

Does Clinical Hypnosis Have Anything to Do with Experimental Hypnosis?

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Hypnosis originated as a healing practice and its historical roots can be traced back to the ideas and methods of the physician Franz Anton Mesmer in 18th century Europe. As we now understand it hypnosis is a normal psychological phenomenon that can be investigated in the laboratory and understood in terms of mainstream psychology and the neurosciences. Normally one would expect there to be continuity between experimental research and theory on the one hand and the practical application of hypnosis on the other. In this paper it is suggested that there is reason to question how much the clinical application of hypnosis is informed by the non-clinical scientific evidence and even whether clinicians can be said to be using hypnosis as it is now defined and understood in the academic literature. These matters are also briefly addressed by reference to certain other contexts in which hypnosis is applied.

INTRODUCTION

Implicit or explicit in most descriptions of hypnosis are two key components, namely the ‘hypnotic trance’ (or ‘altered state of consciousness’) and the use of suggestion. The two are presumed to be linked in that the subject is more responsive to suggestions when he or she is ‘in a hypnotic state’. A third component, namely the ‘induction of hypnosis’, also links the two; the induction itself is a series of suggestions that directs or guides the subject into the hypnotic state. Finally one can distinguish a fourth component, suggestibility or hypnotic susceptibility, which is the inherent responsiveness of the subject to suggestion.

In this paper I examine the relationship between the two key components of hypnosis identified above—trance and suggestion—and explore the significance afforded to each in the historical development of hypnosis and in the various contexts in which hypnosis is said to be taking place, notably the laboratory and the clinic. On this basis I shall raise the question whether the disparity in the way hypnosis is represented and applied in these different contexts is often so wide that we may doubt whether the theoreticians and the practitioners are describing the same phenomenon.

THE HISTORICAL ANTECEDENTS OF MODERN HYPNOSIS

A good starting point for this enquiry is to remind ourselves of the historical development of modern hypnosis, the true origins of which can be traced directly back to 18th century Europe and the ideas and practices of the Austrian physician Franz Anton Mesmer (1734–1815). Recall that Mesmer proposed the existence of a universal force that he eventually called ‘animal magnetism’. Illness was associated with disturbances in the natural tidal flow of animal magnetism in the body and Mesmer claimed the ability to restore this and thus heal the patient. His preferred technique was to make slow passes with his hands over the patient’s body from the head to the toe. In response to this, patients would experience ‘crises’ (swooning, convulsing, shaking, crying, laughing hysterically, etc). Finally they would appear to enter some kind of stupor with a glazed look in their eyes. Most famously he devised group treatment methods at his salons in Paris in the 1770s and 80s.

How the theory and practice of hypnosis today evolved from the methodology and ideas of mesmerism is a fascinating and instructive story (see Gauld, 1992, for a comprehensive history). In summary (Heap, 2008a) first there was the acknowledgement that central aspects of mesmeric practice, such as the *baquet*, the mesmerist’s

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passes, and the patients' crises, were unnecessary for the purposes of treatment. Mental and physical relaxation became the more characteristic response of the patient from the start of the procedure. Secondly we see the development of theories based on biological accounts of the human nervous system at the time. Later, psychological explanations were advanced and *verbal suggestion* became the core feature of hypnosis, both procedurally and theoretically. Finally it was established quite early on that people varied in their responsiveness to hypnosis, only a minority being very susceptible.

One way of characterising this evolutionary process is to say that gradually the role of a special state or trance assumed less significance and the role of suggestion became more pivotal, along with suggestibility. This process in fact occurred very early on with the investigation by the 1784 Royal Commission of animal magnetism and its conclusion that mesmeric phenomena were attributable to the subject's imagination (Salas & Salas, 1996). A later illustration is the resolution of the dispute that continued for around 20 years, again in France, during the latter part of the 19th century between Jean-Martin Charcot and Hippolyte Bernheim and their associates (Gauld, 1992). Charcot drew comparisons between hypnotic phenomena and neurotic symptoms in his hysterical patients. He proposed a three-stage model of hypnosis, namely lethargy, then catalepsy, then somnambulism. However, Bernheim demonstrated that the entire range of hypnotic phenomena could be elicited in 15% of the normal population. He was also very critical of Charcot's three-stage model and demonstrated that these stages were not representative of the usual response of subjects to hypnosis. According to Bernheim (1888/1973) hypnosis is 'the induction of a peculiar psychical condition which increases susceptibility to suggestion' (p. 15). This emphasis on suggestion can be seen in the titles of several of his writings including his book whose title in the English translation is *Hypnosis and suggestion in psychotherapy: A treatise on the nature and uses of hypnotism* (Bernheim, 1988/1973). One of his students, Émile Coué, became famous for establishing a system of psychotherapy based on repeated autosuggestion without the induction of hypnosis.

MODERN THEORETICAL APPROACHES TO HYPNOSIS

I shall now fast-forward this brief account of the evolution of hypnosis to developments during the second half of the 20th century. The identification of a particular theoretical position on hyp-

nosis (or its forerunner, mesmerism) with a key individual continued throughout much of this period. However, unlike earlier formulations, the theories and models proposed by these writers were based on well-controlled laboratory experiments on normal participants. I refer the reader to Lynne and Rhue (1991) and Nash and Barnier (2008) for comprehensive accounts.

Before proceeding, it is important to briefly acquaint the reader unfamiliar with this work with what a laboratory session of hypnosis may consist of. Firstly the experimenter will perform a hypnotic induction procedure that usually consists of suggestions of mental and physical relaxation and an inner focus of attention (say on pleasant imagery). Then he or she will administer various suggestions that certain things are happening to the subjects or that they are in certain situations that would, if they were real, significantly affect the way they are perceiving, thinking, feeling and behaving. Examples of suggestions are as follows: that one arm is becoming light and will float in the air; that an arm is too heavy for the subjects to lift; that one hand is immersed in ice and is feeling numb and insensitive; that subjects can smell their favourite perfume; that they see their best friend in front of them; that they cannot see an object in front of them or hear a particular sound; and that they are reliving an event from childhood. Some suggestions are intended to take effect after the subject has been alerted and are termed 'post-hypnotic'. The extent to which the subjects respond to these suggestions and experience the effects as realistic and automatic varies from person to person; some are highly responsive, some do not respond at all, and most lie somewhere in between.

The main issue of contention amongst modern theorists has been whether, in order to explain hypnotic phenomena such as enhanced suggestibility, it is necessary to posit an altered state of consciousness or whether all can be accounted for by reference to concepts and processes from mainstream social and cognitive psychology such as imagination, expectancy and role enactment. The assault on state theories of hypnosis has been quite intense, to the extent that sceptics have felt entitled to say that 'hypnosis is a myth' or 'there is no such thing as hypnosis' (see Baker, 1990, for a highly sceptical exposition of hypnosis).

Despite the ferocity of the debate between the 'state' or 'special process' supporters and those who adopt the socio-cognitive position, there is good evidence that over the last 10 years or so a greater consensus on the fundamental nature of hypnosis has emerged in the academic literature. (A comparison between the chapters in, say, Lynne and Rhue, 1991, and the theoretical

POST-HYPNOTIC SUGGESTION

A suggestion that is administered during hypnosis but is intended to take effect following termination of the hypnotic experience.

accounts in Nash and Barnier, 2008, bears this out.) It is my belief that the modern state-versus-non-state controversy parallels the earlier conflict between the relative significance of the induction of 'trance' on the one hand and the process of suggestion and suggestibility on the other, and that this is how it is being resolved. Let me explain further.

