

## **Part One**

*Hypnosis: The Fundamentals*

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# 1

## *Hypnosis: The Theory behind the Therapy*

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### **Introduction**

There seems to be a tendency for people using hypnosis therapeutically to be surprisingly uninformed about the science behind the process. There are doubtless a number of reasons for this, not least that a busy therapist will feel there is little time for keeping up to date with the latest research. This may be so, but imagine consulting a surgeon who said, “*Yes, I’ve got a vague idea of how the body works and I gather they have scanning and so on nowadays, but I just do what I picked up when I first started this. It seems to work for me!*” One would have to ask, “*But does it work for the patient; could it be made to work better?*”

Therapists who have ‘been around a while’ do actually have a reason for turning their backs on hypnosis research in the past; a few decades ago, that research appeared to be investigating a very different phenomenon from the one they used every day in their practices. As will be explained, the message coming from the laboratory seemed, in effect, to be that hypnosis was not ‘real’. Meanwhile the therapists were using these ‘unreal’ procedures and getting very real therapeutic effects – something was wrong somewhere!

Nevertheless, even from the seemingly uninviting scientific landscape of that era there were gems to be mined. For example, it was shown that merely instructing people to relax and imagine could produce quite convincing hypnotic effects. However, giving precisely the same instructions, but preceding them with the information that this was hypnosis, produced stronger effects (Kirsch, 1997). It was possible to draw a number of conclusions

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from this, including the observation that since simply speaking the word ‘hypnosis’ can hardly do anything very dramatic, the enhanced performance seemed unlikely to have involved any impressive change in brain state. A therapist may not be very concerned whether there is a change in brain state or not, but he or she should note that an important element in getting people to behave ‘hypnotically’ seems to lie in defining the situation as ‘doing hypnosis’, rather than in the precise instructions spoken. Many people starting to use hypnosis therapeutically try to learn so-called induction scripts verbatim, as if, like some necromancer’s conjuration, a single wrong word will bring catastrophe. Clearly this is untrue; whatever words work for the hypnotist should work for the clients – as long as they believe it is all in the cause of hypnotizing them. Even better of course is to choose words that are well suited to the particular client; that is where the skill lies, not in remembering a script.

### **Magic or Medicine?**

It has been mentioned above that hypnosis produces very real therapeutic effects – but does it? Many members of the general public attribute almost magical powers to hypnosis, and with expectation of that sort there is bound to be a significant placebo effect. Could it be the only effect? A conspiracy theorist might postulate that therapists deliberately ignore the science, because they believe that if simply saying ‘hypnosis’ makes things work better, then it is clearly a placebo. If that truth leaked out it would be like GP patients learning that a pill was only sugar; the magic would evaporate and the cure would cease to work. In fact therapists need have no fear, because good, laboratory based research has shown that hypnosis is more than just a placebo. One of the most impressive and effective uses of hypnosis is in the treatment of pain. Non-harmful pain can be produced in the laboratory, making it possible to research the impact of various forms of analgesic. One thing that can be done is to apply a pharmaceutically inactive cream, along with the message that it will help the pain: it does – clearly a placebo effect. The pain relief is due to the release of endorphins, which are endogenous morphine-like substances that block the neural pain signals. Naloxone is a morphine antagonist – a compound that prevents the action of morphine and thus permits pain to resurface. It has exactly the same effect on endorphins, so that the administration of Naloxone undermines the pain reducing qualities of a placebo cream. So much for placebos; what of hypnosis? Well, it turns out that Naloxone does not block the analgesic effects of hypnosis (Spiegel & Albert, 1983). Hypnosis must be something more than just a placebo.

Hopefully this brief introduction has convinced you that anyone intending to use hypnosis in a therapeutic setting should understand something of the science behind it. Theory should inform practice, just as clinical observation should be part of the seed-corn of research. It is hoped too that the preceding paragraphs offer a sufficient taster for you to see that the science need not be dry and dull; it offers the tantalizing promise of explaining the paradox that while hypnosis has none of the magic that many people imagine, in fact it seems capable of far more than many trained scientists once believed. So, now we must

make a very brief exploration of the path science has trodden and consider the vistas that have only recently started to unfold.

