
ORIGINS OF THE SECTION OF HYPNOSIS AND PSYCHOSOMATIC MEDICINE – PART 1

DAVID KRAFT

Private practice, London, UK

ABSTRACT

In 1978, after a series of discussions with the council of the Royal Society of Medicine (RSM), Dr David Waxman, along with a number of his esteemed colleagues, set up a new section of the society, marking the beginning of a new era in which, to some extent, hypnosis was viewed as an important adjunctive tool in psychological medicine. This paper, the first of two, begins by outlining some of the major developments in the use of hypnosis for pain management during World War II. Further uses of clinical hypnosis are then explored, focusing on its application in the hospital setting as well as in clinical practice. Particular attention is given to developments in behaviour psychology in the 1950s and 1960s. The author then outlines the major advances in hypnosis research, outlining clinical tools and theories such as scales of hypnotic susceptibility, role theory, expectation and the state/non-state debate. The thirty years prior to the setting up of the new section, was rich in both clinical application and academic research, and it was perhaps inevitable that a section devoted to the topic should be formed.

Key words: Royal Society of Medicine, Section of Hypnosis and Psychosomatic Medicine

Since 1978, the Section of Hypnosis and Psychosomatic Medicine, at the Royal Society of Medicine (RSM), has run meetings which have educated and informed doctors, dentists, allied health professionals, psychologists and the public on the theories and practices of hypnosis. It has provided a platform for the presentation and discussion of hypnosis theory research and clinical practice. The purpose of this paper is to trace the main developments in theory and practice which precipitated a need for establishing hypnosis as a modality in its own right and to form a section devoted to the subject at the RSM. The author touches briefly on nineteenth-century practice, but then outlines the use of hypnosis in World War II; in addition, developments in theory and practice from the 1950s up until the setting up of the section in 1978, are discussed.

INTRODUCTION

One of the major applications of the use of hypnosis was in the treatment and management of pain. Indeed, over the years, it has been well documented that hypnosis is extremely effective in this role (Braid, 1847; Esdaile, 1957; Barber, 1963; Hilgard and Hilgard, 1975; Ewin, 1983; Evans, 1990; Barber, 1996; Patterson, 2010). In the 1820s and 1830s, Jules Cloquet (Cloquet, 1829), and then John Elliotson, largely in the 1840s (see Rosen, 1946), performed and subsequently documented a huge number of procedures using hypnosis as the sole anaesthetic (see

also Rosen, 1936). In addition, hypnosis was used as an adjunctive tool to reduce or eliminate pain pre- and post-operatively. The Scottish physician, James Esdaile, particularly between the period 1845 and 1851, documented over 300 cases in which he employed a technique which he called 'hypnoanaesthesia' (Esdaile, 1957). What is often overlooked was the fact that hypnosis undoubtedly had a positive effect on the autonomic nervous system as well as the immune system and, unlike many war operations at the time, many of his patients survived surgical procedure. These results compared favourably with many of his contemporaries who were forced to witness patients dying as a result of post-surgical infection, shock or haemorrhaging (Evans, 1990). However, during this period, ether, in 1846, and then, a year later, chloroform had begun to be employed; by the 1860s, chemical anaesthesia had almost entirely replaced hypnosis in both medical and dental domains (Collins, 1976).

WORLD WAR II

During World War II, actors, singers, cabaret performers, comedians and stage hypnotists entertained the troops in order to boost morale. Many army medics and dental surgeons who witnessed these shows began to learn about hypnosis and use it to help their patients on the front line and in army hospitals (Walters, 1958). However, although there were a number of research papers at the time recommended hypnosis as a valuable tool for combat neurosis (Miller, 1940; Kardiner, 1941), a survey of the literature indicates that, fairly early in the war, there was a general mistrust of this technique (Fisher, 1943). Unfortunately, doctors tended to use barbiturate drugs – in particular, sodium amytal – and this led to further complications including unwanted sleepiness, confusion, nausea and dizziness (Hoch, 1944); and, in many cases its use did not help to resolve the underlying psychological disturbance responsible for the fear. The consensus at the time was that soldiers suffering from 'battle neurosis' should be allowed to express their thoughts through free association (Barbara, 1948) and that this would help them to bring repressed stimuli to their consciousness, thus reducing unwanted fear and panic symptoms (Watkins, 2000). Pentothal and sodium amytal were sometimes used as an adjunct in order to bring these temporary amnesias to the fore (Hadfield, 1942; Fisher, 1943; Barbara, 1948) but, although hypnosis was recommended as a catalyst for therapeutic change, it was not used across the board. Perhaps, a reason for this was that this psychotherapeutic technique, which combined psychodynamically oriented psychotherapy with hypnosis, required careful handling, and most of the physicians had not had any training in this area. For example, Hadfield (1942) pointed out that soldiers not only required a mechanical release of repressed emotion, but they also needed a programme to help them re-adjust and re-associate. Nevertheless, compared to the use of barbiturate drugs, the use of hypnosis and free association was a more subtle and sophisticated *modus operandi*.