First, laboratory studies of hypnosis on normal volunteers have demonstrated that the traditional hypnotic induction procedure is not essential in enhancing the suggestibility of the subject. In fact, responsiveness following an induction is, overall, only moderately higher than when suggestions are administered without an induction ('waking suggestions') and for some subjects there is no increase and even a decrease (Kirsch & Braffman, 1999). Moreover, when the traditional induction is replaced by 'task-motivational instructions' or an 'alert-active' induction (suggestions of increasing awareness, alertness and energy and sometimes substitution of the chair or couch with an exercise bicycle), or injection of a (inert) 'hypnosis pill' or inhalation of a (inert) 'hypnosis gas', then the same increase in suggestibility is found (Baker & Kirsch, 1993; Bányai & Hilgard, 1976; Barber & Calverley, 1963; Glass & Barber 1963). Hence, the role of the hypnotic induction may simply be to enhance the subject's expectancy and his or her commitment and motivation to engage in the suggestions to follow.

This conclusion is consistent with a recent investigation by McGeown, Mazzoni, Venneri, and Kirsch (2009) who analysed fMRI scans of subjects undergoing a hypnotic induction consisting of suggestions of mental and physical relaxation. Highly suggestible participants showed decreased activity in the anterior parts of the 'default mode' circuit but no increase in other cortical regions. The 'default mode' network refers to cortical areas that are active in the absence of goal-directed activity. In low suggestible participants the hypnotic induction produced no such changes but appeared to deactivate areas involved in alertness. These results suggest that the mode of action of the hypnotic induction, at least with highly suggestible people, is to prime them to respond more effectively to the suggestions to follow. Importantly the data confirm that relaxation is not a critical factor in this regard.

Secondly, there is good evidence that hypnotic suggestibility is a stable trait (Piccione, Hilgard & Zimbardo, 1989). This is in contrast to a strong socio-cognitive position such as that adopted by Nicholas Spanos and his colleagues, namely that differences in suggestibility are determined by the subjects' attitudes to hypnosis and their response styles (Gorassini & Spanos, 1999; Spanos,

1991; Spanos, Cross, Menary & Smith, 1988). According to this approach, unlike low responders, highly responsive subjects have a positive attitude to hypnosis and willingly become 'strategically involved'. Hence unresponsive individuals can be trained to become more responsive by changing their attitudes and encouraging them to adopt a 'strategic' approach when responding to suggestions. There is, however, good evidence now that a person's suggestibility is constant over time and is, at least in part, genetically determined (Horton & Crawford, 2004; Lichtenberg, Bachner-Melman, Ebstein & Crawford, 2004; Morgan 1973).

It is instructive for the present thesis to stay for a moment on the subject of measuring responsiveness to hypnotic suggestion. It has long been recognised that there are significant and reliable differences between hypnotic suggestions in terms of the proportion of subjects who respond to (i.e. 'pass') them. For example on the Stanford Hypnotic Susceptibility Scale Form C (SHSS:C; Weitzenhoffer & Hilgard, 1962), 92% of subjects in the normative group passed the 'hand lowering' suggestion, 43% passed 'age regression', and only 9% passed 'negative visual hallucination'. In this sense it is meaningful to talk about some suggestions being more 'difficult' than others and in earlier clinical texts (e.g. Hartland, 1971) the ability of subjects to respond positively to suggestions was interpreted as indicating the 'depth of trance' that they had attained (light, medium or deep). Traditionally, the deeper the trance the more profound the subjective response to suggestions of changes in experience, such as hallucinations, analgesia, amnesia, and age regression.

Nowadays, at least for research purposes, a person's 'hypnotisability' is measured by various standardised scales that are well-researched and have good psychometric properties (Woody & Barnier, 2008). The most widely used are those developed in the 1950s and 1960s by André Weitzenhoffer and Ernest Hilgard, namely the Stanford Scales of Hypnotic Susceptibility (Weitzenhoffer & Hilgard, 1959, 1962). They each consist of a range of suggestions, and the subject's responsiveness to each suggestion is scored. Collectively the scores attained for the suggestions yield a total score that, within the general population, has a broad distribution and a clear central tendency. The scales typically include a traditional hypnotic induction but this may be dispensed with and some scales do not include an induction at all. Suggestions not preceded by an induction are often called 'waking suggestions' and Kirsch (1997) has cogently pointed out that the correlation between waking and hypnotic suggestibility is as high as the test-retest

IMAGINATIVE SUGGESTIBILITY

A person's responsivity to suggestions when they are not preceded by a hypnotic induction procedure (also termed 'waking suggestibility').

DISSOCIATION

The suppression from conscious awareness of experiences, memories, perceptions and so on of which one would normally be aware; this includes the ability to be aware of or engage in two or more incompatible experiences, cognitions or activities without consciously acknowledging any inconsistency.

COGNITIVE INHIBITION

The active suppression of a cognitive response such as a thought or memory.

reliability of the standard scales. He proposes that *hypnotisability* may be defined as the increment in suggestibility following a hypnotic induction procedure and that *imaginative* and *hypnotic* suggestibility denote suggestibility before and after induction respectively.

The point to note here is that the historical development of hypnosis, with the change in emphasis from trance to suggestion and suggestibility, has left writers with an embarrassment of names for the instruments designed to measure subjects' responsivity. Are they *suggestibility* scales, *hypnotisability* scales, *hypnotic suggestibility* scales, *hypnotic susceptibility* scales, *hypnotic responsivity* scales, or what? The present writer's opinion is that they are primarily suggestibility scales but, in view of the fact that the term 'suggestibility' can refer to a number of different and unrelated human characteristics, to avoid ambiguity the term 'hypnotic suggestibility' may be the preferred one.

The third reason for the emerging consensus is the increasing body of evidence from neuroscientific research using behavioural and brain scanning techniques that indicate that subjects who score high on hypnotic suggestibility scales are different from those who score low, not merely when responding to suggestions but on other measures outside of the hypnotic context (Gruzelier, 1998; Horton & Crawford, 2004; Oakley & Halligan, 2010; D. Spiegel, 2008). This research not only provides strong support for the trait interpretation of suggestibility, but also indicates that those subjects who appear to be responding to suggestion are indeed having experiences that seem real to them and correspond with the intended effects. They are not merely complying, acting the part, or using conscious cognitive strategies available to all subjects, even those who present as unsusceptible.

One of the main focuses of current theory and experimental research is the construction and refinement of neurophysiological and neurocognitive models that account for successful responding to suggestion and the differences between responsive and unresponsive individuals. A key concept is dissociation or, as some writers prefer, 'cognitive inhibition' and there has been much debate where this process is located within the cognitive-behavioural system. Excellent reviews of current developments are to be found in Section II of Nash and Barnier (2008). The experimental methodology is characterised by a rigorous scientific approach and both research and theory are informed by developments in the field of cognition and the neurosciences in general, an essential requirement for any modern theory aimed at accounting for the range of hypnotic phenomena.

A MODERN DEFINITION OF HYPNOSIS

Throughout its history, writers have struggled to agree on a definition of hypnosis. The following definition by a well-respected authority in the field is an example of a consensus understanding of hypnosis based on current theories and experimental research:

Hypnosis is a process in which one person, designated the hypnotist, offers suggestions to another person, designated the subject, for imaginative experiences entailing alterations in perception, memory and action. . . . (T)hese experiences are associated with a degree of subjective conviction bordering on delusion, and an experienced involuntariness bordering on compulsion.' Kihlstrom (2008, p. 21)

Contrast this with the ideas and practices of Mesmer and his followers. Note also the emphasis on suggestion and suggestibility rather than on the assumption of some special state of consciousness as a prerequisite for experiencing the suggested effects.

CLINICAL HYPNOSIS

If we simply define hypnosis as what takes place when people say they are 'doing hypnosis' then by far the greatest proportion of this activity is undertaken by people such as physicians, psychologists, dentists, psychotherapists, counsellors and hypnotherapists with their patients and clients. Indeed, as we have seen, the historical roots of hypnosis lie in the practice of medicine and not the study of general psychology. Concerning this, the behaviourist Clarke Hull, who pioneered the laboratory investigation of hypnosis and suggestion, had this to say:

We have already seen the dominant motive throughout the history of hypnotism has been clinical, that of curing human ills. A worse method for the establishment of scientific principles amongst highly elusive phenomena can hardly be devised. (Hull, 1933, p. 18)

This makes sense when we consider that, just as the practice of medicine is rigorously grounded in academic sciences such as anatomy, physiology and biochemistry, so we would expect the clinical application of hypnosis to be informed by mainstream disciplines such as cognitive and social psychology and the neurosciences.