## **A Quick Look Backwards**

It is something of a tradition in books on hypnosis to begin with Franz Anton Mesmer (1734–1815); one could say that was when science first took an interest in hypnosis like processes. Mesmer practiced in Paris in the days before the French Revolution, and also the days before it was called hypnosis or even (subsequently in his honour) Mesmerism – it was then called magnetism. This episode of history is instructive because it picks up two themes raised in the introduction of this chapter. We need not be concerned with the finer details of Mesmer's theories; it is sufficient to say that he believed cures could be effected by correcting the flow of a kind of magnetic fluid through the body. Even in those days theory influenced therapy. Thus, when Mesmer became too popular to deal with so many people on a one to one basis, he devised a table-like drum called the Baquet, filled with iron and appropriate magnetic paraphernalia. A whole group of people could sit around this and receive the healing power simultaneously. Of course Mesmer's beliefs were wrong, as demonstrated very effectively and scientifically by a French royal commission, so eventually the theories as to what was going on evolved, as did the way in which they were implemented in therapeutic practice. That is as it should be: no one claiming that the final, 'right' answer has been found, but practitioners keeping up with current thinking. Unfortunately, even then the signs of a disconnection between science and practice were apparent. The French scientific team showed convincingly that magnetism was in no way involved in whatever was going on in these mesmeric sessions. Nevertheless, many people clung to the idea that the wonderful effects (that we would recognize today and call 'hypnotic') could all be attributed to the power of magnets. It was Thomas Wakley, founder of the journal *The Lancet*, who made a dummy magnet from wood (that could not be magnetic, of course) and showed that it was just as effective.

Wooden 'magnets' seem to be getting us back to the realm of placebos again – it is what you believe that counts. In Mesmer's day it was believed that recovery could not be attained without passing through a kind of internal struggle, referred to as the crisis. Mesmer's patients expected to have this experience, and they duly exhibited it. Fortunately for today's patients there is no such expectation, so they are spared that little episode. Nevertheless they still tend to follow expectations, and the fact that they do so, rather than just sticking to 'basic hypnotic behaviour', is something that science must explain. In fact, truth be told, there is little that could count as a basic behavioural hallmark of hypnosis. People simply do what they are told to do, so that a hypnotic induction involving relaxation just makes them look relaxed. Nothing much happens after that, unless a specific suggestion is given for a particular behaviour. This absence of a clear hypnotic hallmark was one of the factors which made it difficult for researchers to accept that hypnosis was in any sense a 'thing apart'; the brain, it was concluded, must be doing much the same as in many other situations.

## **Scepticism and Social Effects**

Before considering explanations for hypnotic behaviour, we must note that some of us do not exhibit any such behaviour at all. People vary in their responsiveness to hypnosis; some seem untouched by it, while others respond dramatically; most lie between the extremes. In research it is common to assess experimental participants, to get a measure of their responsiveness; to do this, hypnotic susceptibility scales are used. These comprise a series of graded suggestions that may or may not produce effects in the person being tested. The suggestions cover a range of potential experiences, for example motor effects such as *“Your arm is getting lighter and will begin to lift”* or sensory ones such as *“There is sugar dissolving on your tongue and it tastes sweet”*. People are rated by the proportion of the test items that ‘work’ for them. In the clinical field it is often considered a waste of valuable time to carry out a test on someone who is to be treated anyway, whether of high or low susceptibility. However, while a complete formal assessment may be inappropriate, using just one of the test items can give a helpful hint as to the sort of person being treated. Moreover, if there is any degree of ‘working’ this can be fed back to the patient as indicating that hypnosis really can ‘do things’; never miss the chance of enhancing the hypnosis with a good placebo effect! At the same time, note that the experienced practitioner does not permit the absence of an effect in the test to undermine the effectiveness of the treatment.

