

What is hypnotic trance? Does it provide unusual physical or mental capacities? [credits]

by Todd I. Stark

2.1 'Trance;' descriptive or misleading?

Most of the classical notions of hypnosis have long held that hypnosis was special in some way from other types of interpersonal communication **and** that an *induction* (preparatory process considered by some to be necessary in the production of hypnotic phenomena) would lead to a state in which the subject's awareness and behavioral responding was some how altered from the usual.

The name historically most commonly associated with this altered state of functioning is 'trance,' a term shared by the description of the activities of certain spiritualist mediums and other phenomena that some psychologists might refer to as 'dissociative,' because something about the individual's personality appears split off from the usual response patterns to the environment.

Trance, for reasons we shall examine here, can be a very misleading term for what is going on in hypnosis, since it is not necessarily a sleep or stupor as some of traditional connotations of the term trance imply.

But 'trance' is so ubiquitous in literature that it might serve us to be familiar with its uses and the issues underlying it, and to use it as a starting point.

There were a great many experimental and clinical studies done to try to determine what might be unique about hypnosis, as opposed to other kinds of situations (e.g. people simply being motivated to comply with the hypnotist; i.e. hypnotic simulators). Outward behavioral signs and virtually every physiological measurement reported in hypnosis differ seemingly not at all from the usual waking state of consciousness, as the non-state theorists contend.

Years of careful analysis by a number of researchers were mostly fruitless in turning up any reliable physiological correlates of hypnosis that were not (1) related to the relaxation associated with the induction (most inductions, but not all, involve physical relaxation); or (2) an obvious result of a suggestion

measurements and subjective reports indicate deep relaxation accompanying some hypnosis but not all hypnosis. Hypnotic suggestibility is apparently not limited to relaxed states.

In Morse, Martin, Furst, & Dubin, "A physiological and subjective evaluation of meditation, hypnosis, and relaxation," from *Journal Psychosomatic Medicine*. 39(5):304-24, 1977 Sep-Oct, a representative study of relaxation was done.

Subjects were monitored for respiratory rate, pulse rate, blood pressure, skin resistance, EEG activity, and muscle activity. They were monitored during the alert state, meditation (TM or simple word type), hypnosis (relaxation and task types), and relaxation. Ss gave a verbal comparative evaluation of each state. The results showed significantly better relaxation responses for the relaxation states (relaxation, relaxation-hypnosis, meditation) than for the alert state. There were no significant differences between the relaxation states except for the measure "muscle activity" in which meditation was significantly better than the other relaxation states. Overall, there were significant differences between task-hypnosis and relaxation-hypnosis. No significant differences were found between TM and simple word meditation. For the subjective measures, relaxation-hypnosis and meditation were significantly better than relaxation, but no significant differences were found between meditation and relaxation-hypnosis.

There are a few more recent attempts to find physiological correlates of hypnotic suggestibility. One of these was EEG research by David Spiegel of Stanford, published in the *Journal of Abnormal Psychology*, 94:249-255, by Spiegel, Cutcomb, Ren, and Pribram, (1985) "Hypnotic Hallucination Alters Evoked Potentials." Spiegel seemed to find an evoked response pattern that appeared during hypnotically suggested hallucination yet not during simulation of hypnotic hallucination. Nicholas Spanos and others have argued that this EEG data has been misinterpreted given the nature of the control subjects used. (Author's response to commentary by Spiegel, of Spanos, N. (1986) "Hypnotic Behavior: A Social-Psychological Interpretation of Amnesia, Analgesia, and 'Trance Logic'." *Behavioral and Brain Sciences* 9:449-502).

In another similar attempt, from 1976, but measuring certain frequencies of EEG activity rather than evoked potentials, a Russian journal reports some tentative success at finding a physiological correlate to hypnotic induction. See Aladzhhalova, Rozhnov, & Kamenetskii, "Human hypnosis and super-slow electrical activity of the brain." [RUSSIAN] *Zhurnal Nevropatologii I Psikiatrii Imeni S - S - Korsakova*. 76(5):704- 9, 1976.

In the above article, the authors studied the transformation of infraslow oscillations of brain potentials in 15 patients with neuroses during 50 sessions of hypnosis. The results of such studies permitted to distinguish some important traits in the changes of infraslow oscillations of brain potentials in

2.2. Are there potential clues in 'trance logic?'

One particular researcher, psychiatrist M.T. Orne of the University of Pennsylvania, finally concluded that objective correlates were not to be found in the available physiological measurements of the time, and that they were apparently of no value in determining whether a hypnotized subject was 'truly hypnotized' or 'simulating hypnosis.'

Orne, who did recognize from both highly consistent verbal reports of hypnotized subjects and from various clinical and empirical studies that there was indeed *something* unique about hypnosis in at least *some* subjects, concluded that that he would have to use verbal reports of subjective experience rather than rely on measurements. He carried out a series of clever experiments which seemed to establish a reliable way of distinguishing simulators from hypnotized subjects by their verbal reports. The resulting alteration of mental function was found to be present in nearly all deeply hypnotized subjects, and almost never found to the same degree in people who were not hypnotized but were motivated to simulate hypnotic phenomena.

The most obvious aspects of this alteration of function were dubbed 'trance logic,' and appeared to correlate well with the anecdotal reports of the clinicians like Milton Erickson who had long considered verbal reports of hypnotized subjects to be valuable in distinguishing what was going on in hypnosis.

2.3. What is Trance Logic?

Trance logic refers to a set of characteristics of mental functioning that are specifically found in 'deep trance' phenomena of hypnosis, as opposed to 'light trance,' which has not even reliable subjective correlates and cannot really be distinguished from simulation experimentally. These characteristics involve particularly an alteration in language processing. Words, in trance logic, are interpreted much more literally, communication being conveyed by focusing on words themselves rather than ideas. There is also an associated decrease in critical judgement of language being processed, and an increased tolerance for incongruity.

It is in some ways as if the subject were like a small child with very limited experience to use in interpreting ideas conveyed by the hypnotist. There also is a shift toward what psychoanalysts call 'primary process' thinking, or thinking in terms of images and symbols more than words; an increased availability of affect; and other characteristics that simulators do not consistently reproduce.

This consistent set of characteristics of deep trance has been one of the

experienced (see the later section on the reliability of recall in hypnosis) the theory that trance generally represents some kind of psychological regression to an earlier developmental stage has long been popular in some circles.

2. Partly because the individual appears to become disconnected somehow with the usual context they use to evaluate ideas, a cognitive dissociation theory arose. (Also partly because of anomalies involving apparent multiple simultaneous 'intentions.')
3. Partly because the cues prompting the subject's behavior become more internal and progressively more obscure to an outside observer, trance has been viewed as 'contact with the unconscious mind.'
4. Largely because some of the characteristics of trance logic correlate well with some of those discovered to be specialized in many people in the non-dominant cerebral hemisphere, there is also a popular theory that deep trance involves a somehow selective use of one hemisphere of the brain, or in the most simplified version of this theory, a 'putting to sleep' somehow of the dominant (language specialized) hemisphere. Some brain scientists strongly disagree with this view, emphasizing the complex interdependence of the brain hemispheres even in typical hypnotic-type situations.

2.4. Critique of Trance Logic

The notion of trance logic, rooted as it is in subjective reports, has been questioned by some of the non-state theorists, such as Nicholas Spanos, who do not believe that trance logic represents any sort of defining characteristic of hypnotic responding.

Examples of critiques of this concept can be found in Nicholas Spanos, "Hypnotic behavior: A social-psychological interpretation of amnesia, analgesia, and 'trance logic,'" *Behavioral and Brain Sciences* 9(1986):449-502, and a paper cited by Spanos in the above; Nicholas P. Spanos, H.P. de Groot, D.K. Tiller, J.R. Weekes, and L.D. Bertrand, "'Trance logic' duality and hidden observer responding in hypnotic, imagination control, and simulating subjects," *Journal of Abnormal Psychology* 94(1985):611-623.

2.5. Trance as distinct from sleep or stupor

I think we can fairly conclude from the research on hypnosis done so far that 'trance' may in fact have useful meaning for describing the subjective experience of subjects in hypnotic situations, but is not explained, or even described, by any one simple theory yet proposed, either neurological or psychological. All of the current theories seem to leave aspects unexplained.

Clearly, selective cerebral inhibition and activation of *some kind* is involved

truly is distinct in some way, as subjective data appear to suggest.

The most common neurological theories of hypnosis over the years as a form of partial sleep have mostly been based on (1) the superficial resemblance of a classically induced subject to a near-sleeping person, (2) on the ease with which a deeply hypnotized subject will fall off to sleep on suggestion or if hypnosis is not explicitly ended, and (3) because various drugs that induce sleep-like or stuporous states can produce some of the same characteristics as hypnotic trance.

It has been very consistently determined that trance itself has nothing at all to do with sleep, and is much more easily distinguished from a sleeping state physiologically than from a waking state. Measurements attempted included a number of famous early experimental studies in the 1930's, on such variables as EEG measurements, cerebral circulation, heart rate, respiration, basal metabolism, and various behavioral parameters. Representative of these experiments comparing hypnosis and sleep was: M.J. Bass, "Differentiation of the hypnotic trance from normal sleep," *Journal of Experimental Psychology*, 1931, 14:382-399.

Though the mentation in hypnosis often resembles dreaming, it appears much closer to *daydreaming* in character than to normal night time dreaming.

Clark Hull, in his 1936 classic *Hypnosis and Suggestibility* describes a number of experimental setups for distinguishing the *mental* characteristics of sleep from those of hypnotic trance.

One thing suggested by this is that if sleep can be viewed as largely a generalized cortical inhibition, and trance is not in any determinable way identified with sleep, that trance is **not** a form of sleep or a stupor. This is also easily determined by observing the range of activities possible in hypnotized subjects (compared to waking subjects and those under the influence of depressant drugs).

2.6. 'Trance Reflex' and the appearance of stupor

So the question remains, if trance is not sleep or stupor, then why do hypnotized subjects commonly appear so passive?

The consensus on this subject, from studies of 'waking hypnosis,' ('trance' in which the subject acts normally and does not show any evidence of the classical relaxed deep trance state), and from many years of clinical observations, is that the apparent lethargy and catalepsy are more a result of suggestions used to deepen hypnosis than a necessary correlate of suggestibility or trance itself in general. In a way, a side-effect of trance rather than a quality or cause of trance. There is also seemingly a temporary but

other factors have long been observed to produce 'trance' with fixation (followed by defocusing) of gaze, narrowing or attenuation of externally focused attention, general immobility, and various physiological changes which resemble the correlates of relaxation and *internally directed* (visual) attention in humans.

Perhaps the most routine observance of this is with people gazing into television sets or in the familiar case of 'highway hypnosis.' It appears that this type of 'trance' induction often precedes the production of hypnotic suggestion phenomena, and can occur prior to any verbal suggestions, from proprioceptive or visual stimuli alone. It is probably closest to the traditional view of the hypnotist swinging a watch to put their subjects 'to sleep.'

One means of searching for the basis for this seemingly reflexive trance response is from phylogenetic data, using animals. A similar response occurs in monkeys and other animals under both laboratory and natural conditions, as an apparent passive defensive response (resembling death) under certain extreme conditions.

Various Russian researchers investigating animal hypnosis seem to have discovered electroencephalographic correlates of this animal 'death trance' which resembles the initial trance/inhibition effect that sometimes precedes human hypnotic suggestibility. They report an interhemispheric asymmetry of the brain, which a recent Russian email journal article, (Petrova E.V., Shlyk G.G., Kuznetsova G.D., Shirvinska M.A., Pirozhenko A.V., HYPNOSIS IN MACACA RHESUS IS CHARACTERIZED BY DIFFERENT PHASES AND INTERHEMISPHERIC EEG ASYMMETRY), summarizes as being

"created as the result of the activation of the right hemisphere."

They cite:

- Simonov P.V. The Motivation Brain, Gordon a. Breach Pub., N.Y.-L., 1992.
- Kuznetsova G.D., Nezlina N. I., Petrova E.V. Dokl. Akad. Nauk, 1988, 302:623.
- Petrova E.V., Luchkova T.I., Kuznetsova G.D. Zh. Vyssh. Nerv. Deyat. 1992, 42: 129.