My experience over the last 33 years of studying hypnosis, attending numerous training events and international conferences, and

communicating with academic and clinical colleagues across the world has consistently caused me to wonder how much the rationale of clinical hypnosis is based on the experimental research findings and theoretical refinements that are summarised in the previous section. I also wonder to what extent hypnotic processes as elucidated by laboratory research are instrumental in therapeutic hypnosis, even when the outcome is a successful one.

If we approach hypnosis from the standpoint of its various therapeutic or clinical applications, a common assumption is that the patient is placed in some kind of psychophysiological state that is beneficial in itself (e.g. some form of mental and physical relaxation in which self-healing is promoted) and which facilitates the person's responsiveness to healing or persuasive influences in the form of hypnotic suggestions. There is one further claim that many practitioners make, namely that hypnosis facilitates access to 'the unconscious mind'.

There are a number of assertions here that I shall now expand on, though only to the extent that is possible within a single article.

HYPNOSIS AS A SPECIAL STATE

A principle assumption of clinical hypnosis has always been that it is a special state of the mind. However what has emerged from laboratory studies of hypnosis is that this does not play a central role, if it plays any role at all, the emphasis being on suggestion and suggestibility.

A more general description of hypnosis is that of profound relaxation. In their descriptions of hypnosis, for example in their brochures and on their websites, clinicians often inform potential clients or patients that hypnosis is a state of physical and mental relaxation. The description of hypnosis on the website of the European Society of Hypnosis (ESH) is fairly standard and includes the following:

During the induction of trance, concentration is distracted from external stimuli and directed to internal sensations. Usually a state of physical relaxation is achieved as a first sign. Hypnosis is not a stereotyped 'relaxation programme' but is tailored individually. Relaxation in hypnosis is associated with a calming of biological rhythms like breathing and heart rate. This makes it possible for every patient to individually focus on inner experiences. Hypnosis promotes the ability to relax during various treatments and thus to take responsibility for one's own well-being. (Schulze, undated)

Understandably, hypnosis is often compared to relaxation procedures such as progressive muscular relaxation, autogenic training and biofeedback. It is also compared with Eastern meditative practices such as transcendental meditation, mindfulness, and Qigong (Edmonston, 1981; Holroyd, 2003; Huang, 2008; Lynn, Das, Hallquist & Williams, 2006). For example the Taiwanese psychiatrist Wei-Ching Huang (2008) has this to say about the growth of interest in hypnosis in Taiwan:

It is worthwhile to point out that, within the Chinese society, the traditional Qigong of the Daoists and Zen meditation of the Buddhists, all involve the altered conscious state by developing hypnotic-like condition. . . . If Qigong or Zen meditation is guided by the master for the students, it even becomes more similar to the induction of hypnosis by the therapist to the clients. . . . In another word, the practice of hypnosis is observed in the Eastern and Western traditional customs and it is a pan-culture phenomenon. (p. 29)

A modern approach to understanding hypnosis that incorporates relaxation as its pivotal process is that described by Edmonston (1991). He has postulated that 'neutral hypnosis', that is hypnosis limited to a standard induction and deepening routine, is equivalent to relaxation and that phenomena that are labelled 'hypnotic' are merely facilitated by relaxation. He proposed that we use the word 'anesis' as a more appropriate label, but this has not proved a popular term. The theory has not been instrumental in generating much research activity and is not generally accepted.

A state of relaxation and an inner focus of attention is indeed an accurate description of what people usually experience when undergoing hypnosis in the clinical context and there is good reason for this. There is convincing evidence that relaxation procedures such as those that are used as traditional hypnotic inductions have therapeutic value in treating a range of conditions such as stress, anxiety disorders, and psychosomatic problems, as well as helping patients cope with uncomfortable medical and dental procedures and childbirth (see Lynn, Rhue & Kirsch, 2010, for comprehensive reviews of this work). However, as we have seen in the previous section, a state of *relaxation* is not a defining feature of hypnosis as it is studied in the laboratory, whereas *suggestion* and *suggestibility* are.

Of course, hypnotic relaxation procedures do use *suggestion* to achieve their ends. However, there is little to indicate that the state of mental and physical relaxation thus achieved is fundamentally different from that derived by other methods, including the various forms of meditation (Benham & Younger, 2008; Wagstaff, 1981). Also, there are many occasions during hypnotic treatment when a patient may not be particularly relaxed and may even be in a highly aroused state, as when he or she is reliving an exciting or a traumatic memory. No one suggests that at such times the patient has ceased to be ‘hypnotised’.

Now, it is certainly the case that in the laboratory, just as in the clinic, induction procedures incorporating suggestions of mental and physical relaxation are commonly used and hence, in this context also, participants are likely to find the experience very relaxing. However, the point I am making is this: in the laboratory relaxation is found not to be an essential property of hypnosis whereas in the clinic it is considered to be so. Thus in this fundamental way, hypnosis as it is studied and understood in the laboratory is not the same as hypnosis as it is understood in the clinical context.

SUGGESTIONS IN THE LABORATORY AND IN THE CLINIC

I have already described the kinds of hypnotic suggestions that are studied in the laboratory. Examples of hypnotic suggestions that are regularly used in treatment are those intended to produce physical relaxation and calmness, control or diminution of pain and other symptoms, the reliving of an important memory (perhaps by suggestions of age regression), and the experience of an unpleasant sensation (as in covert sensitisation for smoking).

Unlike in the laboratory, in the clinic the aim of many hypnotic suggestions is that they bring about desirable behavioural, cognitive and emotional changes of an *enduring* nature, not changes that last only for the duration of the therapy session; hence the extensive use of post-hypnotic suggestion. For example it is often suggested to patients that as soon as they start to experience their problem in their daily life (undue anxiety, pain, negative self-referential thoughts, a compulsion to perform an undesired habit, and so on) their symptom- or habit-control strategies will immediately take effect and they will thus successfully deal with the situation (see Heap & Aravind, 2002, for examples of these). Some post-hypnotic suggestions are more general; these include confidence building or ‘ego strengthening’ suggestions such as *‘Every day... your nerves will become*

stronger and steadier... your mind calmer and clearer... more composed... more placid... more tranquil. (Hartland, 1971, p. 201)

In the laboratory it has been found that although responding to suggestions during hypnosis and post-hypnosis feels very compulsive and automatic to the highly suggestible subject, there are limitations on their influence once the hypnotic context is terminated. Firstly, responding does involve cognitive effort on the subject’s part (Barnier & McConkey, 1996, 1998, 2001) and may be over-ridden by the subject’s own volition or by competing habits. Very importantly, the influence of a suggestion is determined by the explicit and implicit demands of the context; when those demands are perceived as no longer operative, the subject stops responding. For example, in experiments on highly susceptible subjects the response to post-hypnotic suggestion ceases when the experiment appears to have been temporarily suspended or when the subjects perceive themselves as no longer under an obligation to behave in the manner required by the experimenter, or even, although not always, when they are no longer under his or her surveillance (Damaser, Whitehouse, Orne, Orne & Dinges, 2010; Fisher, 1954; Spanos, Menary, Brett, Cross & Ahmed, 1987; St Jean, 1978). For this reason also, the influence of the suggestion is likely to diminish over time.

The question I am now posing is this: to what extent are therapeutic suggestions (including post-hypnotic suggestions and self-suggestions) in the clinical context equivalent to hypnotic suggestions in the laboratory and to what extent do they operate in the same way? There is not a great deal of direct evidence that in the experimental context hypnotic suggestion itself can bring about such significant and enduring changes in a person’s life of the kind that are witnessed when a person responds successfully to therapy. That the therapeutic protocols provided by clinical hypnosis are of proven efficacy is not in question here; however one is entitled to ask whether their efficacy is due to hypnosis as it is studied in the laboratory and on which current theoretical models are based or whether non-hypnotic processes are at work.