It will be observed that both the examples of test items given above could be faked; someone could lift their arm and say that it felt light, and they could claim to taste sugar when in truth they did not. This applies to all test items – if a non-susceptible subject wished, they could behave as if they were responsive to everything. We assume that they do not wish to fake it, and as with so many situations of human interaction, we take their responses at face value. However, this is a little unsatisfactory for science, where it is considered better to be sure. Psychology is the science most familiar with trying to research the hidden, subjective experience and finding objective handles by which we can gain some grasp of what is going on. An early researcher in this field was the American T. X. Barber (see e.g. Barber *et al.*, 1974) who used a hypnotic susceptibility test with two groups of people. One group had been conventionally hypnotized, but the other had not. Instead they had been exhorted to do the best they could in the series of tests they were about to be given; they were told that the tests were not hard, and if they didn’t make an effort the experiment would be a failure, which would be an embarrassment to the researcher. Clearly, this was rather pressuring (as was intended) and it may not be surprising to learn that the non-hypnotized group passed more of the hypnotic tests than the hypnotized group!

We have a good explanation for the pressured group’s performance – they faked it, because they thought they should. Now, science prefers parsimony; it does not like multiple, complicated explanations when one will do. So why postulate some invisible process called hypnosis, when we know that people raise arms and taste sugar if they feel social pressures to do so? Well, this ‘social’ explanation might serve for the hypnosis group too, but only if we could identify social pressures acting upon them also; it turns out that pressures are easy to find. We are a social animal and behave very much like other

group-living primates. Most of us do not like to stand out as too different or awkward, and we tend to want to please someone perceived to be of higher status. A university professor carrying out experiments on the students (the situation for much psychological research) is of higher status. The students know what is expected of them, because we all have a broad idea of what hypnosis is supposed to be like; what they do not know is supplemented by what is implicit in the suggestions given. If a participant finds to their concern that nothing seems to be happening they may think something along the lines of “*Oh dear, what’s wrong with me? I bet everyone else gets hypnotized properly.*” The only solution is to act the part. Not everyone would be so compliant as to respond in that way, but then not everyone scores high on the tests.

One may well wonder how the above picture was supposed to map onto clinical experience. Did ‘cured’ patients fake their recoveries? The title of Wagstaff’s (1981) book *Hypnosis, Compliance and Belief* gives a hint of his sceptical stance, but others adopted more of a compromise position. They still emphasized the social aspects of the situation that led people to behave ‘hypnotically’ (and the inverted commas were often used) but acknowledged that some people actually went on to convince themselves that they were having the experience – they were not deliberately lying. Spanos was a Canadian researcher who seemed to spend much of his research career (sadly cut short in a flying accident) devising experiments to show that hypnotized people did only what they believed hypnotized people do. He used the term ‘socio-cognitive’ to label these ‘middle-ground’ theories; the label derives from two fields within psychology: social and cognitive. Where social psychology is concerned with the interactions between people (including between hypnotist and hypnotized), cognitive psychology is a branch of the discipline seeking to understand the hidden mental processes giving rise to conscious experiences within the individual. Spanos (1991) did not expand greatly upon the nature of the cognitive processes that might enable a person to alter their conscious experience. That it did alter was taken by some to justify referring to hypnosis as an ‘altered state of consciousness’, but for the socio-cognitive school that was to go too far; they saw no evidence for a significant change in brain state. The ensuing controversy became known as the ‘state versus non-state debate’ (see chapter 2), and it is only quite recently that the arguments have become more muted (see Kirsch & Lynn, 1995 for a helpful review).

## **Cognitive Processes**

Whether or not social factors are especially important in hypnosis, if people’s experiences are genuine (i.e. they are not faking) it is indisputable that rather unusual cognitive processes are taking place. Take moving an arm for example. As I pause in the typing of this chapter I reach for a cup of tea. Because I am concentrating on what I want to say I am only half aware of wanting to take another sip; I am not at all aware of the arm movement that makes that sip possible. So, there is nothing unusual in having an arm move without knowing that one is doing it. However, now that I have chosen arm moving as my example, I have become entirely aware of it. Not only that, but I am aware of intending to cause that

movement. That is all exactly as one would expect; it would only become odd if I was aware of my arm moving, but had no sense of being the agent of that movement. That is the experience of people who pass the arm levitation test of a hypnotic susceptibility scale. The work of Spanos showed that people get the effects that they expect, so it cannot be claimed that the hypnotist's suggestions are somehow acting directly on some part of the participant's brain and bypassing conscious control processes. Clearly the hypnotized person hears the suggestion, then presumably uses fairly normal channels to set things in motion. The unusual element of this must be in the failure to recognize that they are using those 'channels'.