It is for this reason that many doctors preferred to use barbiturate drugs, particularly sodium amytal, in the treatment of trauma. There were several other barriers which physicians dealing with shell shock experienced during the war. The combined use of free association with hypnosis was a relatively new concept and required specific training in psychotherapy. Indeed, well into the 1960s, many psychologists had difficulty establishing a merging of these two modalities (Kraft, 1969a). Another problem was that, in the military, physicians were officers. Soldiers, because of their training, perceived a very definite rank hierarchy in the consulting room. This made any positive transference relationship almost impossible; and, although this

perceived authority often had a beneficial effect on the success of a formal induction, many soldiers felt as though they were being treated by someone who was partially responsible for their present predicament (Altman et al., 1942). In turn, this had a deleterious effect on two important therapeutic factors – namely trust and rapport – and this led to a degree of resistance. Nevertheless, hypnosis was used for the treatment of combat neurosis, albeit by a few well-informed physicians, and a number of cases have shown its efficacy (Fischer, 1943; Watkins, 1949; Watkins, 2000), particularly when employed in conjunction with a psychodynamic investigation. Moreover, hypnosis was employed successfully before transporting patients to the hospital: this meant that the journey became much more tolerable for them. In addition, hypnosis was also used as a sole anaesthetic in prisoner of war camps – both for surgery and dental operations (Sampimon and Woodruff, 1946).

1950–1978: CLINICAL HYPNOSIS

In the 1950s, some physicians and dentists continued to use hypnosis in clinical practice. At the same time, however, some hypnotists all over the country were performing in and developing more and more elaborate stage hypnosis shows. The result of this was that not only were people being put at risk, but also this undoubtedly affected the position of hypnosis as a credible adjunctive tool in psychological medicine (Waxman, 1975; 1981). In 1952, a British Act of Parliament was passed. In clause 2.1, the following was stated:

No person shall give an exhibition, demonstration or performance of hypnotism on any living person at or in connection with an entertainment to which the public are admitted, whether payment or otherwise, at any place unless...the controlling authority have authorized that exhibition.

(Hypnotism Act, 1952)

Fortunately, the act also stated clearly that hypnosis should continue to be demonstrated and utilized for scientific and research purposes – particularly when relating to the treatment of 'mental and physical disease'. Informed experts of the day were presumably concerned that hypnosis, in the wrong hands, could have disastrous implications. Indeed, the following year, in November 1953, the Psychological Medicine Group Committee of the British Medical Association formed a sub-committee to investigate and distinguish between ethical and unethical applications of hypnosis (BMA Working Party, 1955). The report, which was published in 1955, included a number of important guidelines for use – namely that hypnosis should only be employed by a doctor, dentist or suitably trained psychologist. Further, nurses could use the technique when supervised by a medical practitioner – interestingly, the RSM Section of Hypnosis still upholds these principles in the present day. Since then, however, public stage hypnosis performances have continued and there have been a number of reports which have illustrated the deleterious effects of stage hypnosis on the public (Echterling and Emmerling, 1987; Heap, 2000).

Interest in hypnosis grew significantly in the 1950s in medicine, dentistry and in psychology, the latter of which was a fast-growing discipline (Kraft and Naish, 2020). It was, of course, in the 1950s that Theodore Barber demonstrated that hypnosis significantly reduced pain for highly susceptible subjects (Barber, 1959), findings which reflected the work of Weitzenhoffer

(1953), not to mention the observations of doctors who had performed operations during military conflict (Raginsky, 1948; Wood and Hirschberg, 1994). The attention that was given to hypnosis as a scientific discipline was echoed in its application in medical surgery. For example, Ecker (1959) reported a case of an eighteen-year-old woman who required a long emergency operation to suture extensive lacerations on her face. On arrival to the hospital, the girl had recently eaten and the prospect of having a local anaesthetic significantly exacerbated her anxiety. The author described a successful surgical treatment of this young woman using hypnosis – and special place imagery – as the sole anaesthetic.