As evidence of a correlation between right hemisphere cortical activity and human hypnosis, they cite:

- Gruzeiler J., Brow T., Perry A. et al. Int. J. Psychophysiol., 1984, 2:131.
- Meszaros J., Growford H.J., Nady-Kovacs A, Szabo Cs., Neuroscience, 1987, Suppl. 22:472.

One investigation into the relationship of primate behavior and electrical

At first their eyes were fixed on the ball, then muscle tonus weakened, eyes became unfocused, and respiration slowed. These same symptoms appeared in the remaining animals, although they developed slower. During the first 2-3 minutes of the stimulation, the slower responding monkeys showed a negative reaction to the ball (a monkey abruptly turned away or tried to push it away). Then the negativism ceased and the first signs of inhibition appeared: yawning, scratching, and obtrusive hand motions.

Finally, what the experimenters call the 'hypnotic state' ensued; eyes fixed on the ball, the animal became calm, and closed its eyes. This state continued from several seconds to several minutes and could be observed several times during an experimental session. In 12 monkeys that displayed orienting or aggressive response to the ball, visual signs of inhibition were not observed under these conditions. Further physical restraint (fixation of hands and trunk) resulted in the 'hypnotized' behavior. This is in contrast to the more usual behavior of monkeys, what the authors of the article call the 'freedom reflex' which results when they are taken from their home cages and placed in the primatologic chair.

As they describe the EEG observations:

"The electrical activity of monkey brain cortex before hypnosis was characterized by a robust polyrhythmia and presence of theta- and beta-rhythms. In one monkey the alpha-rhythm was dominate. During hypnosis, slow activity (delta and theta) with increased amplitude appeared, periodically alternating with low-amplitude activity. Power spectrum maps showed that in the low-amplitude phase the decrease in the power of all rhythms was paralleled in three monkeys with robust beta-1 rhythm with a predominance in the left hemisphere. In the high-amplitude phase, delta and theta-rhythms dominated in the right hemisphere."

"The analysis of the coherence and correlation functions showed the decreased relationship between hemispheres (especially in the frontal cortical areas) under hypnosis and its increase during relaxation (as compared to the background)."

"The analysis of the EEG showed that in the brain of hypnotized monkeys interhemispheric asymmetry appears: the domination of the theta- and delta-rhythms in the right hemisphere or beta-rhythm in the left hemisphere - depending upon the phase of hypnosis."

Factors shown to facilitate this "animal hypnosis" include vestibular (pose in the chair) and somatosensory (fixation) stimuli and emotional stress (fear), novelty to the experimental conditions, and additional proprioceptive (restriction of the motor freedom) and visual influences. Various sources

deep trance also adds to the catatonic appearance, as the primitive language capacity in trance logic could easily contribute to the appearance of stupor. But the individual is actually, in general, wide awake and thinking, and in control of themselves, but extraordinarily focused on their internal experience, and on the voice of the hypnotist.

"... the general tendency of the hypnotic subject to be passive and receptive is simply expressive of the suggestibility of the hypnotic subject and hence a direct result of the suggestions employed to induce hypnosis and not a function of the hypnotic state."

Milton Erickson, circa 1944.

The most obvious reason to make this distinction is to dispell the popular myth that a hypnotized person is unconscious or unable to respond to emergencies, or to oppose the will of the hypnotist if they should wish to do so. In fact, Erickson did a famous detailed study of attempts by the hypnotist to force their will on hypnotized subjects, and observed that not only did the subjects discriminate what suggestions they would and would not respond to, and refused to respond to some, but then often came up with ways to hurt or humiliate the hypnotist in retaliation for the attempt. And that they were even more selective about what suggestions they would not respond to under hypnosis than they were normally!

Another reason this distinction is made is because of extraordinary skills of some hypnotists to 'induce trance' (gain a unique kind of compliance or communication) with people who had not been prepared or relaxed by a classical induction, and who in fact steadfastly and effectively resisted all attempts at classical induction of trance.

A third reason is that we observe in some hypnotic phenomena that an individual can be hypnotized, with the help of a traditional progressive relaxation procedure for example, and then "remain hypnotized" (equally responsive to suggestion) long after leaving the state of physiological relaxation and classic apparent catatonia. So, the 'trance,' though it may in fact start with a process similar to that which commonly leads to sleep, or may start with the 'trance reflex,' it is not dependent upon stupor, nor even necessarily relaxation.

2.7. Evidence of enhanced functioning following suggestion?

Some of the 'unusual capacities' often claimed of hypnosis are actually legitimate, but found to be quite normal capacities seen in various non-hypnotic situations as well, though the hypnotic 'deep trance' context does apparently give a unique kind of *access* to those normal capacities. Seemingly

T.X. Barber, a highly respected researcher into human functioning under hypnosis has long promoted the view that people can bring out their own inner capabilities by direct requests to think, feel, and experience in a suggested way, without any need for hypnotic induction. He says that the secret of hypnosis involves the ability to fantasize in a hallucinatory way and provide the drama and excitement. Also important, according to Barber, is the way in which suggestions are given, language which gives firm but metaphorical suggestions.

Keith Harary, in his March/April 1992 *Psychology Today* article, "The trouble with HYPNOSIS. Whose power is it, anyway?" reviews a number of critical studies of hypnosis and concludes a similar view:

"Packaging them [the true claims made about hypnosis] under the label 'hypnosis' conceals what is really going on. It doesn't even begin to suggest that they are our very own powers and there might be ways to get at them directly and entirely on our own."

2.7.1. 'Mind and Body' in medicine

We see that there is little of any consistency that can be said about light trance objectively, and possibly only 'trance logic' (if that) as a common characteristic of deep trance. Yet the subjective experience of the individual is sometimes very profoundly altered.

And some phenomena can be reliably reproduced in good subjects which are medically considered very unusual and hard to explain (though not necessarily limited to hypnosis situations). The working medical framework that had traditionally cleanly separated psychogenic from physiological effects has been revised in parts to allow for some of the mechanisms related to effects found in good hypnotic subjects; such as influences between neural and immunological systems, dermatological (skin) responses that were previously believed not to be able to be influenced by the brain and nervous system, and the difficult but demonstrable 'biofeedback' ability to indirectly control very small neural units previously considered completely autonomic.

In terms of the prevailing medical paradigm, numerous functional interconnections within the brain and between the nervous system and other body systems have been found that may gradually help to explain such remarkable effects as we see in hypnosis and under various other seemingly special psychological conditions. Among other key discoveries, the study of neuropeptides and their distribution throughout the body as well as the brain provides some potential answers for some of the more perplexing questions arising from effects due to suggestion.

specialty journal *Gastroenterology*, "Hypnosis and the relaxation response" and "Modulation of gastric acid secretion by hypnosis."

An excellent review of the research into the exact physiological effects found to result from hypnotic suggestions in particular may be found in these two of T.X. Barber's articles ...

- "Physiological effects of 'hypnosis,' *Psychological Bulletin*, 58: 390-419, 1961.
- "Physiological effects of 'hypnotic suggestions': a critical review of recent research (1960-1964)," *Psychological Bulletin*, 63: 201-222, 1965.

In addition to these general references, the following sections may help to followup on any interest into various specific apparent unusual effects of suggestion.

2.7.2. Hypermnesia, perceptual distortions, hallucinations

Hypermnesia is perceived enhanced recall of memories. See also the later section on the reliability of hypnotic recall.

An excellent overview of experimental and clinical studies of hypermnesia, perceptual distortions, and hallucinations under hypnosis may be found in the hypnosis section of the *Annual Review of Psychology*, especially these issues spanning 20 years of research into hypnotic phenomena:

- Vol 16, 1965, E. Hilgard, p. 157-180
- Vol 26, 1975, E. Hilgard, p. 19-44
- Vol 36, 1985, J.R. Kihlstrom, p. 385-418

Another related area is the remarkable phenomena of eidetic imagery, or 'photographic memory.' In recent years, this formerly controversial phenomenon has been demonstrated by means of computer generated random pixel patterns which stereoscopically encode a visual image. There would be two images which, one seen by each eye at the same time, produce a three dimensional visual image. It is considered virtually impossible to detect the encoded image by looking at the separate encoded patterns at different times. People with eidetic imagery can memorize one pattern, and then mentally project it with one eye while looking at the other pattern with the other eye. The result is that they can see the three dimensional image, while apparently no amount of motivation will permit someone without eidetic imagery to see the final image.

It is now known that many five year old children can experience eidetic imagery, and that it is very rare in adults. A study published in the *Journal of*

in some sense, although that interpretation seems unlikely in the face of evidence in other areas. It is more likely to provide unique evidence of state-specific abilities accessible through hypnotic suggestion.

The following are the studies quoted above:

- Walker, Garrett, & Wallace, 1976, "Restoration of Eidetic Imagery via Hypnotic Age Regression: A Preliminary Report," *Journal of Abnormal Psychology*, 85, 335-337.
- Wallace, 1978, "Restoration of Eidetic Imagery via Hypnotic Age Regression: More Evidence," *Journal of Abnormal Psychology*, 87, 673-675.

In addition, Michael Nash in his chapter "Hypnosis as Psychological Regression," in Lynn and Rhue's 1991 *Theories of Hypnosis* discusses the evidence around different kinds of psychological regression and also refers to an unpublished manuscript by Crawford, Wallace, Katsuhiko, and Slater, from 1985, which is said to also discuss positive evidence for the facilitation of eidetic imagery phenomenon with hypnotic techniques: "Eidetic Images in Hypnosis, Rare but There."

2.7.3. Posthypnotic suggestion and amnesia

Amnesia (basically selective forgetting in this case) sometimes occurs spontaneously in hypnosis, and sometimes happens as the result of a direct or indirect suggestion to forget something. The amnesia effect may last a variable time, possibly months or longer, depending on the psychological significance of the amnesia and the forgotten material and on the intensity of attempts to recall and availability of recall cues in the environment.

A posthypnotic suggestion in general is a response to hypnotic suggestion that extends beyond the boundary of the actual trance period. Posthypnotic suggestions are often performed without any knowledge that they were previously suggested (thus the necessary link to hypnotic amnesia of this phenomena). The individual responding to a posthypnotic suggestion and with amnesia for the source of the suggestion will generally incorporate the response into their ongoing activities without disruption, in a similar manner to ritualized actions that we pay little attention to such as brushing our teeth in the morning or making the right sequence of turns in our well established route to work each morning. If the response involves some bizarre action, the individual will either be confused or typically will come up with a creative rationalization for the behavior. Very rarely will there be any awareness of the action resulting from a previous suggestion.

It is the contention of many experts in hypnotic work that individuals can and do resist posthypnotic suggestions that they do not wish to perform, except that implicit trust of the hypnotist may promote a behavior out of the ordinary. This is sometimes (especially per Orne) considered more a factor of

addition to the Hilgard article in Vol. 16 of *Annual Reviews* (1965), cited above:

- W. Wells, 1940, "The extent and duration of post-hypnotic amnesia," *Journal of Psychology*, 9:137-151.
- Edwards, 1963, "Duration of post-hypnotic effect," *British Journal of Psychiatry*, 109: 259-266.
- Dixon, 1981, "Preconscious Processing" (book)

Various studies have also been done to try to determine what kinds of psychological pressure will cause hypnotic amnesia to be breached, and under what conditions.

Schuyler & Coe, "A physiological investigation of volitional and nonvolitional experience during posthypnotic amnesia," *Journal of Personality & Social Psychology*, 40(6):1160-9, 1981 Jun was a good example.

Highly responsive hypnotic subjects, who were classified as having control over remembering (voluntaries) or not having control over remembering (involuntaries) during posthypnotic amnesia, were compared with each other on four physiological measures (heart rate, electrodermal response, respiration rate, muscle tension) during posthypnotic recall. Two contextual conditions were employed: One was meant to create pressure to breach posthypnotic amnesia (lie detector instructions); the other, a relax condition, served as a control. The recall data confirmed earlier findings of Howard and Coe and showed that voluntary subjects under the lie detector condition recalled more than the other three samples that did not differ from each other. However, using another measure of voluntariness showed that both voluntary and involuntary subjects breached under lie detector conditions. Electrodermal response supported the subjects' reports of control in this case. Physiological measures were otherwise insignificant. The results are discussed as they relate to (a) studies attempting to breach posthypnotic amnesia, (b) the voluntary/involuntary classification of subjects, and (c) theories of hypnosis.