### *Intention and awareness*

A number of theories have suggested that there must be some kind of disconnection between intention and awareness (e.g. Bowers, 1992; Brown & Oakley, 2004; Woody & Sadler, 2008), and they draw to a greater or lesser extent upon the idea that our monitoring and control systems are hierarchical in nature. Thus with my cup it is sufficient to wish to pick it up; I do not need to know anything about the precise movements of arm, hand and fingers to achieve this. Nevertheless, I can attend to those if I wish, for example if trying to extricate a very full cup from a cluttered desk, without spilling tea on the other things. Usually our level of awareness is at the same level as that at which intentions are made, but it is conceivable that one might issue commands at a high level (e.g. 'Have another sip') while monitoring at a lower ('I can feel my arm moving').

A variation on this theme has been proposed by Dienes and Perner (2007), who based their ideas upon the concept of higher order thought (i.e. self-awareness of awareness). Our human consciousness, it is suggested, derives from our ability to think about our experiences and even to think about that thinking (I feel the cup; I am aware that I am feeling the cup; I notice that I am having that awareness about the sensation of holding the cup). Dienes and Perner suggest that in hypnosis we abandon those higher order thoughts that have to do with the intention to act, and hence simply have conscious awareness of the result. Brain scanning had previously identified a frontal region of the left hemisphere that appeared to be involved in the higher order thinking process. Hence, Dienes and Perner reasoned that if this region were unable to work effectively, a person would be more likely to experience hypnotic behaviour as happening by itself. Sure enough, after using a technique known as transcranial magnetic stimulation to disrupt the region, they found that people rated their hypnotic responses as feeling more automatic.

### *Time distortion*

It is possible to approach the notion of disconnection (or at least some form of neural disruption) from a different perspective: that of its impact upon time judgements. It is a common observation that a person who has just had a session of hypnosis will produce



a striking underestimate if asked how long they feel the session lasted. In fact this effect might qualify as the only true example of spontaneous hypnotic behaviour, since people do not expect it and the hypnotist does not suggest it. A series of experiments (Naish, 2001, 2003) has shown that, over a range of different timing tasks, hypnotized people behave as if their 'internal clock' is running slowly. While the exact nature of the inner clock remains unclear, it is generally assumed that it involves oscillatory neural circuits, with evidence that these may be linked to our sense of conscious awareness (Naish, 2007). From such a link it would follow that disruption to these circuits might simultaneously modify both the sense of time and the nature of conscious experience. Perhaps that is what hypnosis achieves.

### *Brain scanning and the psychosis dimension*

The fact that a hypnotized person can experience auditory hallucinations, or feel that limb movements are taking place outside their control, is reminiscent of the experiences of the schizophrenia patient. In fact this would seem to be more than a passing resemblance, because there are several other factors in common. Many people who would never be diagnosed with schizophrenia will nevertheless score relatively high on a scale of schizotypy. These scales ask questions such as whether the person ever feels that they look different, or whether they sometimes think they heard a voice when they knew no one could be there. There is a correlation between schizotypy scores and hypnotic susceptibility; put another way, if you are inclined to have 'odd' experiences anyway, you are more likely to respond to suggestions in hypnosis (Gruzelier *et al.*, 2004). Brain scanning reveals further parallels between hypnosis and schizophrenia, but it should be stated categorically that hypnotic responsiveness is in no way an indicator of schizophrenic illness and has little clinical significance.

