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The Functional Foundation of Hypnotherapy in Current Research A Brief Overview

Alexander J. Shadikhan

Northwestern Medicine Behavioral Health United States of America.

***Corresponding Author**
Alexander J. Shadikhan,
Northwestern Medicine Behavioral Health United States of America.

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Abstract

Our understanding relies on current research about its therapeutic potential. Recent research suggests that the process depends on both individual characteristics, the amount of resistance offered by the patient, and the skill of the therapist. Highly susceptible patients offer little resistance to the direction of the therapist and are more likely to engage in fantasy (Zhang et al., 2017). At deeper level GABA mediated by glutamate is more likely to play a part in responsiveness and suggestibility (DeSouza et al., 2020). There is a change in the DMN known for context monitoring and executive functions (Spiegel, 2013) leading to more reliance on verbal direction by the therapist. As the process becomes more involved there is an increased tendency for DMN deactivation (especially in the medio frontal portion) during relaxed periods, specifically there is a reduced coupling between DLPC (dorsolateral prefrontal cortex) and the PCC or the posterior cingulum (Jiang et al., 2016) producing moments of greater sense of clarity (Peter, 2024). The role of memory retrieval is questionable due to the influence of the therapist and the impact of other related memories. The role of hypnotherapy becomes to deal with remnants of a perceived memory and more importantly with the emotions evoked by the relevant memory. Despite this understanding, the true mechanism and how it works to effect outcome seems allusive.

Keywords: Hypnotherapy, Trance states, Visualization, Focus, Relaxed Focus.

Hypnotherapy has progressed from entertainment to a more recognized therapeutic approach, comparable to more established interventions. Understanding of current research has changed most of the preconceived notions and extinguished most of the criticism that has been a hindrance as to recognizing its potential. Most research has shown that hypnotherapy involves a complex process, emphasizing internal rather than external focus (Jiang et al., 2016). In essence, the internal world built on visual imagery, attention, and known dynamics of memory systems exist in parallel to the external environment. To understand the basis of this dynamic, it is necessary to examine the role of unconscious mechanisms that are hidden from both our conscious awareness and from our automatic behavioral response to any given external event. Most cognitive research suggests that behavior relies on past experiences stored in memories before creating a response. Accessing these memories from the unconscious typically involves achieving a relaxed yet attentive state through what are understood to be stand-alone techniques used in combination such as visualization, deep breathing, and focus to achieve the desired result. Even though a complete understanding of the pathways utilized in hypnosis have been allusive, current research indicates that the retrieval of memories are linked to significant changes in neural pathways (Halsband et al., 2009), changes in perception (Benedetti, 2009), and related to the overall neuroplasticity of cognitive function leading, eventually, leading to changes in overt behavior (Gazerani, 2025). The initial stage of induction becomes the precursor to this inward journey and is responsible for the overall success of the treatment.

The rate of success of Induction relies on personal characteristics of the patient undergoing hypnotherapy, the amount of resistance encountered, and the skill of therapist. Specifically, the more susceptible to suggestion a patient seems to be, the greater the likelihood of a positive therapeutic outcome and conversely the less susceptible to the patient, the less likelihood of success. Most research indicates that the High susceptibility group are prone to greater openness to experience, as well higher degree of fantasy and a decrease in awareness of external environment including external auditory stimuli during Induction (Zhang et al., 2017). Other researchers have suggested that there is an increase in GABA (gamma-aminobutyric acid) mediated by glutamate is responsible for increasing suggestibility and the likelihood of responsiveness (DeSouza et al., 2020). The process of Induction relies on two variations in approach and is defined as either direct or indirect. The direct approach is more affective in High susceptibility group as they are more compliant with direction. Conversely, the indirect process seems to work better in some Lower hypnotizable or more resistant groups in achieving a trance state, even though overall there were no significant overall differences in responsiveness between either the high or low groups (Robin et al., 2005). Research has noted that the use of

High-imagery words has a pronounced effect on the activation of the Occipital cortex and is likely to improve performance in memory (Halsband et al., 2009).