2.7.4. Pain control (analgesia and anesthesia)

Hypnosis was at one time frequently and successfully used for surgical anesthesia. It is still sometimes used effectively for dental work, childbirth, and chronic pain of various types. Pain control is one of the most reliable and most studied of the hypnotic phenomena.

In addition to Hilgard's article in Vol 26 of *Annual Reviews* (1975) see:

- Hilgard, Hilgard, Macdonald, Morgan, and Johnson, 1978, "The reality of hypnotic analgesia: a comparison of highly hypnotizables with simulators." The authors find that motivated simulation of

was produced by a refinement of hypnotic technique, and was not reduced by naloxone. J. Barber, neuropsychiatry at UCLA, seems to have somewhat specialized in this area.

- Another 1977 study, Stern, Brown, Ulett, and Sletten, 'A comparison of hypnosis, acupuncture, morphine, Valium, aspirin, and placebo in the management of experimentally induced pain,' *Annals of the New York Academy of Sciences*, 296, 175-193, found that acupuncture, morphine, and hypnotic analgesia all produced significantly reduced pain ratings for cold pressor and ischemic pain.
- Van Gorp, Meyer, and Dunbar, 'The efficacy of direct versus indirect hypnotic induction techniques on reduction of experimental pain,' *International Journal of Clinical and Experimental Hypnosis*, 33, 319-328, 1985 (with cold pressor pain).
- Tripp and Marks, 1986, compared hypnosis and relaxation with regard to analgesia for cold pressor pain in 'Hypnosis, relaxation, and analgesia suggestions for the reduction of reported pain in high- and low-suggestible subjects,' *Australian Journal of Clinical and Experimental Hypnosis*, 33, 319-328.
- H.B. Crasilneck et al., 1955, "Use of hypnosis in the management of patients with burns," *Journal of the American Medical Association*, 158: 103-106.
- D. Turk, D.H. Meichenbaum, and M. Genest, (1983), *Pain and behavioral medicine: a cognitive-behavioral perspective*, New York: Guilford Press has a review of cognitive-behavioral strategies for pain control in general, not limited to hypnosis.
- In Larbig W. Elbert T. Lutzenberger W. Rockstroh B. Schnerr G. Birbaumer N. EEG and slow brain potentials during anticipation and control of painful stimulation. *Electroencephalography & Clinical Neurophysiology*. 53(3):298 -309, 1982 Mar., EEG correlates of pain control were studied.

Cerebral responses in anticipation of painful stimulation and while coping with it were investigated in a "fakir" and 12 male volunteers. Experiment 1 consisted of 3 periods of 40 trials each. During period 1, subjects heard one of two acoustic warning stimuli of 6 sec duration signalling that either an aversive noise or a neutral tone would be presented at S1 offset. During period 2, subjects were asked to use any technique for coping with pain that they had ever found to be successful. During period 3, the neutral S2 was presented simultaneously with a weak electric shock and the aversive noise was presented simultaneously with a strong, painful shock. EEG activity within the theta band increased in anticipation of aversive events. Theta peak was most prominent in the fakir's EEG. A negative slow potential shift during the S1-82 interval was generally more pronounced in anticipation of the aversive events than the neutral ones, even though no overt motor response was required. Negativity tended to increase across the three periods, opposite to the usually observed diminution. In Experiment 2, all subjects self-administered 21 strong shock-noise presentations. The fakir again showed more theta power and more pronounced EEG negativity after stimulus delivery compared with control subjects. Contrary to the controls, self-

Some of the most interesting hypnotic phenomena involve the apparent precision production of subtle skin responses by suggestion. Allergic reactions, pseudo-sunburns, blisters, and weals have been produced by suggestion. In addition, it has long been known that certain highly troublesome skin conditions have been influenced or healed in some people by suggestion (with or without hypnotic induction).

See the following for further information on studies of this:

- Ullman & Dudek, 1960, "On the psyche and warts: II. Hypnotic suggestion and warts," *Psychosomatic Medicine*, 22:68-76
- Rulison, 1942, "Warts, A statistical study of nine hundred and twenty one cases," *Archives of Dermatology and Syphilology*, 46:66-81.
- Asher, 1956, "Respectable Hypnosis," *British Medical Journal*, 1: 309-312.
- R.F.Q. Johnson and T.X. Barber, 1976, "Hypnotic suggestions for blister formation: Subjective and physiological effects," *American Journal of Clinical Hypnosis*, 18: 172-181.
- Mason, 1955, "Ichthyosis and hypnosis," *British Medical Journal*, 2: 57-58.
- M. Ullman, 1947, "Herpes Simplex and second degree burn induced under hypnosis," *American Journal of Psychiatry*, 103: 828-830.

2.7.6. Control of bleeding

Experiments with hypnosis during surgery have found that suggestion during and after surgery can reduce bleeding significantly, as well as help with the management of pain.

See Clawson and Swade, 1975, "The hypnotic control of blood flow and pain: The cure of warts and the potential for the use of hypnosis in the treatment of cancer," *American Journal of Clinical Hypnosis*, 17: 160-169.

2.7.7. Cognition and learning

This is a broad area covering a number of factors that are difficult to separate. In addition to the critical review by Barber in 1965 cited above in (1), see G.S. Blum, 1968. "Effects of hypnotically controlled strength of registration vs. rehearsal," *Psychonomic Science*, 10: 351-352, which discusses hypnosis as a possible way of reducing rehearsal needed to learn something new.

In some of his publications, researcher Charles Tart discusses the concept of state-specific abilities, including the possibility that some might apply to hypnotic phenomena. See his *States of Consciousness*, and other related works for more on this.

2.7.8. Enhanced strength or dexterity

modify or lessen the influence of inhibiting beliefs or attitudes. Similar effects are seen when athletes are motivated in other ways, outside of hypnosis.

See T.X. Barber's 1966 paper, "The effects of 'hypnosis' and motivational suggestion on strength and endurance: a critical review of research studies," *British Journal of Social and Clinical Psychology*, 5:42-50.

2.7.9. Immune Response

It has long been supposed (and in recent years demonstrated experimentally) that emotions and psychological state somehow have an effect on human immune response, but even though detailed mechanisms and the limits of this effect have not been well understood in modern medical science. A recent article in *Science News*, Sept. 4, 1993, pp. 153, describes 'the first solid evidence that hypnosis can modify the immune system far more than relaxation alone.'

The report concerns the research of Patricia Ruzyla-Smith of Washington State University in Pullman and her co-workers, who conclude that "hypnosis strengthens the disease-fighting capacity of two types of immune cells, particularly among people who enter a hypnotic trance easily."

This appears to correspond well with and bolster the previous findings related to enhanced 'placebo' (psychosomatic) effects in good hypnotic subjects, in the hypnotic induction situation. However, it does not appear to address the persistent question of whether highly hypnotizable subjects have a unique capacity for psychosomatic regulation, or whether they simply exhibit this capacity common to all of us in a uniquely accessible and convenient way by responding to hypnotic suggestion.

In this research, the psychologists recruited 33 college students who achieved a hypnotic trance easily and 32 students who had great difficulty doing so. Volunteers viewed a brief video describing the immune system and then were assigned to one of three groups: hypnosis, in which they listened to a hypnotic induction asking them to imagine their white blood cells attacking "germ cells" in their body and then performed this exercise through self-hypnosis twice daily for one week; relaxation, in which they floated effortlessly in a large tank of warm water containing Epsom salts and repeated the session one week later; or neither method.

Students who underwent hypnosis displayed larger jumps in two important classes of white blood cells than participants in the other groups. The greatest immune enhancement occurred among highly hypnotizable students in the hypnosis group.

2.8. Highly extraordinary experiences

out of the range of what most people think of as usual human experiences. For the present discussion, we might divide these extraordinary experience into three overlapping types:

1. Experiences which seem extraordinary because what is remembered (while under hypnosis) as having previously happened seems to defy commonly accepted canons of plausibility, such as the controversial UFO abduction phenomenon,
2. Experiences which, perceived as happening during hypnosis, seem to defy commonly accepted canons of plausibility, or would require a drastic theoretical revision to accept, such as psychic phenomena,
3. Experiences which seem extraordinary because they have an unusually powerful or lasting effect on the individual, such as certain deeply religious or mystical experiences,

2.8.1. Bizarre remembrances under hypnosis

The veracity of events recalled under hypnosis is considered by most experts today to be problematic to determine. Hypnosis facilitates the recall of details in good subjects, and also facilitates the manufacture of details during recall that were not necessarily present previously. This in fact is characteristic of recall in general, which has been demonstrated to be far from a permanent and unchanging record, but more a dynamic and adaptive process; a shape-shifting moire pattern of sorts, conforming to inner needs and ongoing mental activity, more than a videotape recording of the precise details of perceptual events.

There is also some evidence that hypnosis may additionally aid in providing 'state-specific' context to aid in the recall of information and experience of which the individual is otherwise normally unaware.

Which of these complex and incompletely understood processes is dominant in the recall of someone's extraordinary memories of seemingly implausible events is extremely difficult if not impossible to determine from the hypnotic session alone.

Neither claims of unimpeachable veracity under hypnosis (the 'hypnosis as truth serum' idea) nor those of hypnosis being completely unreliable in facilitating recall ('false memory') stand up to close scrutiny as a general principle applicable to all cases of controversial hypnotic recall. The best evidence available seems to indicate that hypnotic methods can sometimes be valuable in a number of ways, both to the individual's psychological health and in helping to gather factual information, but that they should not be relied upon by themselves or given special preference over other kinds of testimony for such things as legal evidence, nor considered to be accessing anything like a perfectly faithful permanent record of past perceptual events.

This section closes with an illustrative philosophical excerpt from a recent

"While pointing out the overlap between emotion and memory, I want to emphasize that memory is not simply a fixed look-up table. It too is a creative process during which the state of the brain's electrical fields change. The sensory cortices generate a distinct pattern for each act of recognition and recall, with no two ever exactly the same. They are close enough to cause the illusion that we understand and have seen the event before, although this is never quite true. Each time we recall something it comes tainted with the circumstances of the recall. When it is recalled again, it carries with it a new kind of baggage, and so on. So each act of recognition and recall is a fresh creative process and not merely a retrieval of some fixed item from storage."

"Furthermore, persons, objects, and events are not perceived in their entirety but only by those aspects which are, have been, or can be experienced and acted upon by an observer..."

"... All that we can know about anything outside ourselves is what the brain creates from raw sensory fragments, which were actively sought by the limbic brain in the first place as salient chunks of information..."

"... Put in a more familiar context, artists and creative writers look at the world in a certain way. It is the same world that everyone else sees, but seen differently. Contemporary people often call artists weird because they do not seem to be seeing the same things that the majority sees. It is critical to realize that the sensory gateways that feed into the brain establish their own conditions for the creation of images and knowledge. Artistic giants knew full well that their visions were not shared by most people. Even when persecuted or abandoned because of their vision artists persist. That is all they can do because their visions are their reality, and for many of us they subsequently become our reality when we experience their art."

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2.8.2. Psychic phenomena under hypnosis

There are a number of links between the sorts of situations commonly associated with hypnosis, and the experience of what are often called 'psychic phenomena,' (herein primarily meaning apparent extrasensory perceptions, and psychokinesis, but also such related experiences as apparitions, mediumistic phenomena, and such strange occurrences as the apparent suspension of death).

psychology, and modern parapsychology, and the study of 'psychic phenomena' in general. The reason for quoting that term here is to emphasize that the term originally meant such subtleties of mental life as what we today often think of as the 'subconscious' or 'unconscious' mind, rather than specifically and exclusively such things as ESP, hauntings, or poltergeists. At the time, it seems there had been less of a feeling that there was a distinct difference in plausibility between 'unconscious processes' and those today generally considered paranormal. Because of this, the term may tend to be ambiguous when used in a discussion where a wide variety of experiences are being included.