By ‘non-hypnotic’ processes I do not just mean general effects such as the therapeutic alliance and the patient’s expectation of change. Many hypnotherapeutic manoeuvres are very similar to behavioural methods such as various relaxation and anxiety management procedures, imaginative rehearsal of coping strategies, and covert conditioning techniques such as imaginal desensitisation, sensitisation, reinforcement, and modelling (Cautela & Kearney, 1986; Cautela &

COVERT SENSITISATION

A form of conditioning in which an imagined stimulus, such as a cigarette, is paired with an imagined aversive stimulus or event until the aversive reaction is triggered by the first stimulus alone.

EGO STRENGTHENING

Refers to a series of suggestions, usually of a general nature, that are intended to enhance the subject’s self-confidence and self-esteem.

McCoullough, 1978). The rationale for adopting such procedures is not hypnotic suggestion and suggestibility but learning and conditioning processes.

One way of addressing the above question is by investigating whether there is any relationship between outcome of hypnotherapy and the patients' scores on hypnotic suggestibility scales. This point was made by Evans (1991) when he asked, 'Can obtained treatment changes be specifically attributed to hypnosis rather than to the non-specific effects of the hypnotic relationship?' He then goes on to say, 'Such an attribution can be made only if individual differences in hypnotisability correlate with the extent of treatment success' (page 159). Of course one still expects other predictors of outcome to be influential such as rapport with the therapist, positive expectation, and commitment to the therapy.

There are numerous published clinical trials investigating hypnosis in the treatment of a variety of conditions and problems in which the hypnotic suggestibility of the patients has been measured by standard scales. Several reviews of this work have been undertaken (Barnier & Council, 2010; Flammer & Alladin, 2007; Lynn, Boycheva & Barnes, 2008; Lynn, Meyer & Shindler, 2004; Pinnell & Covino, 2000; Waddern and Anderton, 1982). The results give a very mixed and confusing picture. There are many papers reporting successful outcomes for a wide range of problems in which the hypnotic suggestibility of the patients was not a significant factor, and in many others the relationship proved to be weak. There appears to be a tendency for hypnotic suggestibility to correlate with outcome in those problems that have a somatic component (e.g. pain—including headaches—warts, asthma and dermatological conditions) in contrast to problems involving voluntary behaviour such as smoking and obesity (Barnier & Council, 2010; Flammer & Alladin, 2007; Wadden and Anderton, 1982), but this has not proved to be a consistent finding.

One problem with these investigations is that the mere indication that the patient is not responsive to suggestions, either while formally testing his or her hypnotic suggestibility or during therapy itself, may weaken the confidence and expectations of both patient and therapist that a successful outcome will be forthcoming and this itself can have a deleterious effect on outcome. Significantly, Pinnell & Covino (2000) note that the relationship between outcome and hypnotic suggestibility may be absent if the latter is measured after the conclusion of treatment and in a different context. Also, probably more often than not, hypnosis is just one adjunctive component

of the treatment being carried out; hence its relative contribution to outcome may be difficult to quantify.

There is one difference between the laboratory and the clinical context that should be noted, namely that laboratory studies of suggestion and suggestibility normally consist of one session whereas a course of therapy usually consists of several treatment sessions. Also the patient is often encouraged to practise 'self-hypnosis' or 'auto-hypnosis' (using a taped recording). Perhaps the potency of the hypnotherapeutic suggestions is thereby strengthened. This may be the case, but we would still expect a clear relationship between hypnotic suggestibility and outcome. Also there are non-hypnotic processes whereby treatment efficacy is enhanced with repeated sessions, notably covert rehearsal and practice of the therapeutic techniques and strategies.

In summary, the weakness, elusiveness and inconsistency of any relationship between hypnotic suggestibility, as measured formally, and the outcome of hypnotic treatment raise doubts about the extent to which clinical hypnosis, even when it is effective, involves the same processes and mechanisms as hypnosis studied in the laboratory and upon which existing theories are based.

Should hypnotic suggestibility scales be used routinely in the clinic? Some clinicians have developed protocols whereby decisions about treatment are informed by the patient's measured hypnotic suggestibility or susceptibility (e.g. H. Spiegel, 2007; Wickramasekera, 1993). More generally, writers often lament the reluctance of clinicians to adopt this procedure (see, e.g., Barnier & Council, 2010). However, if there is strength in the above conclusion then we may question whether there is any good reason for clinicians to formally measure hypnotic suggestibility prior to embarking on treatment.

HYPNOSIS AND THE UNCONSCIOUS

Earlier modern texts on the clinical applications of hypnosis made extensive use of 'the unconscious mind' in two ways. The first, perhaps under the influence of Émile Coué, is the idea that suggestions are effective when they, in a manner of speaking, become 'implanted in the unconscious (or subconscious) mind' (Hartland, 1971). This notion is, in my experience, not evident in more recent texts with the exception of the Ericksonian literature, which I shall mention later.

The second claim concerning hypnosis and the unconscious is that hypnosis allows access to repressed feelings, ideas and memories that are not expressed consciously. According to Yapko (1990):

Because of the dual nature of the human mind (i.e. conscious and unconscious), memories and details that may have been repressed or else simply escaped detection by the conscious mind may not have escaped the person's unconscious mind. (p. 74)

Hypnosis is considered to be a way of accessing this material. (Nowadays it is more customary to refer to these experiences as 'dissociated' rather than 'repressed'.)

This property that is ascribed to clinical hypnosis is not one that is generally claimed by those researching hypnosis in the laboratory. However, a rationale is provided by Hilgard's neo-dissociation theory and its investigation in the laboratory (Hilgard, 1986). This theory adopts an everyday understanding of dissociation whereby we assign attentional priority to particular activities or experiences while simultaneously engaging in other activities or while unaware of other ongoing experiences (e.g. not being aware of pain while attending to an emergency). In simple terms, hypnotic suggestions are a means of directly controlling this process. Thus, for example, when responding to arm levitation, the subject is consciously aware that the arm is rising but is unaware of the effort of lifting it; thus the arm appears to him or her to be moving 'on its own'.

One way that Hilgard demonstrated his model was by the 'hidden observer' effect (Hilgard, 1979, 1986). The classic demonstration of this involves the elicitation of 'true' ratings of ischaemic pain by highly hypnotisable subjects who are responsive to suggestions of profound analgesia. During hypnotic analgesia the experimenter suggests that there is a hidden or 'unhypnotised' part of the mind that can give the pain ratings 'out of awareness'. These ratings are duly revealed in writing or by pressing numbered keys.

The exact mechanism of the hidden observer remains a topic of some controversy (see e.g. Kirsch & Lynn, 1998). However it may provide a rationale, albeit a rather tenuous one, for the idea that hypnosis allows access to information that is *already* dissociated—i.e. inhibited from conscious expression by, in terms of Hilgard's theory, 'an amnesic barrier'. Hypnotic procedures that exploit this idea include what are termed 'exploratory' and 'uncovering techniques' or simply 'hypnoanalysis' (Cheek & Le Cron, 1968; Kroger, 1977; Waxman, 1989). For example it may be suggested to the patient that slight involuntary finger movements signal the messages 'yes', 'no', 'don't know' and 'don't want to say' in response to questions by the therapist such as 'Is your problem

related to something that happened in the past?'. Other methods are dream suggestion and the 'theatre technique' whereby it is suggested that the patient is watching a play or a movie that will help explain in some way the reasons for his or her problems and their possible resolution.

The usefulness of these procedures is not being disputed here (for further discussion see Heap & Aravind, 2002), only their relationship to the understanding of hypnosis that has emerged from laboratory research. It seems that once again the interpretation of hypnosis by the clinical hypnotist places much more emphasis on the 'special state' concept as opposed to suggestion and suggestibility which is the focus of experimental and theoretical interpretations.

It is appropriate to ask if this really matters, since the main concern of the clinician is to obtain good therapeutic results, even if the assumptions on which the treatment are based do not match those derived from experimental investigations. In this case it matters a great deal.

