavlov, is defined as the subject's state following the induction procedure, but before any specific suggestions have been given (Edmonston, 1981; 1986). And while there are forms of self-hypnosis in which subjects give suggestions to themselves (Johnson *et al.*, 1983; Shor and Easton, 1973), there are other forms in which subjects construct their own

free-flowing reveries without any suggestions for specific experiences (Fromm *et al.*, 1981; for comparisons, see Orne and McConkey, 1981). Still, it has to be said that the most dramatic alterations in consciousness occur in response to specific suggestions for analgesia, age-regression, amnesia, and the like. For this reason, introspective self-reports of changes in subjective experience are critical to the definition of any ASC.

Some 'non-state' theorists have objected to even these phenomena as ASCs, on the grounds that they can be explained in terms of ordinary behavioural processes, without invoking an ASC. For example, Barber (1969) claimed that non-hypnotic instructions intended to enhance subjects' task-motivation could produce the same effects as hypnotic suggestions. However, these instructions put strong pressure on subjects for behavioural compliance, in the absence of subjectively compelling experiential changes. Demands for honesty essentially eliminate reports of auditory and visual hallucinations by task-motivated subjects, but have little effect on those made by hypnotic subjects, indicating that the reports of task-motivated subjects are not accompanied by the subjective conviction characteristic of those who have been hypnotized (Bowers, 1967; Ruch, Morgan and Hilgard, 1974).

Similarly, Spanos (1986) hypothesized that hypnotic analgesia was accomplished via ordinary coping and stress-inoculation mechanisms, such as distraction, relaxation, imagining situations incompatible with pain, and avoidance of catastrophizing. However, a series of head-to-head comparisons by Bowers and his associates revealed important differences between the two conditions (Hargadon, Bowers and Woody, 1995; Miller and Bowers, 1986; 1993). For example, the success of hypnotic analgesia was correlated with hypnotizability, while the success of the non-hypnotic coping mechanisms was not. Subjects in the stress-inoculation condition reported actively using the various coping strategies, while those in the hypnosis condition did not. The coping strategies, but not hypnotic analgesia, interfered with performance on a competing, attention-demanding task. And the deliberate use of counter-pain imagery had no effect on the success of hypnotic suggestions for analgesia. Taken together, these results appear to indicate that hypnotic analgesia is not mediated by stress inoculation and other consciously deployed coping strategies.

A similar story can be told about the effects of hypnosis on memory. Spanos (1986) hypothesized that hypnotic and post-hypnotic amnesia was produced by the conscious deployment of cognitive strategies

similar to those employed in directed forgetting or 'thought suppression', such as self-distraction, relaxation, and imagining a situation in which one cannot remember something. However, there are important differences between directed forgetting and post-hypnotic amnesia (Basden *et al.*, 1994; Coe *et al.*, 1989; Davidson and Bowers, 1991; Kihlstrom, 1983; Kihlstrom and Barnhardt, 1993). For example, post-hypnotic amnesia is reversible, while directed forgetting is not, suggesting that the former impairs retrieval while the latter impairs encoding. Post-hypnotic amnesia most closely resembles a variant of directed forgetting known as 'cuing by item sets' — which, unlike post-hypnotic amnesia, is not particularly effective in disrupting retrieval. Directed forgetting instructions are typically given after only a single study trial, while post-hypnotic amnesia is effective even with overlearned material. Directed forgetting is associated with the release of proactive inhibition, whereas post-hypnotic amnesia has no effect on retroactive interference. Directed forgetting and post-hypnotic amnesia appear to be positively correlated (Geiselman, Bjork and Fishman, 1983), but — as in Bowers' studies of analgesia — post-hypnotic amnesia is correlated with hypnotizability while directed forgetting is not (Coe *et al.*, 1989). Hypnotic suggestions not to think about some topic, which would seem to invoke precisely the process hypothesized by Spanos, do not give rise to the 'ironic rebound' associated with non-hypnotic instructions for thought suppression (Bowers and Woody, 1996).

3.3. Behavioural Correlates

Self-reports have always made psychologists nervous, even in the heyday of introspectionism (Boring, 1953). Accordingly, another (more salutary) residue of behaviourism is a methodological choice to focus on overt behaviour as a window onto the mind. Observable behaviour serves as the basis for objective scoring of the standardized scales developed for measuring individual differences in hypnotizability (Hilgard, 1965; Laurence, Beaulieu-Prevost and duChene, 2008; Woody and Barnier, 2008). Given the suggestion that an outstretched arm is holding a heavy ball, for example, the hand and arm must fall a specified amount within a specified interval of time. Following the suggestion that a fly is buzzing around the subjects' heads, they must make some overt gesture to brush it away. Note, however, that this overt behaviour is a consequence of the subject's altered subjective experience, and is of no interest in its absence. If the hand does not

feel as if it is holding a bowling ball, the fact that the subject eventually lowers it is simply a matter of behavioural compliance. For this reason, behavioural scores obtained under strong demands for compliance must be corrected downwards by instructions for honesty in reporting — that is, by self-reports (Bates, 1992; Bowers, 1967; Ruch, Morgan and Hilgard, 1974; Spanos and Barber, 1968).