The advent of advanced brain-scanning techniques has rendered theorizing about brain behaviour rather less speculative. Although a full understanding remains a distant dream, scanning results can at least constrain theories and point to basic mechanisms. It would perhaps be helpful to break off from the description of similarities between hypnosis and schizophrenia, just to outline the brain-scanning techniques available and the kinds of information they are revealing. The earliest window onto brain activity was electroencephalography (EEG). By attaching electrodes to the scalp it is possible to detect the tiny voltage changes caused by neural activity in the brain. The firing of one neuron would produce an effect too small to detect, so only the activity of many brain cells firing together can be monitored. This inevitably rules out the possibility of getting a fine-grained picture of what is going on, a failing which is exacerbated by the insulating properties of the skull. As a result, it is not possible to identify the locations of neural activity in anything other than a rather general way. Thus, Gruzelier (2006) describes EEG experiments that showed a shift from predominantly left frontal brain activity to rather more posterior, right hemisphere activity (an observation discussed below). Where EEG does come into its own is in the ability to show precisely when activity takes place. For example, when different brain regions are working together their activity patterns become 'phase locked', rather like

different musicians following the same conductor. Fingelkurts *et al.* (2007) used EEG to demonstrate a weakening of this synchrony during hypnosis, a finding that has parallels with schizophrenia, where equivalent effects occur.

What might be called the first of the modern scanning techniques is positron emission tomography (PET). Unlike EEG, this methodology is very poor at revealing the exact timing of activity, but it is a good deal better at showing where it is taking place. It does so indirectly, because an active brain site has more blood delivered and it is the blood flow that is monitored. This is done by injecting mildly radioactive substances into the blood stream. For that and other reasons PET is not an ideal technique, but it did begin to reveal a lot more about the hypnotized brain. Szechtman *et al.* (1998) used hypnosis as an analogue for schizophrenia, because it was not easy to PET scan patients while having a hallucination. In contrast, hypnotized subjects were able to 'hear' a voice that was not there while being scanned, and that revealed activity in the auditory cortex, just as if a sound were present. This paper was one of the first to report that hypnotic experiences were associated with activity in the anterior cingulate cortex, a frontal region of brain that appears to be involved in many processes, including those associated with attention and consciousness. Activity here appears to be a common feature of hypnosis.

The last technique we will consider is functional magnetic resonance imaging (fMRI). This uses the same MRI scanners that might be used to detect a tumour, but they are set to respond to magnetic field changes brought about by the presence of oxygenated blood (oxyhaemoglobin has magnetic properties). Since more oxygen is delivered to regions of the brain that are active, the scanner is able to identify those regions. Both the time-measuring and spatial resolution of fMRI are better than those of PET and are improving with each new generation of machine. As these scanners and their associated computing software become more sophisticated they are able to reveal more, including the tracing of major fasciculi (connecting tracts) through the brain. This function will be mentioned in what follows as we return to our discussion of the brain, and the parallels between hypnosis and psychosis.

### *Inhibition*

One important factor in all aspects of brain activity is the process of inhibition: signals from one set of neurons 'dampen down' the activity in another set. It was mentioned above that hypnosis can produce auditory hallucinations; scanning has shown that brain regions responding to speech are easily activated, to the extent that our brain behaves as if it is 'hearing', even when viewing speaking lips in the absence of sound. In spite of this sensitivity, the activity is muted when we think to ourselves in words, as when speaking under our breath. The low activity is the result of inhibition; because we are aware of what we are saying to ourselves, we do not need to hear it too. A similar process reduces the brain's response to changes in arm position when we decide to move our own arm. In contrast, if someone else moves the arm for us there is a strong neural response: we cannot normally inhibit the unexpected. This inhibiting of self-initiated responses occurs in healthy individuals, but less so in those suffering from schizophrenia. When they believe

they are hearing voices, there is not only activity in the speech-generating regions (they are talking to themselves), but crucially there is also activity in the auditory regions: they are actually 'hearing' a voice. It may be that because there should normally be inhibition of internally generated signals, any signal that escapes inhibition is automatically interpreted as coming from somewhere else. Patients sometimes believe that the television is talking to them, or that neighbours are beaming messages into their room. This failure to inhibit may be due to problems with the connectivity within the brain; Lawrie *et al.* (2002) report discontinuities in major interconnecting fasciculi.