Early (circa late 19th century, early 20th century) psychology was largely a philosophical endeavor, which included a wide range of areas of investigations that were grouped in ways that might seem a little strange today. For example, the American Society of Psychical Research (ASPR), today probably thought of mostly as having been a pioneering organization in the study of the paranormal, devoted a great deal of its early efforts (and an explicit section of its charter) to studying what we today usually consider mundane aspects of hypnosis.

Hypnosis has thus long had a popular traditional association with such controversial psychic phenomena as ESP, PK, poltergeist activity, and clairvoyance, as well as various forms of occultism and some kinds of religious healing rituals.

Of particular pertinence here, there is also a tenuous but persistent experimental link between hypnotic processes and laboratory psi. The link is particularly prominent in anecdotal evidence, but this is often of questionable reliability, for reasons that will be described here. It is in the more controlled laboratory psi data that the more truly demonstrable anomalous results appear that give us cause for further investigation.

First, the difficulty with this sort of experiment, and the kinds of protocols and controls required should be recognized. While the open-minded researcher of anomalies might not wish to reject the useful subjective verbal reports of hypnotic subjects, they also have to contend with the remarkable subtlety of non-paranormal (conventional sensory) human perception and communication.

Milton Erickson, for example, described an experiment with hearing impaired 'lip readers.' He discovered that they actually read a much richer panorama of cues than simply the moving lips. The lip reading subjects would sit with their backs to a blackboard on which there were various geometric designs. The designs were then covered with sheets of paper. In front of the lip readers sat a group of non-hearing-impaired participants, who were instructed to look at the blackboard and say and do nothing. Someone else removed the paper covering the geometric symbols, one at a time. The lip readers were instructed to write down anything that they read from the participants in front of them who were observing the geometric figures

people's thoughts about them, was reported as having perfect accuracy.

Erickson applied this insight to his hypnotic technique, by recognizing the significance of messages he himself didn't realize he was giving. A similar analysis has frequently been applied to anecdotal reports of cases of apparent telepathy, but where 'cold reading', or the skill of gathering information surreptitiously through subtle but conventional sensory clues, appears to be a likely factor.

Someone might actually suggest that the paranoid psychotic patient in this particular experiment, and some or all of the other hearing-impaired patients, were actually employing some telepathic faculty to some degree. But most interpretations would probably focus on the use of subtle clues that the participants observing the blackboard were unaware of providing. The nature of hypnotic communication ('rapport') is such that the participants are particularly well attuned to the nuances of each other's movement, speech and expression. This, combined with the lip readers' existing capacity for attending to subtle body language, contributes to the appearance of an even more extraordinary, even paranormal, information transfer, and makes it more difficult to sort out the precise mechanisms of information transfer involved.

Modern psychological reviews might also focus on the hypothesis that the paranoid psychotic subject was likely dissociating their perception of what they were reading from their awareness of its source (rather than the obvious appearance of receiving it from an extrasensory source). This resembles the dissociation theory of how trance mediumistic (trance channelling) behaviors and some religious experiences (such as hearing the voice of God) may occur, at least in some cases. The concept of cognitive dissociation is a central one to many modern psychological descriptions of hypnotic and peripheral phenomena, as we will see in more detail later. In particular, we will see that dissociation provides an extremely useful description, but not necessarily an adequate explanation of all of the data.

Today, most psychologists, and virtually all of those investigators known as parapsychologists, are aware of the complexity of human perception under even conventional circumstances. They would generally tend *not* to consider a psi hypothesis to be demonstrated in this sort of situation, given the apparently demonstrated correlation of exceptional body language reading skills and high hit rates. This is of course entirely different from demonstrating that a psi faculty is *not operating*. Just that the experimental situation in this particular case does not provide evidence of psi.

But there are other experimental results, with protocols more specifically designed to rule out subtle conventional sensory communication. These give us reason to at least consider and test a psi hypothesis, with an eye toward ruling out subtle body reading effects, in hypnotic situations. It appears from some results that under certain kinds of conditions hypnosis may at least be slightly conducive to anomalous information transfer, even when subtle cues are eliminated.

hypnosis as an altered state in which paranormal capacities are provided or enhanced may not be the best or only explanation, even if the psi hypothesis itself were to receive growing experimental support. There is also the crucially important matter of just exactly what it is *about* the process of hypnotic induction and its effects on the subject that changes hit rates in certain laboratory psi tests.

In another section, we briefly review T.X. Barber's work demonstrating that most if not all of the unusual phenomena reported during hypnosis are also seen under other conditions. He and his colleague Sheryl Wilson in their work on the theory of the 'Fantasy Prone Personality' also provide us with another link between psi and hypnosis, the observation that there are distinct similarities in personality variables between people who are excellent hypnotic subjects, and those who report large numbers of psychic experiences.

It should be emphasized here that this theory does not support the once popular notion that good hypnotic subjects are simply gullible or neurotic, or otherwise mentally ill; as no correlation with any of these personality variables has ever been determined. Rather, the FPP theory paints a picture of natural visionary individuals with a rich inner life and often extraordinary psychosomatic responses, but who are perfectly well able to distinguish their vivid fantasy life from reality, just as most of us can distinguish a dream from a memory of actual events, most of the time.

In other words, among the factors that the FPP does NOT correlate with well at all is any diminished capacity for reality testing. This should be born in mind particularly because of the popular connotations of the term 'fantasy-prone,' and the questionable veracity of recollections occurring under hypnotic procedures. A report from an FPP subject is not inherently either more or less reliable than one from other subjects, in or out of hypnosis. Their rich mental life does not necessarily intrude on their external perceptions, except under various very unusual kinds of conditions, such as spontaneous hallucination triggered by hypnotic suggestion.

Additionally, there is the complex psychological question of whether the individual interprets their experience as 'real' or 'imagined.' When an LSD user comes down from their trip, they don't generally continue to believe that their face was melting or that the sky actually changed to fluorescent green during their experience, they distinguish it as an 'altered state.' However, during the trip, the altered perception may be quite convincing.

In hypnotic extraordinary experiences, we find both cases where the individual believes that their perceptions were due to an altered state, even though it seemed real at the time, and those where they believe something quite bizarre actually happened, not the result of an unusual perceptual state. And the two types of cases are not at all easy to distinguish by any means other than relying on the report of the subject.

The particular conditions under which spontaneous hallucination can occur, and under which they can be confused with external perceptual experiences are not well known, nor is there any known method of distinguishing a spontaneous hallucination from an external sensory perception. Even theories of how drug action (e.g. LSD) causes hallucinations are highly speculative, and spontaneous hallucinations are much more slippery.

Two current theories of spontaneous hallucination concern changes in the chemical environment of endogenous neurotransmitters or neuromodulators which influence perception (endorphins and serotonin being the most commonly cited); and possibly some unique mode of function of temporal or temporolimbic brain pathways, perhaps influenced by electromagnetic fields.

How these unusual brain conditions relate to psychic phenomena and to other observations related to hypnosis in general is not yet well established.

Article by Todd I. Stark

From the FAQ regarding the scientific study of hypnosis by [Todd I. Stark](#)

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What is Hypnosis? [credits]

by Todd I. Stark

Hypnosis refers to just about any situation where we respond to verbal suggestions in a particular special way. This involves a mentally very flexible condition where our imagination and fantasy are more free and more vivid. A series of instructions, called an **induction**, is the most common way to do this. Just about any situation where we relax and allow ourselves to become absorbed in something can lead to the appropriate conditions for hypnosis. These conditions also sometimes occur without relaxation, such as immediately following confusion or distraction. Most hypnotic inductions involve a highly cooperative process, rather than hypnosis being something that is "done to" someone.

Science and the Arts of Hypnosis

Hypnosis today is often considered from two different perspectives : the *sciences* used to study how it works, and the *arts* used to make use of it for specific purposes. These are such very different perspectives for two main reasons. First, there is the schism between the academic and the clinical subcultures that is found in many fields of psychology. Second, there is the particularly wide gap between hypnosis practice and academic psychology because of the periods when hypnosis was considered completely disreputable. This helped to polarize even further those who helped the arts using hypnosis to survive and those who would study hypnosis scientifically.

In science, there is the basic idea of being able to create psychological conditions where people respond to verbal suggestions in a seemingly unusual way. This is what researchers study, and what forms the foundation for the practice of hypnosis as an adjunctive treatment in medicine. In order to study hypnosis in this manner, we define it as precisely as possible, and in most cases we utilize simple tests and suggestions. It is primarily from this perspective that the current document has been written.

The second perspective is the historical creation of the arts of hypnotic influence. This means making use of response to verbal suggestion in order to influence attitudes and behaviors more dramatically or over a longer period of time. This might be a healing art, a performing art, or a form of self-help. When we use hypnosis as a healing art, it is a form of psychotherapy and adheres to the same basic principles and ethical considerations as other forms of therapy. As a performing art, hypnosis has very little in common with psychotherapy aside from the occasional elimination of superficial symptoms by suggestion.

For more information on the arts of hypnotic influence, especially hypnotherapy as practiced by non-psychologists, I recommend starting with Roy Hunter's excellent FAQ on the **alt.hypnosis** newsgroup, maintained at Roy's home page at <http://www.hunter.holowww.com>. In order to learn more about psychotherapy in general, I highly recommend either of two starting places : Dr. John Grohol's award winning Mental Health page, or Mental Health Net.

1.1 Defining Hypnosis

Since there is no single well accepted theory of hypnosis, the trick is to make the definition as theory neutral as possible, descriptive and not implicitly explanatory. Yet even the description is sometimes controversial. One thing that has become known for certain is that hypnosis is only interesting from a phenomenal perspective.

The **subjective experience** of hypnotized people is what is special about hypnosis, not any identifiable objective measurements. If there are any objective behavioral correlates of hypnotic experience, they are either so subtle as to escape detection, or so idiosyncratic that we can't draw general conclusions from them.

Prominent researcher E.R. Hilgard provided the following in his 1965 review of the scientific data on hypnosis up to that point (Hilgard, 1965) :

"Without attempting a formal definition of hypnosis, the field appears to be well enough specified by the increased suggestibility of subjects following induction procedures stressing relaxation, free play of imagination, and the withdrawal of reality supports through closed eyes, narrowing of attention, and concentration on the hypnotist. That some of the same phenomena will occur outside of hypnosis is expected, and this fact does not invalidate hypnosis as a research topic."

Specifying exactly what "increased suggestibility" means has been extremely difficult. What this means in practical terms is that the hypnotized person experiences certain classical **hypnotic phenomena**, particularly in response to verbal suggestion. Years ago, one of the hypnosis researchers (Weitzenhoffer) dubbed this the "classic suggestion effect." The thing that sets these hypnotic phenomena apart from simple compliance with a suggestion is that they are experienced as being somehow effortless or involuntary. This is what sets **hypnotic suggestibility** (sometimes called **primary suggestibility**) apart from other kinds of compliance. **The sensation of responding in an involuntary way is the most notable difference between hypnosis and other conditions.** (Zamansky and Ruehle, 1995).

Both the concept of hypnosis and the practice of hypnosis have been

to demonstrate hypnotic phenomena. Modern research has largely confirmed that hypnosis is not a unique physiological state, and that imagination is indeed a central element. At the same time, though, we have come to *an increasing regard for the depth and subtlety of human imagination under all conditions !*

One of the most promising advances in the theoretical perspective on hypnosis has been the communications analysis approach. This was pioneered by the followers of Milton Erickson and other innovative hypnosis experts who saw hypnosis as a *dynamic cooperative process* involving intimate human communication as well as imagination, rather than (or in addition to) a problematic *state of consciousness*.

1.2 What else is "like hypnosis ?"

There are basically three varieties of things that are commonly called hypnosis or compared to hypnosis :

1. Formal hypnosis, which includes relaxation and the use of suggestion,
2. Self hypnosis ("suggestions" are provided mentally and silently, or provided on a previously made tape)
3. Alert hypnosis (there is no relaxation component)

Common examples of how these processes are used include :

- **Hypnotherapy** : Psychotherapy which emphasizes the use of hypnosis.
- **Medical hypnosis** : Used as an adjunct to medical treatment to reduce pain or other symptoms.
- **Stage hypnosis** : Emphasizing confusion, distraction, and social pressure to gain quick, dramatic compliance for entertainment purposes.
- **Self-Help** : Using taped inductions, prepared scripts, or self-talk to attempt personal changes with the help of suggestion.