Hypnosis was also being employed effectively in order to reduce anxiety and tension in connection with thoracotomy for heart disease (Marmer, 1959). The London physician, Dr AA Mason (1955), reported a successful plastic surgery operation on a lady's breasts, as well as the extraction of two impacted wisdom teeth – again, this was done using only hypnosis. In all the cases he reported, there were legitimate reasons for employing this technique as a sole anaesthetic. Hypnosis was also used in conjunction with analgesics in order to reduce anticipatory fear and anxiety. For example, in childbirth, hypnosis was used in conjunction with pethidine (Abramson and Heron, 1950). A senior registrar at St Helier Hospital in Surrey, A. M. Michael (1952), produced an excellent set of results in relation to 30 women in labour – here, the majority of patients were able significantly to reduce pain and anxiety before, during and after giving birth. Further applications for women's health were reported in the 1950s, including the treatment of delayed menstruation, functional uterine bleeding, pseudocyesis (false pregnancy), amenorrhoea, dyspareunia, infertility, the menopause and psychogenic leucorrhoea (Kroger, 1953; Ambrose and Newbold, 1957).

In London, Goldie (1956) described the use of hypnosis in a busy casualty department particularly for dental extractions, suturing lacerations, and when dealing with fractures and dislocations. Importantly, because hypnosis aided recovery, it was evident that his intervention had the additional advantage of reducing treatment costs and the number of days patients were required to stay in hospital. A registrar at the Maudsley Hospital at the time, Goldie used hypnosis successfully in a busy casualty department, and described a number of cases in which this technique was employed successfully. On some occasions, hypnosis was used for fracture cases which would otherwise have been given a chemical anaesthetic. Sometimes, a general anaesthetic could not be given or was not available; alternatively, hypnosis was necessary in order to reduce tension and anxiety before safely proceeding with the intervention. For example, hypnosis was used in order to place a patient's fractured wrist in the correct position for an X-ray. Nurses also gave comforting hypnotic suggestions to children before administering an injection; and, for all ages, suggestions were given to reduce pain associated with incised abscesses and sutured wounds. In the hospital setting, patients reported significant reductions in, or the complete elimination of pain. Further uses included various procedures classified under five headings—namely, incisions, removal of a foreign body, suturing, orthopaedic fracture dislocations and reductions, and nail bed avulsions.

In dentistry, hypnosis was being used more and more for clinical procedures. It was employed as a sole means of anaesthesia in cases in which there was a legitimate reason for not having a local anaesthetic (Crasilneck et al., 1956); but, more commonly, it was utilized as an adjunctive tool to reduce pre- and post-operative anxiety (Bodecker et al., 1958), control haemorrhaging, reduce salivation (Stolzenberg, 1955), minimize pain and manage dental fear (Staples, 1958).

A BRIEF HISTORY OF HYPNOSIS IN MODERN-DAY PSYCHIATRY AND CLINICAL PSYCHOLOGY

It is important to mention here that, since the end of World War II, a number of important pieces of literature also shaped the emergence of hypnosis as a powerful adjunctive tool in psychological medicine; and, apart from the various sister societies, which undoubtedly helped to lift the status of hypnosis amongst medics, dentists and psychologists, it is important to survey some of the key academic studies of the post-war period. One of the most important psychological movements of the 1950s and 1960s was behavioural psychology. Pavlov's physiological research on classical and operant conditioning led to a great deal of further investigation into 'hypno-psychotherapy' (Wolpe, 1958; Hoskovec, 1969; Freedberg, 1973). In the 1920s, Platonov used hypnosis in order to reduce the pain and ease childbirth (see Platonov and Chestopal, 1925; Haber, 2013); indeed, his work developed and evolved over several decades (Platonov, 1960). His treatment, using hypnosis as an anaesthetic or analgesic, was so impressive that it was taken on by Velvoski who, using the principles of Pavlovian conditioning, was able to pair pain and fear with relaxation and this had remarkable effects on reducing anxiety during labour (see Haber, 2013). Clark L. Hull, in the United States, published a series of studies on hypnosis and suggestibility under controlled conditions in the laboratory (Hull, 1933). It was he who initially established the main differences between hypnosis and sleep (Hull, 1933). He postulated that hypnosis was an inter-personal construct which involved a dynamic interplay between expectation, motivation and prestige suggestion, pre-empting the non-state theories of later psychologists (White, 1941; Sarbin, 1950; Kirsch, 2005). The importance of his work, however, was that hypnosis was beginning to be tested scientifically, thus establishing it both as a phenomenon and therapeutic tool in medical, dental and psychological domains.