Generally, verbal direction by the therapist has a two-fold purpose. The first is to keep the mind from wandering and secondly allows for most of the focus of cognitive resources allocated to the task at hand. Within the context of hypnotherapy, there are indications that tactile, auditory, and verbal information are synthesized by the visual cortex into a unitary impulse (CSaszar et al., 2016). The visual cortex is involved in a noted increase in both fantasy and hallucinogenic tendencies (Zang et al., 2017). This process is responsible for physiological, neural, and chemical changes that have been noted to occur as the hypnotic trance becomes deeper, and as the patient relinquishes increased control to the hypnotherapist.

Most of these changes have been detected in various instruments such as EEG, fMRI, and PET research. Changes in prefrontal activity, insula, anterior cingulate cortex have been of importance in understanding increased functional connectivity, imagination, perception, and modulation in motor control occur during the trance states. Increased functional connectivity occurs between the prefrontal cortex and the anterior cingulate cortex have been observed in many instances with an increase in cortical thickness (Menon & Bhagat, 2025). Alteration in perception, particularly of pain and anxiety, occurs during this process in the dorsal anterior cingulate and the DLPC responsible for context monitoring and executive function (Spiegel, 2013). As the process becomes more involved there is an increased tendency for DMN deactivation (especially in the medio frontal portion) during relaxed periods, specifically there is a reduced coupling between DLPC (dorsolateral prefrontal cortex) and the PCC or the posterior cingulum (Jiang et al., 2016) producing moments of greater sense of clarity (Peter, 2024). During these moments of clarity, learning and analysis of task driven events seem to occur. Furthermore, there are indications, especially in the High hypnotizable group, that they are aware that they are under hypnosis. Despite this positive outlook, other studies seem to suggest that minimal activity of DMN also can lead to fewer inhibitions in overt motor and behavioral activity due to a greater control by the therapist stemming from a decrease in self-image, self-referencing, and empathy (Parris, 2016). Motor activity has been noted during hypnotherapy without apparent voluntary control as noted in studies in corticospinal activation studies and can lead to enhanced physical performance in High hypnotizable groups (Cesari et al., 2020). The effects of modulation in these mechanisms, the influence of verbal direction, are not completely understood, as they relate to retrieval of memories are not fully understood.

Retrieval of memory and memory events involves reactivation of stored memory systems involving a complex relationship between various structures. Specifically, it relies on the main cortical areas, namely the prefrontal cortex, medial-temporal lobe, parahippocampal gyrus, and the hippocampus and medial temporal lobe noted for acquisition and retention of declarative memory Menon, Sheila & Bhagat, Vidya. (2025). Srokova (2023) suggested that evidence based on the past twenty years, retrieving memory relied on scene selection involving the parahippocampal area (PPA), early visual areas, anterior PPA exhibiting an active coupling with Hippocampus. Based on this assumption, perceptual information is made by the posterior scene selective network whereas anterior regions are responsible for anything beyond the observer's view. Most memories, especially those related to events that occurred in the past, are prone to be inaccurate or implausible due to many factors affecting retrieval of long-term memory. Distortions in visual memory can occur due to overlapping of perceived and imagined events in encoding visual imagery (Gonsalves & Paller, 2001). Other factors affect the recovery of memories include age, stress, mood, anxiety, health, and cognitive challenges that lead to false memories (Leo et al., 2025). The role of hypnotherapy becomes to deal with remnants of a perceived memory and more importantly with the emotions evoked by the relevant memory.

The success of hypnotherapy relies on a few basic factors, the individual characteristics of the subject, and the ability of the therapist to instill a degree of trust leading to a sense of comfort and relaxed yet focused atmosphere. Hypnotherapy creates a focus on the internal environment away from the interference caused by stress, and automatic responses incurred by the external environment. In essence, the individual undergoing hypnotherapy becomes both the observer of the perceived process and the observed at about the same time. During the process there are many processes at play as noted changes occur in the DMN, the active role of the visual cortex, the prefrontal cortex creates the internal environment within which change, learning and analysis are fostered. Resulting in the treatment of physical and psychological issues and problems through symptom reduction (Kendrich, 2016). Other studies have noted increased resilience due to its capacity to modulate affective outcomes through hypnotherapeutic intervention (Menon & Bhagat, 2025). Without a concrete model we can only speculate about the gaps present in this process. However, as more research comes to light, the full potential use of hypnotherapy will become more evident.

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