During the 1990s and up to the present day, thousands of adults in America, Europe and Australia have come genuinely to believe that one or both of their parents or other members of their family sexually abused them, often quite extensively, when they were children, despite there being no evidence that this had occurred. The majority of these cases of 'false memories' of abuse have been due to the suggestive influence of psychotherapists (Brandon, Boakes, Glaser, Green, MacKeith & Whewell, 1997). Prior to therapy the patients had no knowledge or memory of any such abuse. In a survey of 4,400 families of the US False Memory Foundation (42% response rate), in 86% of members charged with incest their accusers had undergone psychotherapy or psychiatric treatment (McHugh, Lief, Freyd & Fetkewicz, 2004). In the UK, Boakes reports a rate of 75% in around 100 cases referred to her (Waterhouse, 2003).

Amongst the methods that have been used to elicit these false memories are the hypnoanalytic procedures mentioned above. Here we do have an instance where it is important to ground clinical practice in theory based on solid research evidence, even when that evidence is derived from experimental work in the laboratories of non-clinicians.

ERICKSONIAN HYPNOTHERAPY

The present discussion of hypnosis would be incomplete without examining a significant development in clinical hypnosis over the last 30 years, namely the influence of the American psychiatrist and psychologist Milton Erickson (1901–1980)

and his followers (Lankton, 2008). This influence is part of a wider approach to psychotherapy in general that is often termed 'strategic' although there are many components of Ericksonian psychotherapy, both theoretical and practical, that are quite distinctive (Haley, 1973, 1993). One fundamental tenet is that clients have the personal resources to solve their problems but these are not immediately obvious or accessible to them. In other words the possible solutions can be said to be 'unconscious'.

Hypnosis is one way of facilitating access to these resources, the key concept being what Ericksonians term the 'naturalistic trance', in which it is possible for the client to suspend his or her 'habitual frame of reference' and thus discover choices otherwise not accessible to him or her. Thus hypnotic communication may be said to bypass the critical faculties of the conscious mind (Yapko, 1990).

The 'naturalistic trance' is an altered state of consciousness that is continuous with everyday 'trance' experience – times when we are deeply involved in an experience such as listening to some thrilling music, but also moments of surprise, shock, anticipation, suspense, confusion, inspiration, and insight. Hypnotic phenomena, that is the responses to hypnotic suggestions, are also expressed in 'naturalistic' terms. For example, an arm lifting without apparent conscious effort is an everyday occurrence, likewise not noticing a pain, seeing something that is not there, not seeing something that is right in front of one, recalling a past event so vividly that it seems real, failing to recall something one has only just been told or even done, and so on.

Although radical in many ways, the Ericksonian approach to hypnosis retains the features of the traditional model summarised earlier: the patient is placed in some kind of psychophysiological state that is beneficial in itself and which facilitates his or her responsiveness to healing or persuasive influences. We also have the idea that hypnosis facilitates access to the unconscious mind, albeit one that is conceived of in positive terms. As such we may question what the approach has in common with the understanding of hypnosis that has emerged from laboratory investigations based on mainstream cognitive science. This may not unduly trouble practitioners of Ericksonian hypnosis, but the ideas summarised above sit very uneasily with the latter.

Unlike existing theories, Ericksonian ideas have not spawned a great deal of research. The potency of indirect methods of suggestion claimed by Ericksonians in the therapeutic context has not been demonstrated in laboratory conditions

(Fricton & Roth, 1985; Groth-Marnet & Mitchell, 1998; Lynn, Weekes, Matyi & Neufield, 1988; Van Gorp, Meyer & Dunbar, 1985).

OTHER HYPNOTIC CONTEXTS

So far I have focused on two important contexts involving hypnosis: the academic and experimental on the one hand and the clinical on the other. There are however other contexts in which hypnosis is involved and where it is again relevant to ask to what extent ideas and practice are informed by current research findings on the nature and properties of hypnosis in the non-clinical population. The contexts that I shall mention here are those in which assistance from an expert on hypnosis is required in a legal, medico-legal or forensic setting.

A pertinent example is the use of hypnosis in the interrogation of eyewitnesses in criminal cases, a practice that goes back over 150 years (Gravitz, 1983). This application appears to be based on the idea that when 'in the hypnotic state' a subject's memory is much clearer than otherwise. There is in fact no theoretical justification for believing this; the laboratory evidence is very inconsistent and hypnotic procedures may lead to memory distortion and even confabulation (American Medical Association, 1985; Heap, 2008b; Wagstaff, 1999). Because of these difficulties, in several countries this particular application of hypnosis is now deprecated (Heap, 2008b).

Another relevant context is in legal cases—civil and criminal—in which it is asserted that hypnosis or a related procedure has been involved and the hypnosis expert is instructed to provide the court with his or her opinion. I have published a number of accounts of my own work in this field (Heap, 1995, 2000a, 2000b, 2006, 2008b). These have included claims of negligence against therapists and stage hypnotists, allegations of sexual assault during hypnosis or similar procedures, and cases of defendants claiming they were hypnotised when committing the alleged offence.

In these accounts I have summarised existing published work by authorities in these areas and, in some cases (e.g. Heap, 1995), the opinions of expert witnesses instructed by the opposing side in the cases described. I have noted that in expressing their opinions, many writers and expert witnesses have preferred the conceptualisation of hypnosis that largely informs clinical practice and have not drawn on the current experimental research evidence on suggestion and suggestibility as well as social and cognitive psychology generally. For example they rely on the concept of

'the hypnotic trance' in explaining the aggrieved person's experience and behaviour, for instance his or her apparent inability or unwillingness to take protective action against the hypnotist's unwelcome advances; they make no reference to laboratory research on hypnotic suggestions for committing antisocial and harmful actions (e.g. Levitt, Aronoff, Morgan, Overley & Parrish, 1975; Orne & Evans, 1965; see also Gibson, 1991) and compliance and obedience in general (e.g. Milgram, 1974); and they do not consider the laboratory evidence on the determinants and limitations of post-hypnotic responding summarised earlier in this paper.

In fact, in my own experience the research literature on social and cognitive psychology in general provides convincing explanations of the claimant's or complainant's experiences and behaviour in most of these cases.

DISCUSSION

Over the years, the scientific investigation of hypnosis has been hampered by the lack of an agreed definition of hypnosis and discussion continues about what should and should not be included (Green, Barabasz, Barrett & Montgomery, 2005). Without an agreed definition researchers cannot properly investigate hypnotic phenomena. If, say, as is often the case, an investigator runs two groups of subjects or patients, 'hypnotic' and 'non-hypnotic', then one ought to ask what it is that defines this difference? One answer may be that the first group experienced a hypnotic induction procedure and the second group experienced something else – say they listened to some music. In that case we have to define what distinguishes a procedure that is termed 'a hypnotic induction' from one that is not. Instead of this, researchers simply assumed that 'a hypnotic induction' is a procedure that encourages relaxation and an inner focus of attention. In fact this is based on an understanding of hypnosis that is no longer characteristic of modern theoretical approaches.

Perhaps as a consequence of all of this the scientific investigation of hypnosis has not simply shaped how hypnotic phenomena are to be explained but how hypnosis itself is to be defined in the first place. Definitions similar to that provided by Kilstrom (2008) given earlier are now fairly non-contentious (Green et al 2005; Heap & Aravind, 2002). They have two components, one procedural – the hypnotist administers suggestions – and one experiential – the subjects respond accordingly with changes in feelings, perception, cognition and behaviour that are experienced as having an involuntary and realistic or even 'delusional' quality. It is therefore fortunate that we

have agreed and reliable methods of measuring the subject's response. These measuring instruments reveal that responsiveness is enhanced when the subject is motivated, focused and engaged with the procedures, whatever method is used to achieve this, but that an upper limit is set by his or her inherent level of suggestibility.

