

Theories of hypnosis

Beginning with Mesmer's advancement that a magnetic ether explained the effects he observed, theorists have put forward mechanisms to explain the phenomenon observed in hypnosis. It is now generally accepted that any adequate theory of hypnosis must use concepts compatible with general psychological models of consciousness.

The key theories of hypnosis, historical and current, are presented here. For the more recent models some knowledge of cognitive psychology is useful. Within psychology most current models of what is termed 'executive function' make use of the concept of an executive control system (**Norman & Shallice, 1980/86**) - **a description of what is meant by executive control is given on this page.**

Dissociated control theory (DCT)

Bowers (1992) / Woody & Bowers (1994)

This theory applies the **Norman and Shallice model of executive control** to explain hypnotic responding. When highly hypnotizable individuals are hypnotized the DCT model proposes that the SAS has become functionally dissociated from the CS - that is, these two levels cease to work together effectively. With the higher level control system partly disabled when high-hypnotizables are hypnotized, the individual is more dependent upon CS-based automatic processes. Contextual cues and influence from the hypnotist influence the contention scheduling system, and this determines the hypnotized person's experience.

A number of studies have been conducted to test hypotheses generated by DCT and are reviewed in more detail in **Jamieson & Woody (2007)**. One study using a difficult version of the Stroop task (difficult so that it should require strong SAS involvement) found that highly susceptible individuals in hypnosis produced more errors than low hypnotizables - a result predicted by DCT. However, some other studies have found evidence for enhanced attentional control under hypnosis - contrary to what DCT would predict. **Jamieson & Woody (2007)** conclude that current data do not support a simple global shutdown of frontal functioning during hypnosis.

Woody & Sadler (2008) presented an integrative model of dissociative theories of hypnosis, shown above. and their chapter provides a comprehensive overview of this topic. In their model, a theory of dissociated experience involves the weakening of path c, and possibly of path e. A theory of dissociated control involves the weakening of path b, and possibly of path a. A theory of second-order dissociated control involves the weakening of path d.

Dissociated-experience theory

Kihlstrom (1985)

Argues that high hypnotisables execute hypnotic responses effortlessly, but that this effort is dissociated, or blocked, from consciousness.

Social-cognitive theory / Response set theory**Lynn, Rhue & Weeks (1990) / Kirsch & Lynn (1997)**

This theory argues that the experience of effortlessness in hypnosis results from participant's motivated tendencies to interpret hypnotic suggestions as not requiring active planning and effort, i.e. the experience of effortlessness stems from attributional error. The attribution of volition depends on the kind of response-set which has been put into place. **Implementation intentions** are a representation of the form:

'When x happens, I will do y'

whereas **response expectancies** are representations of the form:

'When x happens, y will occur'

Kirsch and Lynn (1997) propose that subjects in a hypnotic situation have a generalized response expectancy that they will follow the hypnotists's instructions and produce behaviours that are experienced as involuntary. A consequence of this is that these subjects attribute hypnotic responses to external causes and experience them as involuntary. According to this theory hypnotic responses are initiated by the same mechanisms as voluntary responses, the difference is in how the behaviours are experienced.

One important factor to note when considering socio-cognitive theories of this sort is that they do not imply that subjects are always 'faking', or not really experiencing a hypnotic response. Although these models use terms such as 'role enactment' or 'self-presentation' they are still entirely consistent with the notion that hypnotised participants have unusual experiences. (**See an elaboration of this point on the state/non-state page**)

Neodissociation theory (Hilgard, 1979, 1986)**Hilgard (1979, 1986)**

Hilgard's Neodissociation theory proposes that hypnotic phenomenon are produced through a dissociation within a high level control systems (note that this is unlike the dissociation between high and low level control systems in dissociated control theory). Essentially, the hypnotic induction is said to split the functioning of the executive control system (ECS) into different streams. Part of the ECS functions normally, but is unable to represent itself in conscious awareness due to the presence of an 'amnesic barrier'. Hypnotic suggestions act on the dissociated ECS and the subject is aware of the results of the suggestions, just not the process by which they came about.