Not only does the outstretched hand feel heavy, it also feels as if it is *falling by itself*. Most behavioural responses to hypnotic suggestions are accompanied by the experience of involuntariness: it appears as if the suggested effect is happening by itself, and is not the result of deliberate effort. This classic suggestion effect (Weitzenhoffer, 1974; 1980b) or non-conscious involvement (Shor, 1962; 1979) distinguishes hypnotic experience from behavioural compliance. Weitzenhoffer, who drew attention to the importance of the classic suggestion effect in hypnosis, worried that strictly behavioural assessments of hypnotic response could be distorted by behavioural compliance (Weitzenhoffer, 1980a). It is true that purely behavioural assessments of response to suggestions are sometimes dramatically corrected downwards by considerations of honesty in reporting, subjective success, or experienced involuntariness (Bates and Kraft, 1991; Spanos *et al.*, 1983). But this is not as serious a problem for the Stanford or Harvard scales of hypnotizability: on average, subjects report that their positive responses are experienced as involuntary about 80% of the time (Bowers, 1981; 1982; Bowers, Laurence and Hart, 1988; Farthing, Brown and Venturino, 1983; Hilgard, 1981). Subjects going through these traditional procedures understand that they are to let a response happen if it is happening, but not to push a response that is not. Accordingly, most behavioural responses to hypnotic suggestions appear to be experienced as subjectively convincing and involuntary. Still, because there are differences in the experience of involuntariness even among highly hypnotizable subjects (Terhune, Cardena and Lindgren, 2011; Terhune *et al.*, 2016), it cannot hurt to make sure this is the case, and correct subjects' scores as necessary.

Although hypnotic suggestions may *appear* to be executed automatically and involuntarily, they do not generally meet the traditional operational definition of automaticity: inevitable evocation, incorrigible completion, effortless execution, and parallel processing (e.g. Tobis and Kihlstrom, 2010; for more complete documentation, see Kihlstrom, 2007; 2008a). What is important is that hypnotic phenomena are *experienced* as involuntary — just as it is important

that behavioural responses are accompanied by subjective conviction, honestly reported. Behavioural responses to hypnotic suggestions are of no interest except as expressions of genuine changes in subjective experience. Self-reports correct behavioural responses to hypnotic suggestions, not the other way around. Overt behaviour, to paraphrase the 1928 *Book of Common Prayer* (not to mention St. Augustine), is an outward and visible sign of an inward and invisible state. There really is no way to avoid self-reports of subjective experience; the methodological trick is to collect them under circumstances where subjects believe it is legitimate for them to reflect accurately on their experiences (Orne, 1962; 1973).

3.4. Physiological Correlates

Because both self-reports and overt behaviours are subject to distortion by compliance and other social-influence processes, hypnosis researchers have long been interested in psychophysiological indices that are, ostensibly at least, not under voluntary control. A number of such proposals have been made over the years, dating back at least to Pavlov's idea that hypnosis is a state of general cortical inhibition. Many of these early ideas, like Pavlov's, proved to be contaminated by variables such as relaxation which are not intrinsic to hypnosis. The advent of powerful brain imaging technologies has led to a renewed effort to identify reliable neural correlates of hypnosis (Del Casale *et al.*, 2012; Halligan and Oakley, 2013; Kihlstrom, 2013; Landry and Raz, 2015; Oakley and Halligan, 2009; 2013).

One proposal is that hypnosis decreases activity in the 'default mode network' (DMN) in the brain, along with increased activity in the frontoparietal 'attention network' (Deeley *et al.*, 2012; Demertzi *et al.*, 2011; McGeown *et al.*, 2009). However, this pattern is unlikely to be specific to hypnosis. The DMN is active when subjects are not engaged in any task-specific mental activity (instead, they might be engaged in mind-wandering or simple daydreaming), and the induction of hypnosis typically begins with instructions for focused attention. It is not surprising that, once the hypnotic induction procedure begins, subjects cease daydreaming or mind-wandering and start paying attention to the hypnotist, but it is not at all clear that this shift in brain activity is a unique signature of hypnosis. The same sorts of shifts also occur in meditation (McGeown, 2016) — and, indeed, might occur in any situation where subjects settle down to focus on whatever task is at hand.