Startlingly, scanning people who are experiencing hypnotic movements 'happening by themselves' has revealed that they too are not inhibiting the associated activity. In other words, rather than responding as if they are causing the movements themselves (which of course they are) their brains show the sort of activity that would be observed if someone else caused the movement (Blakemore *et al.*, 2003). Apart from anything else, this certainly shows that they are not faking the experience. The hypnotized person obviously does not have a breakdown in connectivity, as in schizophrenia, but the anterior cingulate appears to modulate inhibition (Fletcher *et al.*, 1999) and so may mimic the psychotic connectivity problems.

Perhaps the most surprising parallel between hypnosis and a psychotic condition, such as schizophrenia, is that such patients have been shown (Elvevåg *et al.*, 2004) to be very poor at making time judgements. This finding is consistent with the earlier suggestion that changes in connectivity in the brain can lead to changes in both conscious experience and also the sense of time. The observation prompts one to look to see whether there are other conditions that combine an impact upon time perception with hallucinatory experiences.

### *Timing, hallucinations and the hemispheres*

There are two other consciousness-changing conditions that have an impact upon time perception that deserve mention. A much researched group of patients, from the point of view of temporal judgements, are those with Parkinson's disease; they display a 'slow clock' effect, very much like that of the hypnotized person. These patients are well known for their tremor and movement difficulties; less well known is that a significant proportion experience hallucinations (Fénelon *et al.*, 2000). It is harder to find an explanation for this intriguing parallel than it is for schizophrenia, for which 'disconnection' is the plausible link, but there is evidence that the same general neural circuitry may be involved in both conditions. In fact overdoses of L-dopa, the treatment for Parkinsonism, can result in psychotic effects like schizophrenia.

L-dopa is used for treatment, because it boosts levels of dopamine, the neurotransmitter that is depleted in Parkinson patients. It is known that the depletion occurs within a deep brain region, whose elements are collectively termed the basal ganglia. Because raising the levels of dopamine improves timing in patients, it has been assumed that the neural apparatus for the inner clock is located in the basal ganglia. However, studies of hypnosis using brain scanning have never implicated the basal ganglia as key structures in the hypnotic process. Hypnosis appears to involve frontal cortical regions of the brain,

especially, as mentioned earlier, the anterior cingulate cortex. This is as would be expected in a process with a large voluntary element involving changes to attention and conscious experience.

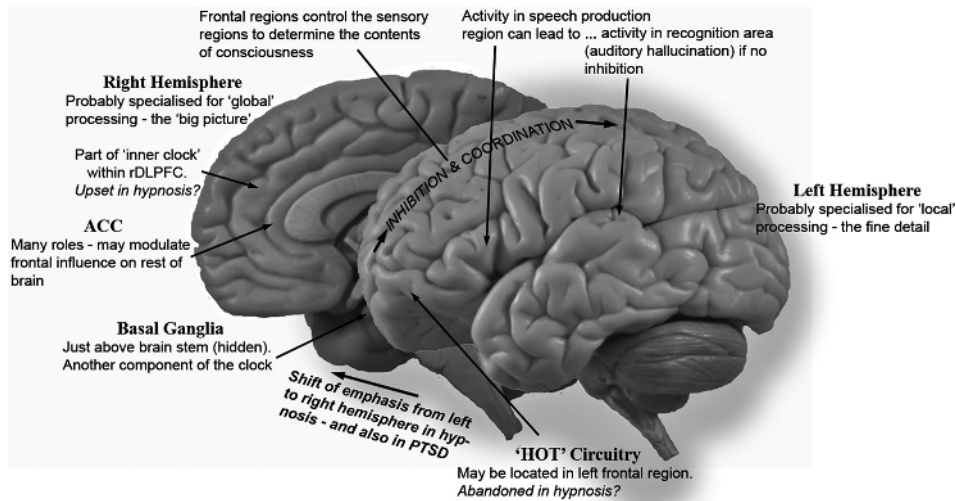
How then can hypnosis impact the clock? Using fMRI scanning during a timing experiment, Lewis and Miall (2006) identified a region in the right dorso-lateral prefrontal cortex which appears to be involved. Since there are neural connections (via dopamine-using neurons) to this region from the basal ganglia, we may have a plausible way to bring together the disparate components of this story. There is one element of the Lewis and Miall observation to highlight: the evidence that timing is, at least in part, a right hemisphere process. The potential relevance of this observation will emerge when we have considered the final example of timing and consciousness modification.