Hilgard's theory was inspired by his experiments with the 'hidden observer' phenomenon whereby a 'hidden part' of the mind of a subject experiencing suggested hypnotic

analgesia could be encouraged to elicit reports of the 'true' pain experience. The hidden observer remains a controversial notion and is still the topic of investigation, the idea that the hidden observer demonstrates the presence of conscious and unconscious executive systems in hypnosis is controversial (**Heap et al, 2004; Kirsch & Lynn, 1998**).

An illustration of Hilgard's hierarchical model of cognitive control is shown above (**Hilgard, 1973**). **Woody & Sadler (2008)** note that Hilgard's ideas of an 'amnesic barrier' and the 'hidden observer' do not sit comfortably with cognitive or physiological psychological models.

Neurophysiological theory

Crawford & Gruzelier (1992) / Gruzelier (1998)

These models propose that 'highs' have better executive function than 'lows' and can thus deploy their attention in different ways. Gruzelier (1998) presents a model of hypnosis characterised by changes in brain function. The model is described in three stages, each with its own characteristic pattern of brain activity. Like some of the other dissociation theories Gruzelier's account emphasises that changes in the way the attentional control system functions in hypnosis renders the subject more susceptible to suggestion. In the first stage of the induction the subject pays close attention on the words of the hypnotist and activity is increased in predominantly left-sided fronto-limbic brain regions. In the second stage the subject 'lets go' of controlled attention and gives control to the hypnotist. In this second stage there is a reduction in left frontal activity. The third stage sees an increase in right-sided temporo-posterior systems as the subject engages in passive imagery. By exhausting their frontal abilities during the induction the highs end up frontally impaired in a hypnotic state (Dienes & Perner, 2007).

Gruzelier's model finds some support from behavioural and neurophysiological evidence and complements other state-like accounts of hypnotic functioning. However, interpretation of much of the evidence critical to such models is questioned by sociocognitive theorists (e.g. **Wagstaff, 2004**). Crucially, the predictions of enhanced executive skills in high hypnotizables are testable.

Integrative cognitive theory

Brown & Oakley (2004) / Brown (1999) / Oakley (1999)

Placing emphasis on the nature of perception and consciousness, Brown & Oakley (2004) incorporate ideas from both dissociated control and response set theories. They include the DCT concept that suggested responses may be facilitated by an inhibition of high-level attention, and the response-set idea that suggested involuntariness is an interpretation or attribution about the causes of behaviour.

Cold control theory

Dienes & Perner (2007)

This recent theory considers the distinction between control and awareness in terms of Rosenthal's (2002) HOT (higher order thought) theory. According to Rosenthal we are conscious of mental states by having thoughts about those states. A thought about being

in a mental state is a second-order thought (SOT), because it is a mental state about a mental state (e.g. 'I see that the cat is black'). Third-order thoughts (TOTs) are also possible, by becoming aware of having an SOT (e.g. 'I am aware that the cat I am seeing is black'). The cold control theory of hypnosis states that a successful response to hypnotic suggestions can be achieved by forming an intention to perform the action or cognitive activity required, without forming the HOTs about intending that action that would normally accompany reflective performance of the action.

Read a full description of cold control theory on Zoltan Dienes' page

Ego-psychological theory

Fromm (1979, 1992)

Based on Shor's idea that the depth of a hypnotic trance is related to the degree to which the participant loses awareness of the distinction between imagination and reality, termed the 'generalized reality orientation' which is characteristic of normal psychological functioning. Distinguishes between primary processes (emotional, holistic, illogical, unconscious, developmentally immature) and secondary processes (affect-free, analytical, logical, conscious, developmentally mature). Whereas normal adult functioning is biased towards secondary processing the induction of hypnosis makes the subject 'let go' of some secondary process activity. **Heap et al (2004)** characterise the evidence for ego-psychological theory as mixed.

Conditioning and inhibition theory

Barrios (2001)

In this theory a hypnotic induction is defined as the giving of a set of suggestions so that a positive response to a previous suggestion conditions the subject to respond more strongly to the next suggestion. This induction is placed in a conditioning paradigm. A hypnotic induction is explained as the conditioning of an inhibitory set, which increases responsiveness to suggestion by inhibiting stimuli and thoughts which would contradict the suggested response.