Just from this description of hypnosis alone one can reasonably propose that hypnotic procedures may have therapeutic applications. It is the business of therapists to help bring about desirable changes in feelings, perceptions, thoughts and behaviour in their clients and patients. This also describes the work of physicians or dentists when they are endeavouring to make a difficult clinical procedure more comfortable and less anxiety-provoking.

I have, however, in this paper questioned the extent to which 'hypnosis' as investigated in the laboratory and on which existing theories are based, is the same as 'hypnosis' that is represented and practised by clinicians. For example I have raised the matter of whether, in those clinical applications in which *enduring* changes are sought, such changes are really effected by the process of hypnosis as currently defined or whether they are due to non-hypnotic aspects of the treatment. That there is often no relationship, or only a weak one, between hypnotic suggestibility and outcome indicates that, for the most part, hypnosis—*hypnosis as defined here and as understood by those researching it*—plays only a limited role in what is called clinical hypnosis or hypnotherapy.

It has also been noted that, whereas mental and physical relaxation is usually described by clinicians as an essential property of hypnosis, this has not proved to be the case for hypnosis in the laboratory. However, it is acknowledged that hypnotic suggestions may be used to promote mental and physical relaxation and this is a very common purpose of hypnosis in the clinic.

Finally I have observed that psychotherapists who use hypnosis claim that it improves recall and facilitates access to the unconscious mind, leading, say, to the recovery of 'repressed memories'. Laboratory evidence for improvement or recovery of memory due to hypnosis is weak and hypnotic procedures aimed at such may lead to memory distortion and confabulation. Indeed evidence from clinical practice itself has indicated that detailed confabulation, in the form of false memories of sexual abuse in childhood, may result from this application of hypnosis.

How much of this matters? There is sufficient evidence that treatment protocols that are based on the assumptions of clinical hypnosis that I have described are efficacious (Lynn et al, 2010). Efficacy is the main concern of the clinician, even

if the reason why the treatment works is not fully understood or the 'working model' turns out to be wrong. The obvious rejoinder to this is that the 'recovered memories' controversy of the last 20 years has exposed the dangers of failing to ensure that therapeutic practice is based on models and theories that have robust scientific support from mainstream psychology and related disciplines. And when hypnosis enters the legal and forensic arena, opinion should be grounded in the experimental research evidence and not assumptions about its clinical mode of operation. An expert witness who is not so informed would be given a very difficult time in a court of law.

Notwithstanding the above, there *are* areas of clinical practice which are clearly influenced and guided by experimental research. I shall now describe, albeit briefly, three examples these.

Firstly, it has been noted that although relaxation types of induction are often the most useful in clinical practice, if the purpose of the induction is primarily to enhance the patient's responsiveness to suggestions then experimental research indicates that other inductions may be used when appropriate. For example, some practitioners occasionally report using inductions that emphasise mental alertness and increasing energy rather than relaxation (Bányai, Zseni, & Forenc, 1993; Capafons & Mendoza, 2010; Gibbons, 1979; Heap & Aravind, 2002).

A second area of cross-fertilisation of theory and practice is that of pain control. There are various ways one can use hypnosis to assist in pain relief and pain management (Jensen & Patterson, 2008; Patterson, Jensen & Montgomery, 2010) and laboratory and clinical investigations have jointly contributed to developing effective procedures (Montgomery, DuHamel & Redd, 2000) and elucidating what may be the mechanisms that underly their efficacy.

Thirdly, both laboratory and clinical research into the influence of hypnotic suggestion (including self-suggestion and imagery) on physiological functioning may indicate how and in what circumstances hypnosis may be used in treating a number of medical conditions including those that have been termed (though less so nowadays) 'psychosomatic'. These include studies of

gastrointestinal activity (e.g. Klein & Spiegel, 1989; Whorwell, Houghton, Taylor, & Maxton, 1992), blood flow (Barabasz & McGeorge, 1978; Dikel & Olness, 1980), and respiratory functioning (Isenberg, Lehrer & Hochron, 1992). Clearly investigations such as these are relevant to the hypnotherapeutic treatment of problems. There has also been great interest in the effect of suggestion on immunological functioning (Moore & Tasso, 2008).

Laboratory studies of how suggestion and imagery may influence these physiological processes has obvious relevance to their application to somatic disorders (e.g. irritable bowel syndrome, headaches, asthma and dermatological complaints) but well-controlled clinical trials, of which there are a growing number, are necessary to ascertain if any changes that may be effected are enduring and of clinical significance. Also the role of hypnotic suggestion, as distinct from more general effects such as relaxation, needs to be clarified.

Finally it is worth recalling what was earlier noted about the role of hypnotic suggestibility in treatment outcome. It may be more than coincidence that it is in the two aforementioned areas of application – pain and somatic disorders – where positive relationships have more often been observed in clinical studies.

CONCLUSION

Does clinical hypnosis have anything to do with experimental hypnosis? The message of this paper is not that clinical practitioners of hypnosis must always pay heed to the academic research literature and must amend their ideas and practices accordingly. The working models of hypnosis that they adopt will be those best suited to their needs and those of their patients or clients and these may not necessarily coincide with those of the experimentalists. The aim of this paper is simply to raise the question of how much experimental and clinical hypnosis have in common with each other and how much the former informs the latter. Perhaps the answer to both these questions is 'not as much as is often implied'.