Behaviour therapy, which was emerging as a clinical discipline in the 1950s, essentially utilizes the principles of behaviourism in order to change thought patterns and actions of individuals in treatment. The basic principle behind behaviour therapy was to encourage clients' adaptive behaviour by reinforcement and decrease maladaptive behaviours by extinction or punishment. Behaviour therapy at the time could be divided into three groups. Wolpe's group, based mainly in South Africa, researched eclectic and wide-ranging theoretical models which were tested and evaluated in clinical trials. Skinner's group focused on operant conditioning and his experiments and observations centred on interventions which utilized 'contingency management' – for example, token economy and behavioural activation. In the UK, Eysenck, very early on, realized that maladaptive behaviour was a result of a dynamic interplay of social, biological and behaviour characteristics. However, all three schools were highly influential in behaviour research and in clinical practice all over the world. There were a number of clinicians at the time who were able to use hypnosis in order to accelerate the effects of the behaviour therapy (Kraft, 1972; Wachtel, 1977).

At present, clinicians and researchers are still struggling to get hypnosis accepted as a useful and cost-effective treatment modality. But, in the 1950s, hypnosis went hand in hand with behaviour therapy in clinical practice and has since influenced decades of research and clinical practice under the remit of integrative therapy or cognitive behaviour therapy. Isaac Marks reported the successful treatment of a huge range of individuals suffering from phobic anxiety (Marks, 1969). Interestingly, the main principle behind his approach to systematic

desensitization was the pairing of an anxiety-provoking situation with relaxation, a technique which Wolpe described as 'reciprocal inhibition', although one could just as adequately use terms employed in behaviour research including 'counter-conditioning', 're-learning', 'de-conditioning' or 'habituation'. In this process, the individual collated a graded hierarchy of potentially anxiety-provoking scenarios and the patient worked through each one thus reducing his or her anxiety. Marks described the use of imagery, the relaxation of muscle groups (Wolpe and Lazarus, 1966) and autogenic training (Schultz and Luth, 1959), techniques which are inextricably interconnected with, or akin to, hypnosis. Systematic desensitization was a technique that could be used *in vivo* or *in vitro* as appropriate, and clinicians discovered that hypnosis was a powerfully effective adjunctive treatment for a range of fears and anxieties (Lazarus, 1961; Cautela, 1966a; Marks et al., 1968; Kraft, 1969b).

Of course, this pairing process could be utilized to get rid of unwanted behaviours. Using the principles of Watson and Reyner (1920), who demonstrated a procedure which showed that pairing an aversive stimulus with a neutral object led to withdrawal, researchers in the 1950s and 1960s, began to use aversion therapy in treatment. For example, Raymond (1956) successfully treated a fetishist by pairing this unwanted behaviour with a chemical aversion – namely the emetic drug apomorphine. Liberman (1968) also used apomorphine in the treatment of drug addiction. There ensued two further developments to this approach. The first was electrical aversion which paired the unwanted behaviour with an electrical shock to the arm: this technique was successful in a number of cases of maladaptive behaviours, including alcoholism (Maguire and Vallance, 1964), compulsive eating (Wijesinghe, 1973), and sexual deviation (Feldman, 1966). The second development was the use of an aversion in the imagination – a technique known as covert sensitization – and this became more prevalent in the 1960s. Clinicians were able to obtain excellent results by encouraging their patients to pair the unwanted behaviour with an unpleasant stimulus in hypnosis (Cautela, 1966b, 1967; Anant, 1967; Kraft, 1967; Seager, 1969). The unpleasant stimulus was, normally, feeling nauseous or sick. Hypnosis seemed to accelerate and increase the effectiveness of behaviour therapy. Further examples of treatment strategies which, at the time, were used in conjunction with hypnosis included flooding techniques (Horowitz, 1970), guided imagery (Ambrose, 1952), positive reinforcement and ego strengthening (Kaffman, 1968), thought stopping (Strupp, 1967), revivification (Schneck, 1960), role play and rehearsal (August, 1959), progressive muscle relaxation (Naruse, 1965), assertive training (Hartman, 1969), anchoring (Hirschberg, 1958), encouraged abreaction (Conn, 1953), hypnoanalysis (Schneck, 1952; Fromm, 1968), cognitive re-structuring (Rosen, 1960), imagery conditioning (Kroger and Fezler, 1976), as well as in the combined use of psychodynamically oriented psychotherapy with behaviour therapy (Kraft, 1969a; Kraft, 1972). In clinical practice, however, these techniques were often combined in order to produce an eclectic mix of approaches, tailor-made to suit the client's specific needs.