Things that have little or nothing directly to do with hypnosis include :

- sleep
- barbiturate-induced stupor
- gullibility or moral weakness
- mental illness
- "brainwashing"

The important elements in things we call hypnosis are, roughly in order of decreasing importance :

- slightly enhanced **primary suggestibility** for verbal language (words

- cooperative interpersonal communication, response to social cues (there is a guide, and we trust them)
- relaxation and enjoyable stillness

One of the ways to help make a complex definition more clear is to provide examples of things that don't fit. Some of the things that are not hypnosis but appear to share some similarities include :

- **Meditation** : Meditation often shares some characteristics with our psychological state under hypnosis. Descriptions of our spontaneous experience under some kinds of meditation are similar to those under some conditions of hypnosis. Some people infer from this that the "trance" seen in hypnosis and that seen under meditation is the same. The observation is an interesting one, but there is currently no good way to confirm or disprove this notion, without actually turning meditation into hypnosis by testing for response to suggestions. Meditation does not necessarily involve specific responsiveness to verbal suggestion, or an enhanced sensitivity to social cues. It may or may not involve fantasy. These are important elements in hypnosis, particularly from a process perspective. Sensitivity to social cues is a cornerstone of the communications analysis view of hypnosis, and is absent during meditation. **A meaningful definition of hypnosis that emphasizes how we use it will not include meditation as an example, and vice versa.**
- **Guided imagery** : While it appears very similar, and often overlaps, hypnosis is not "just" guided imagery. There are additional important elements to hypnosis that are not generally found in guided imagery. We can certainly engage in guided imagery during hypnosis. But not all hypnosis involves guided imagery, and guided imagery does not necessarily result in hypnosis. More importantly, **the skill for imagery is not the same as the skill for entering and using hypnosis.** Vivid imagery is an important element in hypnosis, but it is not sufficient. There are other elements needed for hypnosis, including but not limited to hypnosis-relevant attitudes (Glisky, Tataryn, and Kihlstrom, 1995). There is evidence that guided imagery under hypnosis has subtly different effects on the body than guided imagery under relaxation alone. Also, there is so far no strong correlation between abilities at imagery and abilities at hypnosis. Vividness and motor imagery are only weakly correlated with hypnotizability, although the ability to become absorbed in imagery is slightly better correlated with hypnotizability. Ultradian cycles for imagery and hypnotic susceptibility vary at different rates (Wallace & Kokoszka, 1995). Overall, imagery is an important component in hypnosis, but guided imagery is not in any sense synonymous with hypnosis, the underlying ability to do hypnosis and the underlying ability to do imagery are two different things. To illustrate in practical terms that imagery is not the primary factor, it has been observed that verbal hypnotic suggestion takes effect even when we concentrate on imagery that is contrary to the suggestion ! (Zamansky and Ruehle, 1995)

upon responsiveness to verbal suggestion or responding to subtle social cues, so it really is a different process in some important ways. The key experience of involuntariness or effortlessness in hypnotic responding is shared by hypnosis and self-hypnosis, so they clearly share a similar kind of psychological state in general. However, one involves dynamic responses to ideas, and the other dynamic responses to words. There is no external guide during self-hypnosis. There are differences in the ease with which we can be hypnotized by another person and with which we can hypnotize ourselves. There is some evidence that automated response to words is an important element in hypnosis. For a number of reasons, it is necessary to make a distinction in spite of the similarity of hypnosis and self-hypnosis.

- **Self-regulation, or "alert hypnosis"** : This includes autogenics, biofeedback, and other methods used to influence autonomic body processes or increase primary suggestibility that do not involve a formal hypnotic induction. These are often distinct from hypnosis because they do not involve responding to social cues, but rather to cues provided by instrumentation. In addition, there is often no essential verbal component, and no necessity for relaxation. Some would call these methods kinds of "alert hypnosis," and in cases where the remaining elements are present, this is probably as reasonable as the distinction of self-hypnosis for cases where only the interpersonal element is missing.
- **Subliminal self-help tapes** : Let's assume for the sake of discussion that there exists a "subliminal" technology that actually works. This means that a message is encoded which we can reliably perceive but not be aware that we are receiving it. The message would become what is known as "implicit," meaning that it can affect our behavior though we do not recognize it as a memory of anything in particular. Hypnosis can also create or make use of implicit memory, however that doesn't mean that anything that affects implicit memory is hypnosis. As far as is known, subliminal suggestion would have none of the important elements that distinguish hypnosis ! Why do we even for a moment think that this would work in some way similarly to hypnotic suggestion ? I discuss this in detail in another section.
- **Neurolinguistic Programming (NLP)** : Neurolinguistic Programming (NLP) is partially derived from careful observation of the patterns in what happens during hypnosis. It is therefore, at least in part, an extension of the communications analysis view of hypnosis. NLP borrows its basic concepts largely from cognitive psychology, which views behavior as guided by schemata or strategies. NLP practitioners use a variety of methods to attempt to determine what strategies people use for various activities, and then to modify those strategies or utilize them for other purposes. Some of the techniques used in NLP also resemble "alert hypnosis," because they use language patterns also used in hypnotic induction to elicit cooperation, build trust, and increase the effectiveness of suggestions. In practical terms, very little of NLP involves hypnosis.
- **The Placebo Effect** : The placebo effect is the most common name for

very important role in our behavior under hypnosis, just as they play an important role at other times, and suggestion is a factor in placebo response. The role of expectations in hypnosis is particularly interesting because of the dramatic effect on our imagination. One of the most fascinating examples is in the elaborate role enactment known as "age regression," where the content is often directly related to expectations set prior to hypnosis. **Hypnotic suggestion cannot entirely be described as placebo effect, however, as there are a number of distinct differences.** Some of these differences can be demonstrated experimentally. This is why we can meaningfully compare hypnosis experimental groups with placebo control groups. Response to hypnotic suggestion is much more closely related to the semantic content of the suggestion than the more general effects of placebo, that is, it is far more specific. The correlation between placebo responders and hypnotizability is good but nearly strong enough to conclude that they are the same attribute. **The placebo effect has some overlap with hypnosis, but is not the same thing as hypnotic suggestion.** (Evans, 1977; Evans 1981; McGlashan, Evans & Orne, 1969; Orne, 1974)

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Hypnosis, volition, and mind control. [credits]

by Todd I. Stark

5.1. Is the hypnotist in control of me?

The exact nature of what we experience as 'will' or *volition* is an age-old philosophical problem that has yet to be resolved by brain scientists or psychologists.

Some aspects of hypnotic responding point out weaknesses in our understanding of the nature of volition, such as: its exact relationship to conscious *awareness*; the capacity and limitations of external stimuli (such as 'suggestion') to influence our sensory experience and behavior; and the details of the patterns by which specific phenomenological and physiological events influence each other.

The vast majority of hypnosis researchers seem to believe that the individual has a capacity for volition which may be influenced but not ablated by hypnotic suggestion. That the individual under hypnosis is still acting on their own will in some sense, although possibly with distorted or limited information presented by the hypnotist. In addition, there may be influences on their behavior which the subject is not *consciously* aware of responding to, or does not report an *awareness* of responding to. This has been challenged by some theorists by questioning the nature of self-awareness itself in various ways.

The question of volition becomes important when we consider the long-studied question of whether a hypnotist can influence an individual to perform behaviors which they would not 'ordinarily' want to perform, such as to commit crimes or to injure themselves or others.

This issue arose in part from the commonly held premise that an individual's character traits are more important than immediate stimuli in guiding their behavior. Some of the behaviorist theorists of hypnosis have historically downplayed the stable traits of individuals and attributed their behavior to a greater extent to responses to external stimuli. To them, there is less question of 'ordinary' behavior, and more a matter of conditioned responses. Andrew Salter's *What is Hypnosis* published in the middle of this (20th) century is a good representation of that viewpoint.

The likelihood is that the truth lies between stable character theory and conditioned response theory. There are seemingly what some call

hypnotic imagery to do things that would ordinarily be considered very unusual, and to do them at unusual times and places. But there are clearly 'ecological' limits to this as well.

For example, most studies have suggested that the individual can and does *reject* suggestions of some types, in some way, both during hypnosis, and in the form of post-hypnotic suggestions, and is not being coerced directly under hypnosis to act against their 'will' in any meaningful sense, though they may act under false premises.

A classic early study supporting this view was done by Milton Erickson, published in *Psychiatry* in 1939 (2,391-414), "An experimental investigation of the possible anti-social use of hypnosis." M.T. Orne's similar view is represented by his chapter on hypnosis in the 1961 *The Manipulation of Human Behavior*, by Biderman and Zimmer (p. 169-215). Orne argues that the coercion or 'Svengali Effect' sometimes attributed to hypnosis is an artifact of the hypnotic experimental situation.

However, it has also been shown that an individual can be tricked by the hypnotist, and possibly led by their trust in the hypnotist, to perform unusual behaviors in unusual situations, even potentially dangerous or embarrassing ones. This potential is well known to fans of 'stage hypnosis,' particularly with that subset of individual's particularly susceptible to the dramatic tactics of the stage hypnotist. These tactics are for the most part different from the classical induction used in medicine and psychotherapy, relying on surprise, sudden confusion, social pressure, and other factors not unknown to medical hypnotherapists, but not normally emphasized by them either.

A classic study which illustrated how far individuals would go in hypnotic responses to contrived hypnotic situations was Loyd W. Rowland, "Will Hypnotized Persons Try To Harm Themselves or Others?", *Journal of Abnormal and Social Psychology* 34(1939):114-117. This study is described in William Corliss' *The Unfathomed Mind: A Handbook of Unusual Mental Phenomena*, pp. 120-123. This study showed subjects sticking their hands into boxes with what they presumably believed were live rattlesnakes, and throwing concentrated acid into what they presumably believed was the unprotected face of another person.

Other studies showing response to suggestions of anti-social behavior in an experimental setting included:

- W.R. Wells, "Experiments in the hypnotic production of crime," *Journal of Psychology*, 1941, 11:63-102,
- M. Brenman, "Experiments in the hypnotic production of anti-social and self-injurious behavior," *Psychiatry*, 1942, 5:49-61.

Various authors have reported attempts by the U.S. CIA to research or use hypnotic techniques for mind control. All seem to report failure rates

minds of people. And this type of situation is perhaps as well described in terms of social/group psychology as individual response to hypnotic suggestion.

Another class of mind control technology reportedly attempted was the deliberate cultivation of secondary or multiple personalities. The true nature of multiple personality disorder is still under intensive research, with a few leads from PET scans suggesting that in some people, a true neurological distinction between personality states may occur, in spite of the apparent inability of EEG to pick up such a distinction. If true, this would tend to imply that at least for *some* individuals, Hilgard's neo-dissociation theory is closest to the truth, and that a cognitive dissociation of some sort does literally occur. As with the mind control attempts based on stage hypnosis, this never seems to have been considered practical as a means of controlling the minds of individuals in general.

The experimental studies showing people performing aberrant, criminal, or self-destructive acts have long been criticized, notably by M.T. Orne, as reflecting the implicit trust of the hypnotic subject that the experimenter would not put them into truly dangerous situations during the experiment, and that the experimental conditions were too contrived to represent what the individual would do in real life. The dialog here is obviously very reminiscent of the critiques of Stanley Milgram's "obedience to authority" experiments, where subjects believed they were giving progressively more painful and dangerous electric shocks to other subjects as part of a behavioral learning experiment.

Which brings us to reports of someone actually committing a crime, or becoming the victim of one, under the influence of hypnosis, *outside* of the experimental laboratory. Leo Katz, *Bad Acts and Guilty Minds*, 1987, University of Chicago Press, pp. 128-133, describes cases of crimes committed by patients of unethical hypnotists. The *Fortean Times*, #58, July 1991, reports in an article "The Eyes Have It," by Michael Gross, the prosecution of a man who sexually assaulted at least 113 women, preceded by hypnosis, and the revocation of the medical license of a psychiatrist in 1982 for abusing women under hypnosis.

Similar allegations and sometimes prosecutions of cases of misconduct or rape with the aid of hypnosis by therapists have been reported in the media in recent years as well.