REFERENCES

- American Medical Association (1985). Council on Scientific Affairs report on 'Scientific status of refreshing memories by the use of hypnosis'. *Journal of the American Medical Association*, 253, 1918–1923.
- Baker, R. A. (1990). *They call it hypnosis*. Buffalo, New York: Prometheus.
- Baker, S. L., & Kirsch, I. (1993). Hypnotic and placebo analgesia: Order effects and the placebo label. *Contemporary Hypnosis*, 10, 117–126.
- Bányai, E. I., & Hilgard, E. R. (1976). A comparison of active-alert hypnotic induction with traditional relaxation induction. *Journal of Abnormal Psychology*, 85, 218–224.
- Bányai, E. I., Zseni, A., & Forenc, T. (1993). Active-alert hypnosis in psychotherapy. In J. W. Rhue, S. J. Lynn & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (pp. 271–290). Washington, DC: American Psychological Association.
- Barabasz, A. F., & McGeorge, C. M. (1978). Biofeedback, mediated biofeedback and hypnosis in peripheral vasodilation training. *American Journal of Clinical Hypnosis*, 21, 28–37.
- Barber, T. X., & Calverley, D. S. (1963). Toward a theory of hypnotic behavior: Effects on suggestibility of task motivating instructions and attitudes toward hypnosis. *Journal of Abnormal and Social Psychology*, 67, 557–565.
- Barnier, A. J., & Council, J. R. (2010). Hypnotizability matters: The what, why and how of measurement. In S. J. Lynn, J. W. Rhue & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (2nd ed., pp. 47–77). Washington, DC: American Psychological Association.
- Barnier, A. J., & McConkey, K. M. (1996). Action and desire in posthypnotic responding. *International Journal of Clinical and Experimental Hypnosis*, 44, 120–139.
- Barnier, A. J., & McConkey, K. M. (1998). Posthypnotic responding: Knowing when to stop helps keep it going. *International Journal of Clinical and Experimental Hypnosis*, 46, 204–219.
- Barnier, A. J., & McConkey, K. M. (2001). Posthypnotic responding: The relevance of suggestion and test congruence. *International Journal of Clinical and Experimental Hypnosis*, 49, 207–219.
- Benham, G., & Younger, J. (2008). Hypnosis and mind-body interactions. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 393–435). Oxford: Oxford University Press.
- Bernheim, H. (1888/1973). *Hypnosis and suggestion in psychotherapy: A treatise on the nature and uses of hypnotism*. Northvale, NJ: Jason Aronson Inc.
- Brandon, S., Boakes, J., Glaser, D., Green, R., MacKeith, J., & Whewell, P. (1997). Reported recovered memories of child sexual abuse: Recommendations for good practice and implications for training, continuing professional development and research. *Psychiatric Bulletin*, 21, 663–665.
- Capafons, A., & Mendoza, M. E. (2010). "Waking hypnosis" in clinical practice. In S. J. Lynn, J. W. Rhue & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (2nd ed., pp. 293–317). Washington, DC: American Psychological Association.
- Cautela, J. R. and Kearney, A. J. (1986). *The covert conditioning handbook*. New York: Springer.
- Cautela, J. R., & McCullough, L. (1978). Covert conditioning: A learning-theory perspective on imagery. In J. L. Singer & K. S. Pope (Eds.), *The power of human imagination* (pp. 225–254). New York: Plenum Press.
- Cheek, D. B., & LeCron, L. M. (1968). *Clinical hypnotherapy*. New York: Grune & Stratton.
- Damaser, E., Whitehouse, W. G. Orne, M. T. Orne, E. C., & Dinges, D. F. (2010). Behavioral persistence in carrying out a posthypnotic suggestion beyond the hypnotic context: A consideration of the role of demand characteristics. *International Journal of Clinical and Experimental Hypnosis*, 58, 1–20.
- Dikel, W., & Olness, K. (1980). Self-hypnosis, biofeedback, and voluntary peripheral temperature control in children. *Pediatrics*, 66, 335–340.
- Edmonston, W. E. (1991). *Hypnosis and relaxation: Modern verification of an old equation*. New York: Wiley.
- Evans, F. J. (1991). Hypnotisability: Individual differences in dissociation and the flexible control of psychological processes. In S. J. Lynn & J. W. Rhue (Eds.), *Theories of hypnosis: Current models and perspectives* (pp. 144–168). New York: Guilford Press.
- Fisher, S. (1954). The role of expectancy in the performance of posthypnotic behaviour. *Journal of Abnormal and Social Psychology*, 49, 503–507.
- Flammer E., & Alladin, A. (2007). The efficacy of hypnotherapy in the treatment of psychosomatic disorders: Meta-analytical evidence. *International Journal of Clinical and Experimental Hypnosis*, 55, 251–274.
- Fricton, J. R., & Roth, P. (1985). The effects of direct and indirect suggestion for analgesia in high and low susceptible subjects. *American Journal of Clinical Hypnosis*, 27, 226–231.
- Gauld, A. (1992). *A history of hypnotism*. Cambridge: Cambridge University.
- Gibbons, D. E. (1979). *Applied hypnosis and hyperemipria*. New York: Plenum Press.
- Gibson, H. B. (1991). Can hypnosis compel people to commit harmful immoral and criminal acts?: A review of the literature. *Contemporary Hypnosis*, 8, 129–140.
- Glass, L. B., & Barber, T. X. (1961). A note on hypnotic behavior, the definition of the situation and the placebo-effect. *Journal of Nervous and Mental Disease*, 132, 539–541.
- Gorassini, D. R., & Spanos, N. P. (1999). The Carleton Skill Training Program for Modifying Hypnotic Suggestibility: Original version and variations. In I. Kirsch, A. Capafons, E. Cardena-Buelna & S. Amigó (Eds.), *Clinical hypnosis and self-regulation: Cognitive-behavioural perspectives* (pp. 141–177). Washington DC: American Psychological Association.
- Gravitz, M. A. (1983). An early case of hypnosis used in the investigation of a crime. *International Journal of Clinical and Experimental Hypnosis*, 31, 224–226.
- Green, J., Barabasz, A., Barrett, D., & Montgomery, G. (2005). Forging ahead: The 2003 APA Division 30 Definition of Hypnosis. *International Journal of Clinical and Experimental Hypnosis*, 53, 259–264.
- Groth-Marnet, G., & Mitchell, K. (1998). Responsiveness to direct versus indirect hypnotic procedures. *International Journal of Clinical and Experimental Hypnosis*, 46, 324–333.
- Gruzelier, J. (1998). A working model of the neurophysiology of hypnosis. *Contemporary Hypnosis*, 15, 3–21.
- Hartland, J. (1971). *Medical and dental hypnosis and its clinical applications* (2nd ed.). London: Baillière Tindall.
- Haley, J. (1973). *Uncommon therapy: The psychiatric techniques of Milton H. Erickson, MD*. New York: Norton.
- Haley, J. (1993). *Jay Haley on Milton H. Erickson*. New York: Brunner/Mazel.
- Heap, M. (1995). A case of death following stage hypnosis: Analysis and implications. *Contemporary Hypnosis*, 12, 99–110.
- Heap, M. (2000a). A legal case of a man complaining of an extraordinary sexual disorder following stage hypnosis. *Contemporary Hypnosis*, 17, 143–149.