Alternatively, Woody and his colleagues have proposed that hypnosis entails alterations in the frontal-lobe brain systems which control voluntary behaviour, resulting in a decoupling of the monitoring and controlling functions of consciousness (Parris, 2017; Woody and Bowers, 1994; Woody and Szechtman, 2003). As a result, subjects can respond to various hypnotic suggestions by actively imagining the suggested situation — a heavy object pulling their hands and arms down, for example, or a fly buzzing annoyingly around their heads — without being aware of their own deliberate mental activities. These imaginative activities, in turn, generate corresponding behavioural responses through ideomotor action. In this way, voluntary, attention-demanding responses to hypnotic suggestions would be experienced as both subjectively compelling and involuntary (Kihlstrom, 1992a).

Although many studies of the physiological correlates of hypnosis have focused on 'neutral' hypnosis, that is not where the 'action' in hypnosis is likely to reside. Close your eyes: that is what it is like to be in 'neutral' hypnosis. Hypnosis counts as an ASC when subjects respond positively to suggestions for analgesia, age-regression, amnesia, and the like. And because subjects can have a wide variety of experiences while they are hypnotized, it is probably a mistake to expect that there would be any neurophysiological correlates of hypnosis in general. Accordingly, investigators who are interested in the neural correlates of hypnosis are more likely to find something interesting when they focus on the correlates of specific hypnotic suggestions. And, in fact, brain imaging studies have identified specific changes in brain activity corresponding to hypnotic paralysis (Halligan *et al.*, 2000), auditory and visual hallucinations (Szechtman *et al.*, 1998; Kosslyn *et al.*, 2000; McGeown *et al*., 2012), analgesia (Rainville *et al.*, 2002), agnosia (Raz, Fan and Posner, 2005), and amnesia (Mendelsohn *et al.*, 2008). The studies cited are just examples: for a more comprehensive listing, see Landry and Raz (2015). Note, however, that even these neural changes may not be unique to hypnosis. In a study of hypnotically induced colour blindness, for example, hypnotized subjects received a suggestion to perceive a grayscale stimulus as coloured, and a coloured stimulus in grayscale (Kosslyn *et al.*, 2000). Positive response to these suggestions was associated with changes in the 'colour area' (V4) of the occipital cortex, but these changes were the same as those observed when unhypnotized control subjects perceived coloured or grayscale stimuli, or when they simply *imagined* the stimuli as such. The brain changed with the experience, but the origins of the

experience — whether in stimulation, hypnotic suggestion, or vivid imagination — did not much matter. Such findings may testify to the 'reality' of the suggested experience, but it is not clear that they can tell us, for sure, whether subjects are hypnotized; they may have been imagining rather than hallucinating, or they may have been simulating hypnosis.

Oakley and Halligan (2010) and Mazzoni *et al.* (2013) have proposed a general framework for studying the neurophysiological correlates of hypnosis and hypnotic suggestions. This is an expanded 'Noah's Ark' (2x2x2) design crossing two levels of hypnotizability (low vs. high) with two levels of hypnosis (induction or no induction) and two levels of suggestion (suggestion or no suggestion). Such a design permits the separate evaluation of the neural correlates of hypnotizability, 'neutral' hypnosis, specific suggestions, and all their interactions — three two-way and one three-way. McGeown *et al.* (2012) implemented such a design in the context of suggestions for colour blindness and colour hallucination (see also, Mazzoni *et al.*, 2013). As studies like this accumulate, we may well find out which changes in brain activity are associated with the induction of hypnosis, and thus common across various hypnotic suggestions, and which are unique to the particular experiences that subjects are having.

To some extent, the search for neural correlates of hypnosis is inspired by the success of psychophysiological indices such as EEG and EOG in identifying the stages of sleep, or suggesting when a subject might be dreaming. But observations of brain and other physiological activity cannot be substituted for self-reports: at the very least, that would entail substituting a correlate for the criterion against which it has been validated. Cognitive neuroscientists generally caution against engaging in reverse inference, such as identifying particular mental states based on neuroimaging data, as an example of the logical fallacy of affirming the consequent (Poldrack, 2011). In any event, physiological indices have no privileged status in psychology, and the lack of specific neural correlates does not in and of itself argue against the classification of hypnosis as an ASC.