The actual role of hypnosis in each of these cases is unknown. It is likely that it provided the abusing therapists assistance in the seduction of the women in question, but that again, it was a matter of using the hypnotic induction to abuse their already elevated trust in the therapist at least as much as any loss of their 'will to resist' at the time of the abuse.

For contrast, compare the case of a victim being drugged into

they wouldn't 'ordinarily' do in that particular situation with that particular person at that time. Thus the justifiable sense of remorse and violation when they realize what they've been led to do. Not dissimilar from the also controversial situation with abuse or alleged abuse by parents, where the child's implicit trust in the parent's interest in their welfare often complicates the evaluation and treatment of the situation after the fact.

5.2. Voluntary vs. Involuntary

Who or what is in control when a hypnotist gives a suggestion, and their subject apparently responds, but reports that they had no *awareness* of responding? Is it the same mechanism in some ways as that in control during biofeedback experiments when the subject has no direct awareness of altering markers of their physiological functions? Or is it closer to the mechanism that permits the well known 'automatisms' or behaviors performed by habit outside our awareness? Or are these all aspects of the the same mechanism in some way?

These behaviors have all long been called 'involuntary' responses, and this is what provides the impression that the hypnotist is directly controlling the subject. Weitzenhoffer in 1974 called this the "Classical Suggestion Effect," the "transformation of the essential, manifest, ideational content of a communication" into behavior that appears involuntary.

What exactly does it mean for a behavior to appear to be involuntary? In their 1991 *Theories of Hypnosis*, Lynn and Rhue identify three distinct views of involuntariness in hypnosis:

1. The experience of diminished or absent control over a behavior
2. The inability to resist a suggestion
3. An automatic response, experienced as effortless and uncaused by the subject, but with a capacity in reserve to resist if desired.

#1 above, apparently a blocking of awareness of feedback about a behavior, is a common experience in hypnosis. Some theorists contend that this kind of experience is actually the defining characteristic of hypnosis.

#2 above has very few supporters today. Most modern hypnosis experts agree that their subject can and does resist undesirable suggestions. Even the neo-dissociation viewpoint, which holds that cognitive function can split into differing factions, never admits to a complete relinquishing of control of the 'will,' more a removal from a usual high level executive planning function.

#3 above is the most controversial of the three views. The subjective perception of non-volition in hypnosis is widely agreed upon, and the idea of at least a latent capacity to resist suggestions in some way is also pretty much agreed upon by experts. But the notion of effortless response with

theory held that the response was a direct result of the suggestion, presumably some automated language-behavior response mechanism ('the unconscious') that they believed a hypnotist could tap in to.

The final details of what aspects of the social psychological view, what aspects of the neo-dissociative cognitive view, and what aspects of various others are actually the best description for various hypnotic phenomena are largely up to future research to determine.

5.3. Conscious vs. Unconscious

Is there actually an 'unconscious mind' in some sense? And if so, does it explain certain kinds of response to hypnotic suggestion?

First, it is very likely that information is actually processed, at least under certain conditions, outside of conscious awareness, and that it can influence behavior. A modern look at this old topic can be found in Kihlstrom's 1987 *Science* article, "The Cognitive Unconscious," 237, 1445-1452. This is not to say that any particular 'subliminal learning' claims have support from this notion, only that it is possible for perception of a sort to occur without apparent conscious awareness.

One study demonstrating a subliminal influence on subsequent behavior was Borgeat & Goulet, 1983, "Psychophysiological changes following auditory subliminal suggestions for activation and deactivation," appearing in *Perceptual & Motor Skills*. 56(3):759-66, 1983 Jun.

This study was to measure eventual psychophysiological changes resulting from auditory subliminal activation or deactivation suggestions. 18 subjects were alternately exposed to a control situation and to 25-dB activating and deactivating suggestions masked by a 40-dB white noise. Physiological measures (EMG, heart rate, skin-conductance levels and responses, and skin temperature) were recorded while subjects listened passively to the suggestions, during a stressing task that followed and after that task. Multivariate analysis of variance showed a significant effect of the activation subliminal suggestions during and following the stressing task. This result is discussed as indicating effects of consciously unrecognized perceptions on psychophysiological responses.

A hypnotic subject clearly also takes an active and voluntary role in some sense as well when carrying out suggestions, as pointed out by Spanos and the social-psychological theorists.

Perhaps the data showing this contrast most strikingly is from the study of 'hypnotic blindness.' One example is Bryant and McConkey's 1989 "Hypnotic Blindness: A Behavioral and Experimental Analysis," *Journal of Abnormal Psychology*, 98, 71-77, and also p. 443-447, "Hypnotic

It appears that some form of neurological events involving more or less intelligent response to information can occur, in or out of hypnosis, without our direct awareness of them. One theory proposes that the brain has a simultaneous parallel capacity for cognitive learning and for stimulus-response learning, independently of each other and by different neural mechanisms. This has been proposed by some as a partial explanation for automatism and some hypnotic responses. One version of this view may be found in the article by Mishkin, Malamut, and Bachevalier, "Memories and Habits: Two Neural Systems," in *The Neurobiology of Learning and Behavior*, edited by McGaugh, Lynch, and Weinberger, by Guilford Press.

It is important to recognize that the detailed physiological mechanisms underlying the processing of information in general are largely speculative, and that the gaps in our understanding of hypnotic phenomena (or 'states of consciousness' in general) complicate the situation. It has been contended that even some of the simpler forms of learning and information processing consist of a number of different processes, each with its own special properties.

One important distinction is between explicit and implicit learning. Explicit learning is what we commonly think of as doing as part of the conscious reasoning process when we try to learn something deliberately. It generally involves reasoning and hypothesis testing. Implicit learning is acquiring new information which either cannot be verbalized, or which occurs apparently without conscious reasoning and hypothesis testing. Kihlstrom, one investigator of hypnotic and unconscious psychological processes, has shown that a particular variant of implicit learning, involving certain non-novel information (such as word pairings), can occur under medical anesthesia. The degree to which this can be considered a form of learning in the more general non-technical sense is difficult to say, and the precise neurobiological mechanism of anesthesia is likewise somewhat elusive. But it has also been observed that implicitly learned material has certain unique characteristics, as compared to explicitly learned material, such as that implicit material is more often preserved intact in cases of amnesia.

Some examples of research into learning and perception which occurs outside of sensory (visual) attention:

- Mandler, Nakamura & Van Zandt (1987). Nonspecific effects of exposure on stimuli that cannot be recognized. *J Exp Psych: Learning, Memory and Cognition*, 13, 646-648.
- Miller (1987). Priming is not necessary for selective-attention failures: Semantic effects of unattended, unprimed letters. *Perception and Psychophysics*, 41, 419-431.
- Carlson & Dulany (1985). Conscious attention and abstraction in concept learning. *J Exp Psych: Learning, Memory, and Cognition*, 11, 45-58.

bases in artificial grammar learning. JEPLMC, 17, 875-887.

- Hayes & Broadbent (1988). Two modes of learning for interactive tasks. *Cognition*, 28, 249-276.

On the concept of attention in general:

- Allport (1989) Visual Attention. In M.I. Posner (Ed.) *Foundations of Cognitive Science*. (pp. 631-682).
- Kahneman & Treisman (1984). Changing views of attention and automaticity. In Parasuraman & Davies (Eds.) *Varieties of Attention*.
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 9. The Role of Imagination and Fantasy in Hypnosis and Altered States (11 entries)
 10. The Reliability of Hypnotic Recall (8 entries)

* = particularly highly recommended.

1. A brief list of technical journals which frequently publish hypnosis research or have published articles of great historical importance:
 1. Journal of Abnormal Psychology
 2. International Journal of Experimental and Clinical Hypnosis
 3. Journal of Personality and Social Psychology
 4. Psychological Review
 5. Psychological Bulletin
 6. Behavioral and Brain Sciences
 7. American Journal of Clinical Hypnosis

13. Archives of General Psychiatry
14. Psychiatry
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Evil Hypnosis[credits]

by Todd I. Stark

"Evil" hypnosis is what I call the popular view of hypnosis as something that is used by devious agencies or individuals to control people's minds surreptitiously. Mind control or behavior control are possible with hypnosis only temporarily, and only to a similar degree as with other forms of psychotherapy. Roughly the same forces of influence apply in and out of hypnosis. Individual differences and personal psychological needs are much more important in determining our capacity to be lastingly influenced than our state of consciousness in hypnosis. The roles we play under hypnosis are temporary. Permanent change to our personality occurs only when our core self-image is altered., which requires more than just superficial exposure to hypnosis.

Hypnosis can be used to some extent as a tool for gaining influence by someone who betrays our trust in them. It might be slightly easier to take advantage of someone with hypnosis, since they are relaxed, they are not evaluating ideas critically, and they are very sensitive to social cues. Increased vulnerability to persuasion is not an intrinsic characteristic of hypnosis, however. It takes time and skill to turn the hypnotic situation into one of profound persuasion by altering the self-image.

The qualities of hypnosis that make it useful as part of an influence technology are the capacity to create vivid, realistic fantasies, and the capacity of a very skillful hypnotist to make these fantasies seem as if they actually happened (pseudomemories). We are also temporarily less critical during hypnosis, and more willing to consider ideas that would otherwise seem unorthodox. These are traits that many people (particularly certain highly hypnotizable people) have *without* hypnosis, however. Hypnosis may only increase these factors by a relatively small amount and cannot be considered the only or even the most important reason for people accepting bizarre new ideas.

Simply going through hypnosis does not leave you vulnerable to having your core values or beliefs altered. Beliefs, values, and attitudes shift slightly over time, and hypnosis can provide fertile ground for new experiences that help to shift them. This is particularly true when we are already vulnerable to the influence of strong social forces such as trusted authority or the need to be immersed in a group identity. Advertisers use various methods of influencing our buying behavior, and religious groups have their own kind of tactics of persuasion. Not only do these not require hypnosis, but many are actually more powerful than hypnosis at influencing us. The power of social influence techniques might increase somewhat under hypnosis, because we are less critical but the influence does not originate with the hypnosis

Early impossible change by any means. In order to make profound and lasting changes to someone's personality, their sense of identity would need to be destabilized, and a new additional sense of identity created to replace it. Even with this extreme process, without constant reinforcement of the new identity, we tend to revert to the original identity. Analysis of the results of extreme conditions of "brainwashing" and thought reform show us that spectacular temporary success is sometimes achieved if total environmental control of the person is available for an extended time. There is much less success in achieving longer term changes in personality, even after years of continuous reinforcement is undertaken. This is not to say that years of thought reform do not change people, only that many people do not conform permanently to the desired ideal even after years of forced indoctrination.

Experiments have shown that it is actually possible to mimic the symptoms of dissociative identity disorder by building multiple identity senses over time with the help of hypnosis. Some have claimed that this process could be used to create the "Manchurian Candidate," a person with an assassin personality that is unknown to their other personalities. This is quite a bit beyond what was demonstrated, however, and is not consistent with what has been observed so far about the process. The identity senses built over time are not as distinct or autonomous as this extreme scenario would require.

"Mind control," to the extent that it actually occurs, is rarely a matter of simple technology applied to an individual by another individual. It is much more likely to be the result of our dependence upon an organization in a rigidly controlled physical, intellectual, and social environment. An example intended to be used for healing is a psychiatric hospital. A negative example would be a totalitarian religious cult or prisoner of war camp. Other, less extreme examples of the use of social pressures to help change us are addiction recovery groups. In perhaps the most extreme example, the prisoner of war camp, one analysis found that only one in a hundred prisoners exposed to Korean communist indoctrination attempts actually showed much acceptance of communist doctrine after repatriation. (Segal, 1956). This helps put the potential for easy and complete mind control into a little more realistic perspective.

Can I be hypnotized without my knowledge ?

Yes, we can be in "trance" without realizing it. Our consciousness shifts constantly, most of the time without any recognition on our part that anything is changing. Certainly we can drift in and out of absorption without realizing it, and a skillful hypnotist may well be able to perform an induction that doesn't seem at all like an induction. Some of the usual elements of hypnosis would be missing, such as the elaborate set of expectations that are normally provided by the patter of an induction. The "trance logic," and other elements of hypnosis may be there nonetheless.