In the same year as the publication of Wolpe's seminal work (Wolpe, 1958), the American Medical Association approved the use of hypnosis in medicine as opposed to being a complementary treatment (American Medical Association, 1958). Psychology was just beginning to emerge as a subject in its own right, rather than a sub-category under the remit of social science. Doctors, nevertheless, had begun to utilize the principles of the early behaviourists in order to effect changes in patients' behaviour. These principles were

set out in a newly established journal entitled *Behaviour, Research and Therapy*, which was first published in 1963. Its first editor-in-chief was Professor Hans Eysenck who, in his initial editorial (Eysenck, 1963), spoke of a growing interest in the application of learning theory to the treatment of maladaptive behaviour, the main conception of which focused on the belief that behavioural disorders were largely learned responses. In the introduction to this new journal (Eysenck, 1963), he mentioned, in particular, therapeutic techniques such as aversion therapy, de-conditioning, reciprocal inhibition, systematic desensitization and pairing – behavioural techniques which are inextricably linked to hypnosis. And there ensued a huge number of papers which outlined the use of behavioural therapy with or without the use of hypnosis (Rachman, 1965; Cautela, 1966c; Wolpin and Raines, 1966; Kraft, 1970). In addition, cognitive-behavioural theories on hypnosis were beginning to become more and more prominent, particularly in the United States (Barber et al., 1974). It was evident that the behaviourists were interested and effective in employing symptom removal techniques; however, more resistant patients required a combination of uncovering techniques and behaviour therapy. Furthermore, some innovative therapists at the time combined the use of behaviour therapy with psychoanalytically oriented psychotherapy (Wachtel, 1977; Kraft 1978).

THEORIES IN HYPNOSIS RESEARCH C.1950–1978

In the 1950s and 1960s, psychologists began to formulate theories relating to hypnosis as a phenomenon: scientists, using observation and experimental designs, re-visited hypnosis theory and formulated ideas relating to the essential ingredients of hypnosis as well as its function as a clinical tool. Psychologists, from various schools of thought, deliberated on definitions. The key questions at the time were 'What is hypnosis?', 'Is it a state of consciousness?' and 'Is it real?'. During the 1950s and 1960s, but also in the 1970s, various definitions were hypothesized. Coe and Sarbin (1966), using role theory, found that role-taking aptitude and role-expectation were important predictors of hypnotic responsiveness. It was during this period that Theodor Barber questioned the state theorists' view that hypnosis was an altered 'state' of consciousness and whether hypnotic behaviour was a function of task motivation (Barber and Calverley, 1962, 1964; Barber, 1965).

Weitzenhoffer postulated that hypnosis was a form of enhanced suggestibility which is exerted on another person through the agency of suggestion: this research indicated that hypnosis was a social phenomenon. In hypnosis, he pointed out, fairly straightforward verbal suggestions can lead participants to perceive alterations in their sense of agency (Weitzenhoffer, 1974) – that is to say, they experience actions which occur without any effort or conscious volition. Weitzenhoffer believed that this subjective component was essential in order to categorize an experience as being hypnotic (Orne, 1967; Weitzenhoffer, 1974).

MEASUREMENTS OF HYPNOTIC SUSCEPTIBILITY

Measuring suggestibility is helpful for developing an understanding of the intrinsic qualities of hypnosis, and it was in the 1950s and early 1960s that instruments were devised for this task. Earlier scales mainly concentrated on the measurement of depth of trance, and researchers focused on the various behavioural and physiological changes that sometimes occurred (Braid,

1843; Friedlander and Sarbin, 1938). However, these scales were superseded by hypnotic suggestibility scales which were tested and re-tested in the experimental setting.