- Heap, M. (2000b). The alleged dangers of stage hypnosis. *Contemporary Hypnosis*, 17, 117–126.
- Heap, M. (2006). Assessing allegations of sexual assault during hypnosis and related procedures. *Australian Journal of Clinical and Experimental Hypnosis*, 34, 41–54.
- Heap, M. (2008a). Foreword to D. Robertson, *The discovery of hypnosis: The complete writings of James Braid, the father of hypnotherapy* (pp. 2–3). UK: National Council for Hypnotherapy.
- Heap, M. (2008b). Hypnosis in the courts. In M. Nash & A. Barnier (Eds.), *Oxford handbook of hypnosis*. Oxford: Oxford University Press.
- Heap, M., & Aravind, K. K. (2002). *Hartland's Medical and Dental Hypnosis* (4th ed.). London: Churchill Livingstone/Harcourt Health Sciences.
- Hilgard, E. R. (1979). Divided consciousness in hypnosis: The implications of the hidden observer. In E. Fromm & R. E. Shor (Eds.), *Hypnosis: developments in research and new perspectives* (2nd ed., pp. 45–79). New York: Aldine.
- Hilgard, E. R. (1986). *Divided consciousness: Multiple controls in human thought and action* (expanded ed.). New York: Wiley.
- Holroyd, J. (2003). The science of meditation and the state of hypnosis. *American Journal of Clinical Hypnosis*, 46, 109–208.
- Horton, J. E., & Crawford, H. J. (2004). Neurophysiological and genetic determinants of high hypnotisability. In M. Heap, R. J. Brown & D. A. Oakley (Eds.), *The highly hypnotisable person* (pp. 133–151). London: Brunner-Routledge.
- Huang, W.-C. (2008). Application of hypnosis in psychotherapy for the Chinese in Taiwan. *World Cultural Psychiatry Research Review*, January, 28–31. Available at <http://www.wcprr.org/pdf/03-01/2008.01.028031.pdf>
- Hull, C. (1933). *Hypnosis and suggestibility*. New York: Appleton Century Crofts.
- Isenberg, S. A., Lehrer, P.M., & Hochron, S. (1992). The effects of suggestion and emotional arousal on pulmonary function in asthma: A review and a hypothesis regarding vagal mediation. *Psychosomatic Medicine*, 54, 192–216.
- Jensen, M. P., & Patterson, D. R. (2008). Hypnosis in the relief of pain and pain disorders. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis* (pp. 503–533). Oxford: Oxford University Press.
- Kihlstrom J. F. (2008). The domain of hypnosis revisited. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 21–52). Oxford: Oxford University Press.
- Kirsch, I. (1997). Suggestibility or hypnosis: What do our scales really measure? *International Journal of Clinical and Experimental Hypnosis*, 45, 212–225.
- Kirsch, I., & Braffman, W. (1999). Correlates of hypnotisability: The first empirical study. *Contemporary Hypnosis*, 16, 224–230.
- Kirsch, I., & Lynn, S. J. (1998). Dissociation theories of hypnosis. *Psychological Bulletin*, 123, 100–115.
- Klein, K. B., & Spiegel, D. (1989). Modulation of gastric acid secretion by hypnosis. *Gastroenterology*, 96, 1383–1387.
- Kroger, W. S. (1977). *Clinical and experimental hypnosis* (2nd ed.). Philadelphia: J. B. Lippincott Company.
- Lankton, S. (2008). An Ericksonian approach to clinical hypnosis. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 467–485). Oxford: Oxford University Press.
- Levitt, R. E., Aronoff G., Morgan C. D., Overley T. M., & Parrish M. J. (1975). Testing the coercive power of hypnosis: Committing objectionable acts. *International Journal of Clinical and Experimental Hypnosis*, 23, 59–67.
- Lichtenberg, P., Bachner-Melman, R., Ebstein, R. P., & Crawford, H. J. (2004). Hypnotic susceptibility: Multidimensional relationships with Cloninger's tridimensional personality questionnaire, COMT polymorphisms, absorption, and attentional characteristics. *International Journal of Clinical and Experimental Hypnosis*, 52, 47–72.
- Lynn S. J., Boycheva, E. and Barnes, S. (2008). To assess or not to assess hypnotic suggestibility? That is the question. *American Journal of Clinical Hypnosis*, 51, 213–239.
- Lynn, S. J., Das, L. S., Hallquist, M. N., & Williams, J. C. (2006). Mindfulness, acceptance, and hypnosis: Cognitive and clinical perspectives. *International Journal of Clinical and Experimental Hypnosis*, 54, 143–166.
- Lynn, S. J., Meyer, E., & Shindler, K. (2004). Clinical correlates of high hypnotisability. In M. Heap, R. J. Brown & D. A. Oakley (Eds.), *The highly hypnotisable person* (pp. 187–212). London: Brunner-Routledge.
- Lynn S. J., & Rhue J. W. (Eds.) (1991). *Theories of hypnosis: Current models and perspectives*. New York: Guilford Press.
- Lynn, S. J., Rhue, J. W., & Kirsch, I. (Eds.) (2010). *Handbook of clinical hypnosis* (2nd ed.). Washington, DC: American Psychological Association.
- Lynn, S. J., Weekes, J. R., Matyi, C. L., & Neufield, V. (1988). Direct versus indirect suggestions, archaic involvement, and hypnotic experience. *Journal of Abnormal Psychology*, 97, 296–301.
- McGeown, W. J., Mazzoni, G., Venneri, A., & Kirsch, I. (2009). Hypnosis decreases anterior default mode activity. *Consciousness and Cognition*, 18, 848–855.
- McHugh, P. R., Lief, H. I., Freyd, P. P., & Fetkewicz, J. M. (2004). From refusal to reconciliation: Family relationships after an accusation based on recovered memories. *Journal of Nervous and Mental Diseases*, 192, 525–531.
- Milgram, S. (2004). *Obedience to authority: An experimental view*. London: Pinter & Martin Ltd. (Original work published 1974)
- Montgomery, G. H., DuHamel, K. N., & Redd, W. H. (2000). A meta-analysis of hypnotically induced analgesia: How effective is hypnosis? *International Journal of Clinical and Experimental Hypnosis*, 48, 138–53.
- Moore, M., & Tasso, A. F. (2008). Clinical hypnosis: The empirical evidence. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis* (pp. 697–725). Oxford: Oxford University Press.
- Morgan, A. H. (1973). The heritability of hypnotic susceptibility in twins. *Journal of Abnormal Psychology*, 82, 55–61.
- Nash, M. R., & Barnier A. J. (Eds.). (2008). *The Oxford handbook of hypnosis: Theory, research and practice*. Oxford: Oxford University Press.
- Oakley, D. A., & Halligan, P. W. (2010). Psychophysiological foundations of hypnosis and suggestion. In S. J. Lynn, J. W. Rhue & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (2nd ed., pp. 79–117). Washington, DC: American Psychological Association.
- Orne, M. T., & Evans, F. J. (1965). Social control in the psychological experiment: Antisocial behavior and hypnosis. *Journal of Personality and Social Psychology*, 1, 189–200.
- Patterson, D. R., Jensen, M. P., & Montgomery, G.H. (2010). Hypnosis for pain control. *Handbook of clinical hypnosis* (2nd ed., pp. 521–549). Washington, DC: American Psychological Association.
- Piccione, C., Hilgard, E. R., & Zimbardo, P. G. (1989). On the stability of measured hypnotisability over a 25-year period. *Journal of Personality and Social Psychology*, 56, 289–295.
- Pinnell, C. M., & Covino, N. A. (2000). Empirical findings on the use of hypnosis in medicine: A critical review. *International Journal of Clinical and Experimental Hypnosis*, 48, 170–194.

- Salas, C., & Salas, D. (1996). Testing the claims of mesmerism. *Skeptic*, 4(3), 66.
- Schulze, W. (undated). General remarks about hypnosis. European Society of Hypnosis. Retrieved May 12, 2010, from http://www.esh-hypnosis.eu/index.php?folder_id=11&file_id=0
- Spanos, N. (1991). A sociocognitive approach to hypnosis. In S. J. Lynn & J. W. Rhue (Eds.), *Theories of hypnosis: Current models and perspectives* (pp. 324–361). New York: Guilford Press.
- Spanos, N. P., Cross, W. P., Menary, E. P., & Smith, J. (1988). Long term effects of cognitive skill training for the enhancement of hypnotic susceptibility. *British Journal of Experimental and Clinical Hypnosis*, 5, 73–78.
- Spanos, N. P., Menary, E. P., Brett, P. J., Cross, W. P., & Ahmed, Q. (1987). Failure of posthypnotic responding to occur outside the experimental setting. *Journal of Abnormal Psychology*, 96, 52–57.
- Spiegel, D. (2008). Intelligent design or designed intelligence? Hypnotizability as neurobiological adaptation. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 179–199). Oxford: Oxford University Press.
- Spiegel, H. (2007). The neural trance: A new look at hypnosis. *International Journal of Clinical and Experimental Hypnosis*, 55, 387–410.
- St Jean, R. (1978). Posthypnotic behavior as a function of experimental surveillance. *American Journal of Clinical Hypnosis*, 15, 250–255.
- Van Gorp, W. G., Meyer, R., & Dunbar, K. (1985). The efficacy of direct versus indirect hypnotic induction on reduction of experimental pain. *International Journal of Clinical and Experimental Hypnosis*, 33, 319–328.
- Wadden, T. A., & Anderton, C. H. (1982). The clinical use of hypnosis. *Psychological Bulletin*, 91, 215–243.
- Wagstaff, G. F. (1981). *Hypnosis, compliance and belief*. Brighton: Harvester Press.
- Wagstaff, G. F. (1999). Hypnosis and forensic psychology. In I. Kirch, A. Capafons, E. Cardena-Buelna & S. Amigó (Eds.), *Clinical hypnosis and self-regulation: Cognitive-behavioral perspectives* (pp. 277–308). Washington, DC: American Psychological Association.
- Waterhouse, R. (2003). When the mind plays tricks: Observations on sexual abuse. *The Newsletter of the British False Memory Society*, 11, 17–18.
- Waxman, D. (1989). *Hartland's medical and dental hypnosis* (3rd ed.). London: Ballière Tindall.
- Weitzenhoffer, A. M., & Hilgard, E. R. (1959). Stanford Hypnotic Susceptibility Scale: Forms A and B. Palo Alto, CA: Consulting Psychologists Press.
- Weitzenhoffer, A. M., & Hilgard, E. R. (1962). Stanford Hypnotic Susceptibility Scale: Form C. Palo Alto, CA: Consulting Psychologists Press.
- Whorwell, P. J., Houghton, L. A., Taylor, E. E., & Maxton, D. G. (1992). Physiological effects of emotion: Assessment by hypnosis. *Lancet*, 340, 69–92.
- Wickramasekera, I. (1993). Assessment and treatment of somatization disorders: The high risk model of threat perception. In J. W. Rhue, S. J. Lynn & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (pp. 587–621). Washington, DC: American Psychological Association.
- Woody, E. Z., & Barnier, A. J. (2008). Hypnosis scales for the twenty-first century: What do we need and how should we use them? In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis: Theory, research and practice* (pp. 255–281). Oxford: Oxford University Press.
- Yapko, M. D. (1990). *Trancework: An introduction to the practice of clinical hypnosis*. New York: Bruner/Mazel.