Can I be hypnotized without my consent ?

No. You don't need to formally consent to hypnosis for it to happen, but you do need to cooperate at some level. Cooperation is one of the essential elements of hypnosis. It is even more important than relaxation or vivid imagery. If you do not cooperate, there can be no hypnosis. You don't need to explicitly recognize that you are cooperating, you just have to have enough trust to relax and focus on the voice of the hypnotist, allowing their words to capture your imagination.

The only things approaching "involuntary" hypnosis would be conditions in which you are drugged, or those where you are confused or distracted, and the need to understand what is going on becomes stronger than your desire to resist hypnosis. Under these conditions, you might temporarily cooperate with a hypnotist, and this temporary cooperation could conceivably be built into a stronger trust under the right conditions. Stage hypnotists make extensive use of confusion and distraction tactics to gain temporary compliance. Their tactics only work with a subset of people, however, and only up to a point. There is a critical moment with such "shock" inductions when the client either complies or breaks trust with the hypnotist. In order for them to comply, they must still be willing to cooperate to some degree at that critical point.

Under the influence of drugs strong enough to reduce our critical abilities, hypnosis is also very difficult because it requires some concentration. Drugs are sometimes used by hypnotists with "resistant" clients who are unable to relax, but this also of limited effectiveness since it reduces our ability to concentrate and follow instructions. Such drugs also reduce our arousal level and change our biochemical state, making it more difficult to transfer hypnotic suggestions to the waking condition outside of hypnosis. Much of the interesting work done under such "narcohypnosis" is lost when the client comes out of the effect of the drug. Posthypnotic suggestions sometimes remain after narcohypnosis, but they are generally not as effective as those given with full attention during normal hypnosis. The most powerful posthypnotic effect of narcohypnosis is amnesia for hypnosis, and that is probably because of state-dependent memory related to the drug.

Can I be forced to do horrible things under hypnosis ?

Hypnosis is a cooperative process. However, if you are comfortable cooperating with a fantasy about something you would normally find horrible, you might act it out under hypnosis, or under posthypnotic suggestion. In the same sense that we might do something unusual and then later blame alcohol, even if we didn't drink enough to actually lose control, we might also blame hypnosis for our loss of inhibitions. Even under "deep" hypnosis, under the influence of a dramatic fantasy role, we are still in some

If you are very uncomfortable, you will resist the suggestion, or modify it to make it more acceptable. The same is true of suggestion outside of hypnosis. Hypnosis does not operate at the low reflex level of behavior, it functions at a high level of centralized mental function. The involuntary nature of responding to hypnotic suggestion does not extend to complex behaviors that violate your deep values. These type of suggestions will break trust with the hypnotist, and you will find your own way to deal with them. People often find very creative ways of reinterpreting unacceptable suggestions and sometimes for punishing the hypnotist for their attempts to take advantage of them.

Can I be "brainwashed" to change my beliefs and attitudes under hypnosis ?

To the extent that this happens outside of hypnosis, it can also happen with the help of hypnosis. Hypnosis isn't generally the critical factor in this kind of change, it is at best a catalyst in the process. A possible interpretation of such a process will be described below. The general drift is that hypnosis itself is not necessarily used in this process, but that total and complete control of the physical, social, emotional, and intellectual environment permit the use of something resembling hypnosis over an extended period of time.

The potential role of hypnosis in dramatic personality change in an isolated group

In order to help understand the complex relationship between hypnosis and potential "mind control," I have included this section as a composite of various views of how dramatic personality change occurs from psychological forces. It should be noted that the principles of personality change are basically the same, whether we are talking about forced indoctrination ("brainwashing") or psychotherapy. The attitude and ethics of the people attempting the change are the primary difference. The primary elements are breaking down current sense of identity by various means, followed by solidifying a new sense of identity through active participation. Our capacity to resist personality change comes from the strength of our sense of identity, and our attitude in refusing to cooperate in a change process in order to gain rewards or avoid punishments.

Our deep beliefs and core values are part of our sense of who we are. In order to change these, we would have to change our sense of identity. Our sense of identity is normally maintained by constant reinforcement provided by our friends, family, and environment. Personality is normally very stable over our lifetime. It is extremely rare to find significant aspects of personality change permanently, short of organic brain damage or unusually traumatic experience, which change personality in unpredictable ways.

physical and social environment that helps maintain their attachment to their current sense of identity. Hypnosis can provide psychological and sensory isolation, though only temporary, and can encourage enactment of alternate roles or personalities. Lasting real personality change requires control of our environment, the breakdown of existing identity sense, replacement by a new identity sense, and continued reinforcement of the new identity sense. Not only is such complete control of the environment very difficult, but breaking down existing identity sense is next to impossible if someone has a strong sense of who they are.

Part of how hypnosis may sometimes play a role in personality change is that it can very effectively **promote extraordinary experiences that may be interpreted as significant spiritual experiences**. These serve as pivotal experiences that allow our worldview to shift in new directions. This may manifest in any of a number of ways, from a personal spiritual renewal to a commitment to a totalitarian religious cult. This is to a great extent the basis for the belief by some religious groups that hypnosis is inherently evil. This requires expectations to be carefully set so that the individual will interpret their experience in the desired way.

Hypnosis can also be a catalyst in significant changes by **providing a relief of anxiety**. As our anxiety is relieved by the relaxation aspect of hypnosis, participation in consciousness altering practices is reinforced, as is identification with the group. This is an important part of the process of becoming immersed in a new group identity.

Finally, selective amnesia and other effects can be carefully used in hypnosis to help build separate identity senses within the same person. This is in effect practicing playing multiple roles that are distinct from each other.

Three stages of building a new identity

Personality change was modeled by Kurt Lewin as a three stage process : unfreezing the current worldview, changing the worldview, and refreezing the new worldview (Schein, 1961).

The **first stage** involves reducing our alertness and forcing on us various kinds of sensory or information overload, confusion, or distraction. This builds a tremendous psychological and physiological tension that needs to be released. This is roughly analogous to the first step in a stage hypnosis induction, creating confusion or distraction by means of a sudden shock. When longer term effects are desired, the means of destabilizing people include inducing anxiety and terror, physical and social isolation, sleep deprivation, nutritional deprivation, infantilizing treatment, and sexual frustration. Shame and guilt are always central elements in destabilizing the current identity sense. The extreme psychological pressures needed to break down our identity sense cannot be continued for more than a few days.

distinguish fantasy from reality, dependent upon authority, basically to regress to a childlike state. In some ways, hypnosis is similar to regression to a childlike state. In fact, some psychoanalytic theorists have claimed that hypnosis is a kind of regression. This provides a distinct relief from the psychological stresses imposed in the first stage.

Other ways of manifesting or utilizing an altered state at this point to reduce anxiety include meditation, marching, repetitive slogans or movements, monotonous musical rhythms, body manipulations, or hyperventilation. At this point, we are cooperative and focused on the leader of the process, and may well be hypnotically responsive. At this point, elaborate fantasy may also be used to help create novel experiences, and to reinforce the belief system of the group. By controlling behavior, information, thought, and emotions to some extent, experience both within and outside of hypnosis will begin to be interpreted in a new way, causing a shift to the new belief system (Hassan, 1990). These latter elements are missing from simple hypnosis, which is why hypnosis alone cannot be considered a mind control technique. Personality change is made possible by the extension of the "trance" (by imposing more severe stresses), and the use of the "trance" to help create additional changes that will be reinforced by the environment.

The **third stage** involves reinforcing the new beliefs and new sense of identification with the group. This involves immersion in the shared symbol system of the group, isolation from reminders of the previous identity, increasing dependence on the group, new role models, continued control of behavior, thought, information and emotions, and immersion in new activities. This stage is also missing from normal hypnosis. Physical isolation is usually needed for this kind of control. In addition, the new identity sense usually reverts if the person is removed from the isolated group and returned to their former environment. The active participation of the individual in new activities for the group is a key element.

Personality factors which allow some people to be influenced more permanently than others by these kinds of pressures include :

- Lack of assertiveness
- Low intelligence
- Reliance on external supports for perception and belief
- Lack of self-confidence
- Valuing conformity above independence
- Moralism
- Black and white thinking
- Identity confusion
- History of embracing outside influences in unconditional surrender ("True Believer")
- Other-directedness vs. Inner-directedness

These are entirely different from the traits even loosely associated with hypnotic suggestibility such as "fantasy proneness." This reflects the

1. role expectations
2. role perception
3. role demands
4. role-taking aptitude or skill
5. self-role congruence
6. reinforcement properties of the audience

Self-role congruence is probably the most important factor determining whether forced compliance will lead to permanent change. It is the lack of self-involvement that prevents prisoners of war from being fully indoctrinated by "brainwashing" attempts.

Also, the personality factors alone are not enough to allow for personality change. The people who are best at resisting change often have very similar personality traits to those who are most influenced. A major difference is their initial willingness to cooperate in the process : "desire for preferential treatment," or "need to avoid threat and abuse" (Holt, 1964). This roughly parallels the case in hypnosis. Many people appear incapable of making use of hypnosis because they are unable to trust the hypnotist enough to cooperate in the induction.

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What is Unique to Hypnosis?[credits]

by Todd I. Stark

There is nothing that we can do under hypnosis that we cannot do under other conditions. A long series of laboratory experiments by T.X. Barber and colleagues compared a wide variety of abilities under hypnosis with abilities under conditions of non-hypnotic motivational instructions. Similar experiments since then have all confirmed his results. Any differences found between our abilities under hypnosis and our abilities when motivated without hypnosis are extremely subtle. There does not seem to be very much that is unique about the hypnotic induction, although it is a very convenient way to create the desired effects in some people.

The thing that is unique to hypnosis is not so much what we are able to do, but the experience we have while doing it. While there are other conditions under which we have similar experiences, few can be controlled and maintained as easily as hypnosis.

The point about hypnosis is that, at least for some people, it provides a reliable way of making use of our normal capacities in a more controlled way. Hypnosis does not provide any special abilities. It provides a cooperative setting for experiencing things in response to suggestion that we experience spontaneously under other conditions.

On the other hand, the simple capacity to make use of various normal abilities at will can be of extraordinary usefulness. For example, we have a natural ability to suppress pain and other sensations, but with hypnosis we are able to reliably make use of this talent. As another example, we have a natural ability to imagine things vividly as if they were real, but we can potentially make more effective use of this talent under hypnosis.

Things sometimes claimed unique to hypnotic responding :

1. Hypnosis and memory
2. Amnesia
3. Effects on the skin
4. Effects on the immune system
5. Pain control
6. Hallucinations
7. Time distortion
8. Posthypnotic suggestions

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Article by Todd I. Stark

From the Hypnosis FAQ by Todd I. Stark

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How reliable are things remembered under hypnosis? [credits]

by Todd I. Stark

This has often arisen as both a legal issue (as in the reliability of testimony obtained during or after hypnotherapy) and also a social issue (regarding the use of hypnotherapy to establish evidence of early child abuse, for example).

It is entirely true that subjects under hypnosis frequently recall past forgotten events (or 'repressed' memories in the jargon of psychoanalysis indicating an active role of the individual in forgetting as a defense mechanism).

It is also true that people under hypnosis often 'remember' things quite vividly that never actually happened, but which have great personal significance nonetheless. Psychiatrist William Sargent was one of the first to document the therapeutic benefit of emotionally charged experience, or a reaction, of fantasized life events.

This is one of the defining characteristics of deep trance hypnosis in fact, the intensity of fantasies as well as memories, and the inability to distinguish the two. This characteristic of trance is what makes it possible to use hypnotherapy to alter personal history in order to reduce the traumatic effects of past events on an individual's functioning. Not simply a reliving or 'catharsis' of the trauma, but a sometimes a lasting modification of the interpretation of the memory can and does occur in many cases.

This apparent fallibility and violability of human memory is frequently downplayed in discussions of hypnotic recall because of the already difficult time that legitimate victims of abuse have in proving what happened to them. It's not the intention here to make life more difficult for abuse victims, only to point out that hypnosis doesn't necessarily solve their problem of digging out facts from old memories as neatly as we'd like it to.