The Stanford Hypnotic Susceptibility Scale was first devised by Weitzenhoffer and Hilgard (1959). Forms A and B (SHSS: A,B) emphasized motor and cognitive responses to suggestions and had test–retest reliability; however, the instrument was not sensitive to individuals' differences. Very quickly, Shor and Orne (1962) developed the Harvard Group Scale of Hypnotic Susceptibility (HGSHS: A) which, like the Stanford Scale, had 12 items of progressive difficulty. This scale was useful when researchers needed to maintain a pool of subjects of varying suggestibility or when categorizing a large sample of participants (Weitzenhoffer, 1974). Further emendations were made to the existing Stanford and Harvard Scales. For example, the Stanford Scale, Form C (SHSS: C) (Weitzenhoffer and Hilgard, 1962), included more difficult cognitive suggestions – for example, a hallucination task and an age-regression task. Indeed, this version of the scale is more robust compared to some other existing scales, and has thus served as a standard measure for many years (Kihlstrom, 1985). These tests were being developed and refined.

The Stanford Profile Scales of Hypnotic Susceptibility (SPSHS), available in two parallel forms (I and II) allowed for the possibility of assessing individuals' strengths and weaknesses. However, some of these scales took a great deal of time to implement. For example, it would take researchers more or less three hours to complete HGSHS: A and SHSS:C, and this was not easy to administer in the experimental domain, let alone in clinical practice. Importantly, and perhaps with this in mind, Spiegel (1977) developed the Hypnotic Induction Profile (HIP) which consisted of an eye-roll suggestion followed by a brief induction. The Stanford Hypnotic Clinical Scale was also introduced in two forms – one for adults and the other for children (Morgan and Hilgard, 1978–1979a; Morgan and Hilgard 1978–1979b). These scales correlated highly with SHSS and required only 20 minutes to administer.

The Stanford approach tended to focus on objectively observable behavioural response. It was, due to the nature of visualization, only a question of time before psychologists investigated creative imagination as an important predictor of hypnotic suggestibility, as well as other subjective measures. One scale which addressed this was the Creative Imagination Scale (CIS) (Wilson and Barber, 1977). This scale included ten items similar to the Stanford Scales. The researchers indicated that existing scales were too authoritarian and implied the experimenter or hypnotist had control of their subjects. By contrast, this scale provided a platform by which subjects could produce hypnotic phenomena themselves: it could also be administered to an individual as well as groups. Interestingly, the scale could be given with or without an induction. The Creative Imagination Scale was shown to have test–retest reliability and was useful in both experimental studies of the time and in the clinical setting.

THE DEVELOPMENT OF HYPNOSIS THEORIES

Further developments relating to psychological theories of hypnosis were reported in the academic literature during this period – proof enough, at least, that there were advances in hypnosis research since the nineteenth century. For example, Meares (1960), using the principles of psychoanalytic theory, postulated that hypnosis related to a situation in which the subject regressed from being a 'normal' adult, with its associated mental functioning,

to processing stimuli on an archaic level (Waxman, 1989). Meares' hypothesis was that, in hypnosis, one activates one's 'primitive self' which has a reduced ability to evaluate critically ideas and concepts. The essence of this approach, labelled 'atavistic theory', was that some subjects returned to a more primitive form of mental functioning during hypnosis – presumably, this involved an increase in acceptance, thus reducing resistance and accepting suggestion (Meares, 1960).

In the late 1950s and early 1960s, however, neurophysiological theories on hypnosis changed the ball game for many psychologists. Barry Wyke, of the Royal College of Surgeons in the UK (Wyke, 1957, 1960) found evidence to support the view that there were changes of electroencephalographic (EEG) readings during hypnosis. In the late 1950s, Hernández-Peón (1959) pointed out that the therapist's voice had an effect on the limbic system: thus, calming suggestions of relaxation had the effect of reducing an individual's awareness of the external environment while other sources of sensory input were blocked. Importantly, it was discovered that the reticular system in the central part of the brain stem was responsible for alertness and attention (Waxman, 1989). During an induction, activity in this reticular system is reduced. Wyke also found electroencephalographic evidence to show that there was a diminution of voltage during hypnosis, although there was little change in frequency – of course, we now know that hypnosis is inextricably linked to power in the theta band and changes in gamma activity (Jensen et al., 2015).