4. Hypnosis and Dissociation

Setting aside the issue of how ASCs can be defined in general, how can we characterize the alterations in consciousness observed in hypnosis? In general, the phenomena which comprise the domain of hypnosis appear to entail divisions in consciousness affecting

percepts, memories, and other mental contents, which continue to influence behaviour subconsciously, outside of phenomenal awareness (for more complete documentation, see Bowers and Davidson, 1991; Kihlstrom, 1984; 1998; 2007; 2008b). This situation is epitomized by dissociations between explicit and implicit memory — changes in experience, thought, and action attributable to prior experience which occur in the absence of conscious recollection of that experience (Kihlstrom, Dorfman and Park, 2017; Schacter, 1987). To take the most thoroughly investigated example, post-hypnotic amnesia affects recall, recognition, and other aspects of explicit memory, but spares repetition and semantic priming effects, as well as other manifestations of implicit memory, such as retroactive and proactive interference effects, savings in relearning, source amnesia, and procedural learning. When responses to post-hypnotic suggestions are accompanied by post-hypnotic amnesia, as is typical, that too counts as a dissociation between explicit and implicit memory (Kihlstrom, 1997).

By analogy with implicit memory, the implicit–explicit distinction can be extended to other cognitive domains (Kihlstrom, 2012). For example, implicit perception is reflected in any change in experience, thought, and action attributable to a stimulus in the *current environment* (as opposed to a past event), in the absence of conscious perception of that stimulus (Kihlstrom, Barnhardt and Tataryn, 1992). And as with implicit memory, dissociations between explicit and implicit perception can be observed in hypnosis. For example, semantic priming is preserved in subjects who have been shown homophones plus disambiguating context words during hypnotic blindness, and thus did not consciously perceive the words (Bryant and McConkey, 1989). Implicit expressions of perception can be seen in other ways as well. Hypnotic analgesia, for example, does not abolish physiological responses to painful stimuli (Hilgard and Morgan, 1975); hypnotic deafness does not reduce speech dysfluencies created by delayed auditory feedback (Spanos, Jones and Malfara, 1982); priming enables subjects experiencing hypnotic anaesthesia to detect tactile stimuli at better than chance levels, even though they cannot consciously feel them (Tataryn and Kihlstrom, 2017). Hilgard's 'hidden observer', observed in hypnotic analgesia and deafness (Hilgard, Morgan and Macdonald, 1975), and Orne's 'trance logic' observed in age-regression and hypnotic hallucinations (Orne, 1959), also reflect this fundamental division in consciousness — showing that, whatever the subject's conscious experience, the

actual stimulus state of affairs is also being processed, albeit outside of awareness.

The fact that dissociations between explicit and implicit memory, perception, and the like occur in other conditions, and even in subjects tested in the normal waking state, does not vitiate their status as reflections of altered consciousness in hypnosis. In accordance with the hypnotist's suggestions, hypnotized subjects perceive objects that are not present in the environment, and remember things that did not happen in the past. They also fail to perceive and remember objects and events that *are* present, and events that *did* happen. Nevertheless, the objectively true state of affairs continues to influence their experience, thought, and action. Other states involve different alterations in consciousness; but this is what it is like to be hypnotized.

5. 'State' as Category

It has been suggested that the 'altered state debate' has been something of a distraction for researchers and clinicians interested in hypnosis (Jensen *et al.*, 2017; Terhune *et al.*, 2017). On the other hand, it's not clear how much of a distraction it has actually been. If we date the beginnings of modern hypnosis research to the initial publication of the Stanford scales in 1959, according to the PsycInfo database there were 8,651 publications through 2017 with 'hypnosis' in the abstract, but the phrase 'altered state' appeared in only 142 of these (1.64%). There has been plenty of time and effort devoted to understanding the mechanisms underlying various hypnotic phenomena, the structure of hypnotizability, and the usefulness of hypnosis in medicine and psychotherapy.

The debate over hypnosis as an ASC has often been confused about how to think about the concept of *state* itself. In this respect, Hilgard carefully distinguished between 'states as causes' and 'states as categories' (Hilgard, 1969, p. 75). He doubted that hypnosis qualified as a state in the former sense, not least because all phenomena elicited in hypnosis can also be elicited post-hypnotically, and promoted the latter view — most clearly in a later paper marking out 'the domain of hypnosis' (Hilgard, 1973a). That domain includes suggestions for various kinds of non-veridical experiences, responding to which often entails a division in consciousness evidenced by dissociations between explicit (conscious) and implicit (unconscious) expressions of memory and perception. Hypnosis does not cause these alterations in consciousness to occur, nor does it explain them; but it is character-

ized by them. As such, it seems reasonable to refer to hypnosis itself as an ASC — a state defined by a typical induction procedure and subjective experiences, concomitant behavioural responses, and, perhaps, a characteristic neurophysiological signature as well.

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