The illusion of unusual veracity of hypnotic recall appears to come from at least two main sources:

1. Older models of human memory as a simple recording and playback mechanism which preserved extreme details of everything perceived, and which could be played back in an enhanced way under certain conditions, like hypnosis.
2. The vividness and subjective meaningfulness often attributed to experiences under hypnosis partly as a result of the unique characteristics of hypnotic imagery.

In 1983, a committee commissioned by the American Medical Association cautioned against the systematic use of hypnosis for recollection for both its unreliability (the possibility for example of 'confabulation,' the creation of stories out of whole cloth to help fill in missing memories) and its potential to create vivid false memories with an artificially induced sense of certainty.

In addition to the previously provided references for hypermnnesia, here are some more specifically devoted to the limitations of hypnotic recall:

- D. Spiegel et al, 1989, "Hypnotic alteration of somatosensory perception," *American Journal of Psychiatry*.
- Loftus and Loftus, "On the permanence of stored information in the human brain," *American Psychologist*, 35(5):409-420 (May, 1980), critically evaluates the data gathered by neurologist Wilder Penfield who had once believed he had discovered during the probing of the brains of epileptic patients a 'sequential record of consciousness' similar to the old tape-recorder model of human memory.

No one yet knows exactly how human memory works in all its details, but the view of hypnotic recall as potentially highly fallible is also supported by clinical experience and experimental data.

Milton Erickson called the vivid experiences under hypnosis 'vivification,' and describes how a vivified image is experienced, regardless of whether remembered or constructed:

"... They are subjectively experienced as external events rather than as internal processes, with a consequent endowment of them as reality experiences."

"... They identified it with actual past experiences and thus endowed it with a subjective validity."

"... They 'created a reality' that permitted a responsive functioning in accord with the demands of the experiment."

Are there identified physiological correlates for such vivid recollections or recreations of past events? One controversial researcher, Michael Persinger, has written hundreds of articles on the subject of neurophysiological correlates of extraordinary experiences of all kinds. He has reportedly reproduced something like ecstatic mystical states with the help of electromagnetic stimulation of the cortical temporal lobes of human subjects, and facilitated vivid imagery akin to UFO abduction experiences. He is not alone in the observation of what is sometimes known as 'clinical mysticism,' which is seen in some forms of temporal lobe epilepsy and in mechanical stimulation of areas of the temporal lobes, but he is somewhat unique in his repeatedly published insistence that all or virtually all unexplained phenomena and seemingly false memories can be traced to electromagnetic effects on the

"Six adults, who had recently experienced sudden recall of preschool memories of sex abuse or alien abduction/visitation, were given complete neuropsychological assessments. All experiences "emerged" when hypnosis was utilized within a context of sex abuse or New Age religion and were followed by reduction in anxiety. As a group, these subjects displayed significant (T greater than 70) elevations of childhood imaginings, complex partial epileptic-like signs, and suggestibility. Neuropsychological data indicated right frontotemporal anomalies and reduced access to the right parietal lobe. MMPI profiles were normal. The results support the hypothesis that enhanced imagery due to temporal lobe lability within specific contexts can facilitate the creation of memories; they are strengthened further if there is also reduction in anxiety." (Taken from an on-line abstract).

If there is anything to this 'temporal lobe lability' hypothesis, it seems well worthwhile investigating its relationship to hypnotic suggestibility, and the hypothetical 'Fantasy Prone Personality' of Barber and Wilson.

As for recall under hypnosis, the experimental observation seems to be that the subject is uniquely motivated to remember details, but also uniquely capable of making up details and experiencing them as if they were remembered.

In Lynn and Rhue's 1991 *Theories of Hypnosis*, Robert Nadon et al. discuss a representative example of experiments in eyewitness recall with the aid of hypnosis. Subjects were shown a videotape of a mock armed robbery. They were then asked to recall specific aspects 6 times:

- Twice immediately after seeing the film.
- Twice a week after seeing the film.
- Once during hypnosis.
- Once after hypnosis.

The result was that high hypnotizability subjects (SHSS:C) recalled more cumulative items in hypnosis than they did just before hypnosis. Low hypnotizability subjects did *not* remember more during hypnosis. This matches our expectation of hypermnesia, that hypnosis facilitates recall for good hypnotic subjects.

Most interestingly, *both* high and low hypnotizability subjects also made more cumulative **errors** during hypnosis than just before hypnosis, though the effect was stronger with highly hypnotizable subjects.

One explanation of this kind of result from experiments is that the hypnotic context causes subjects to adopt a looser reporting criterion, and they

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What are the risks or dangers of hypnosis? [credits]

by Todd I. Stark

The risks of using hypnosis for change are roughly the same as those for other forms of psychotherapy. Competently performed hypnosis in itself has virtually no risk or danger. Even incompetently performed hypnosis usually has only a very minimal risk. Skillfully utilized suggestion by a malicious or unethical hypnotist, or hypnosis used with a particularly vulnerable person has some possible real psychological dangers associated.

Hypnotists in the process of psychotherapy (hypnotherapy) sometimes momentarily lose control during hypnosis because they encounter psychological needs or problems in their clients that catch them by surprise. If they are not well trained to deal with such events, there is a possible risk of exacerbating existing problems, or a remote chance of creating new problems. Hypnosis often involves vivid imagery which seems very real to the client, and intense emotion which *is* very real to the client. The hypnotist may even get caught up in the fantasy, or at least the emotion of it. One leading medical hypnotist (Mearns, 1961) listed the following potential areas of difficulty that the untrained or poorly trained hypnotist may confront, most of which are common to all forms of psychotherapy :

1. The situation may be deliberately misused to meet ulterior needs (e.g. seduction of trusting female clients)
2. The interaction may enhance negative aspects of the hypnotist's personality, or create dependence of the client on the hypnotist
3. Traumatic confrontation with previously unacknowledged memories
4. Precipitation of a latent psychosis
5. Substitution of one symptom for another
6. Panic reaction, or creation of traumatic fantasy
7. Complications due to misunderstandings
8. Difficulty in arousing the client, and problems caused by incomplete alerting.

The last category is an interesting example, because it is unique to hypnosis, and sounds like the sometimes voiced fear of "getting stuck in a trance." The media inspired scenario is that the hypnotist dies during hypnosis and their client never wakes up because they never get the commands to awaken.

No, you can't possibly get stuck in a hypnotic trance. However, a hypnotist can (rarely) get stuck trying to end a hypnosis session ! This is not because the client has lost control of hypnosis, but because the hypnotist has lost control to the client, who has decided that they need to stay "out of it" for a

The hypnotic "trance" is passive simply because hypnotized people find it more comfortable to remain still, not because they are immobilized by forces outside their control. They are fully capable of waking at any time, or moving at any time, if they are uncomfortable with what the hypnotist is suggesting to them. Hypnotized people do what they feel they need to do at the moment, which usually means cooperating with the hypnotist. However, this cooperation, or trust, can be broken during hypnosis, without ending the hypnotic session. The relaxed state of passivity will remain as long as the client is comfortable with it.

Hypnotic trance, like all "states of consciousness" is not turned on and off as if by a switch, it is a dynamic experience maintained by a number of continuously changing psychological and physiological variables. Left alone, without instructions to end hypnosis, we naturally either rouse fully or fall asleep. Like other psychological states, hypnotic trance varies continuously over time due to changing physiological and psychological factors.

What of the valid concern that it may be temporarily difficult to alert someone from hypnosis ? I say temporarily, although this has been reported to last as long as 12 days (Williams, 1953). It is important for the hypnotist to realize that that their client is attempting to control their own behavior. Understanding the reason for this kind of defensive reaction may be a key step in their therapy.

For those interested, a good list of "horror stories" about dangers in hypnosis is available (MacHovec, 1986). Robert Baker ("They Call It Hypnosis") calls MacHovec's book "*a collection of cases of individuals who suffered from various sorts of personality and emotional disorders prior to hypnotherapy, and then after hypnotherapy blamed the therapy for their problems.*" The object lesson here seems to be that hypnosis is safe when the hypnotist is properly trained to deal with the problem at hand. To help people recover from bad habits or improve their golf swing requires less specialized psychological training than dealing with more acute problems.

Even a safe procedure like hypnosis can help precipitate a serious problem in some people, if used for generally psychotherapy without adequate knowledge of both psychotherapy and hypnosis (Frauman, Lynn, & Brentar, 1993; Kleinhaus & Eli, 1987; Judd, Burrows, Dennerstein, 1985; Kleinhaus & Beran, 1984; Orne, 1965; Rosen, 1957; Rosen & Bartemeier, 1961).

Clinical data on hundreds of inductions gathered by E.R. Hilgard showed that hypnosis is a safe procedure, and that there are virtually no negative consequences associated specifically with hypnosis (Hilgard, Hilgard, & Newman, 1961). The only adverse effects found were temporary headaches or discomfort reactions upon attempting induction. These seemed to be correlated with previous negative experiences with general anesthesia.

In spite of the safety of hypnotic induction, there are strong psychological

"On the whole, hypnosis is not at all dangerous ... Still, there are some people who have a very slight hold on reality and for whom too much playing with fantasy might conceivably release tendencies toward psychotic behavior that they have shown under other circumstances as well. If such discordant behavior follows hypnosis, the hypnotist is likely to be blamed for it, even though there can usually be found many instances of similar behavior by the subject prior to any attempted hypnosis." (Hilgard, 1971)

This is why hypnosis should not be considered a casual interaction, but an intimate communication that should be used with some respect. Just as it would be irresponsible to do other sorts of psychotherapy without training, hypnosis used irresponsibly can have unexpected and even unfortunate results with people who already have underlying serious problems (Coe and Ryken, 1979) (Hilgard, 1974). Since these sorts of problems sometimes go undiagnosed for years, they sometimes arise quite surprisingly in therapy.

The general rule is : **don't let someone treat something with hypnosis, if they aren't qualified to treat it without hypnosis.** In other words, training in hypnosis alone does not qualify someone to treat psychological problems. Treating psychological problems involves inherent risk, and the capacity of hypnosis to reproduce a variety of psychological conditions makes it possible that a hypnotist can trigger a problem that they never suspected exists

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Who can use hypnosis effectively?[credits]

by Todd I. Stark

Nearly anyone can make use of hypnosis in some sense. However, there are distinct differences in how easily people can respond to suggestion in a way that seems involuntary or effortless. This is an important aspect of induction.

The most dramatic and consistent result in hypnosis has been the discovery of "hypnotizability." This refers to an ability to experience the classic hypnotic phenomena. Hypnotizability is remarkably stable over time although it can sometimes be modified by various means with some effort. About ten percent of the population is naturally "highly hypnotizable," and a few percent find classic hypnotic responses almost impossible to produce no matter what they try. The remainder of the population, most of us, are capable of experiencing some of the hypnotic phenomena fairly easily but have difficulty with others. Since most uses of hypnosis involve imagination and fantasy rather than primary suggestibility per se, hypnosis of a sort is still possible even with "low hypnotizable" clients, but it may not be the best choice of technique for therapy with them.

The closest thing that hypnotizability is related to is the quality of **imaginative absorption**. The correlation with imaginative absorption is not nearly strong enough to call them the same thing as hypnotizability. Absorption is the ability to become particularly involved in something, such that things that would normally be very distracting are not even noticed. Absorption is believed to be a personality trait, likely a sub-scale of the trait of **openness** from the "Big Five" personality model. Openness measures our willingness to explore and to consider unusual alternatives. Some of the most effective methods of improving hypnotic responsiveness involve engaging in behaviors that are most typical of people high in the **openness** trait.

A strong talent for imaginative absorption is not enough to guarantee hypnotizability. Hypnosis-relevant attitudes and the relationship between the hypnotist and the client also play an important role, as does a capacity to respond in an automatic way to language. While hypnotic suggestions often involve compatible images, or **goal directed fantasies**, these are not essential for response. In fact, research has shown that hypnotic responses to verbal suggestions occur even when we are concentrating on goal directed fantasies that are incompatible with the suggestion. For example, a suggestion that the hand is light might be combined with imagery of a heavy weight pulling the hand down. The hand still rises. So we know that while vivid imagery is a big part of making use of hypnosis, it is not the sole explanation for or cause of hypnotic responding.