In the early to mid-1970s, researchers began to formulate theories related to hemispheric specificity and related this to our understanding of hypnosis. We learnt, from split brain studies, that each side of the brain had specific functions. For example, the right side of the brain, for right-handed people, was associated with skills such as art, music and creativity (Frumppkin et al., 1978; Gazzaniga and LeDoux, 1978). These studies were helpful for researchers in their understanding of the importance of creativity and imagination in hypnosis (Hilgard, 1970; Bowers, 1971) – particularly as visualization is so often utilized in both experimental as well as in the clinical setting – and that the right side of the brain was responsible for this. This research precipitated further investigations as to the individual differences between right-brain activity in lows and highs (see for example, De Pascalis et al., 1987).

STATE/NON-STATE DEBATE

Of course, one of the main controversies of experimental hypnosis was the state/non-state debate which was first introduced by theorists such as White (1941) and Sarbin (1950) and then revisited, for example, by Barber (1969) as well as Sheehan and Perry (1976). This debate continued well into the 1990s. Barber's extensive research (Barber, 1958, 1964; Barber et al., 1974; Spanos and Barber, 1974) led researchers to question the special status of hypnosis in consciousness, while Sarbin (1950) and Spanos' (1982) approaches led to the belief that hypnosis was a social phenomenon rather than being intrinsically physiological. E. R. Hilgard's (1974, 1976) 'neo-dissociation theory' was perhaps one of the most influential theories to support the view that hypnosis was a state – that is to say, one has a lack of awareness of volition and action in hypnosis.

Non-state theorists suggested that hypnosis was a goal-directed action which should be understood in terms of how the subject attempts to interpret their situation (Coe, 1973; Hilgard, 1975; Spanos, 1986). Other theorists in the 1970s considered hypnosis in terms of :

- the subject's expectation of how he thinks he should behave (Orne, 1979);
- deliberate imaginative strategies which bring about suggested effects (JR Hilgard, 1974);
- the subject's return to behavioural compliance or shamming (Wagstaff, 1977, 1981).

Even though the state theorists and non-state theorists seemed to differ on their view of the nature of hypnosis, there were two unifying factors – namely, imagination (Spanos and Barber, 1974; Fellows, 1986) and time distortion (Bowers, 1979).

A most important investigation which was influential from the late 1950s all the way through to the late 1970s was Orne's 'real-simulator' design in which low-hypnotisable subjects were asked to fake their 'hypnotic' experiences (Orne, 1959, 1979). The consensus was that hypnosis did not enable subjects to transcend 'normal' motivated, non-hypnotic performance on motor and cognitive tasks (Morgan, 1972; Wagstaff, 1988). And yet, this theory was developed in the 1980s and led to some interesting conclusions on some subjects' ability to use 'trance logic' (Nogrady et al., 1983).

PAIN RELIEF

Although hypnosis had been employed in its various forms throughout the nineteenth century for surgery – as a sole anaesthetic and as a means of reducing pain – very little empirical research had been done specifically on pain relief until the 1970s. Again, this was another controversy but, importantly, scientists were evaluating the credibility and suitability of hypnosis as a means of reducing pain. At the same time, researchers evaluated the neurophysiological processes involved in pain (Melzack and Wall, 1976), while others were beginning to explore the possibility that pain was a complex bio-psycho-physiological phenomenon which could be modified by reducing anxiety together with suggestions of relaxation (Weisenberg, 1977; Craig and Prkachin, 1978). Indeed, one's ability to reduce or eliminate pain depended on a number of factors one of which was hypnotisability (Barber et al., 1974). Highs, for example, were able more readily to use their imagination in order to help them reduce their pain (Hilgard, 1975) and, in addition, they could employ coping strategies and dissociative mechanisms more effectively compared to lows (Hilgard, 1975; Spanos, 1986). And this research paved the way to further investigation on pain in the experimental setting, including the use of measures such as cold-pressor pain (Hilgard and Hilgard, 1983) and through the application of Hilgard's 'hidden observer' technique (Hilgard and Hilgard, 1975).

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This paper has outlined the main developments in hypnosis theory and practice, post-war and up until the setting up of the Section in 1978, and has placed hypnosis within the context of behaviour, research and therapy. At present, the Section of Hypnosis and Psychosomatic Medicine continues to be an active section of the RSM and holds meetings and conferences at least three times a year. The section is a leading provider of postgraduate education in the field of hypnosis research and clinical practice.

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Correspondence to: David Kraft PhD, 10 Harley Street, London, W1G 9PF, UK

Phone: +44 (0)207 467 8564

Email: dmjkraftesq@yahoo.co.uk