Sufferers from post-traumatic stress disorder (PTSD) experience 'flashbacks' of the precipitating event. Flashbacks are hallucinations that can be so vivid as to make the victim feel that they are actually back in the trauma scene. They also experience foreshortening of retrospective time. What is more, PTSD patients are more than averagely susceptible to hypnosis (Yard *et al.*, 2008), a fact that makes hypnosis a useful tool in the treatment of the condition.

There is some evidence that these PTSD sufferers have a higher than normal level of activity in the right hemisphere (Hans *et al.*, 2002). It is believed that this hemisphere is more involved with the processing of 'global' information, whereas the left hemisphere is specialized for the finer detail. For a person experiencing heightened arousal and a constant state of anxiety (which is the case in PTSD), it is indeed plausible that they would direct their attention towards the 'big picture' rather than the minutiae of their surroundings – in effect, they are too occupied with looking out for danger to spend time on detail.

It can be hypothesized that the change in right hemisphere activity in PTSD impacts the time-related region mentioned above, which is also located in the right hemisphere. Thus we may have an explanation for the time distortion effects of PTSD, but we are yet to provide the hallucination link; a comparison with schizophrenia may provide one. Caligiuri *et al.* (2005) has suggested that there is poor connectivity between the hemispheres in schizophrenia, so that the left hemisphere is less able to exert an inhibitory influence upon the right. As a result, the right hemisphere, they propose, becomes unstable and generates hallucinations. It is certainly the case that there is a high incidence of 'mixed laterality' in schizophrenia; in other words, patients tend not to have a clear left or right hand preference. This can be taken to imply an absence of dominance between the hemispheres.

We are now in a position to postulate that in PTSD the shift of brain activity towards the right hemisphere not only interferes with the timing processes based there, but also facilitates the formation of hallucinations. Could this be the case in hypnosis? Gruzelier (2006) did indeed cite evidence for a rightward shift during hypnosis, and his findings have been extended (Naish, 2010) to show that highly hypnotizable people are normally strongly left hemisphere focused but swing to an equally strong right focus when hypnotized. Using the same measurement technique with PTSD sufferers (in a study which is ongoing at the time of writing) is producing data which seem to round off the



**Figure 1.1** The two hemispheres of the brain (separated for clarity) showing key areas associated with hypnosis. © Peter Naish.

*Key:* ACC: anterior cingulate cortex; HOT: higher order thought; PTSD: Post-traumatic Stress Disorder; rDLPFC: right dorso-lateral prefrontal cortex.

*Note:* A possible explanation for hypnotic phenomena is that the ACC decreases the amount of inhibition of predicted (self-initiated) sensations, hence leading to hallucinations or feeling of things happening by themselves. A shift of emphasis from left to right hemisphere processing may facilitate the 'by themselves' sensation by ignoring the left-based HOT region. Moving to the right may support hallucinating by accentuating 'big picture' formation. The shift may also interfere with clock circuitry in the right hemisphere.

account very well. It turns out that the patients have a hemispheric asymmetry exactly like that of a hypnotized person.

A clinical observation is relevant in this context. Although in the calm conditions of a laboratory many people turn out not to be especially responsive to hypnosis, front-line medical staff report high levels of success in using hypnosis with most patients. These patients are frequently anxious, which may well be nudging them into a greater use of their right hemispheres. (See Figure 1.1.)

## Summary, Conclusions and Cautions

This brief overview has necessarily omitted an enormous volume of research and theorizing about hypnosis. Nevertheless, it has shown clearly that hypnosis is associated with distinct changes in brain operation. Moreover, the fact that some people seem able to achieve this rather more easily than others appears to be paralleled by underlying differences in their everyday brain function (McGeown *et al.*, 2009; Naish, 2010).

In hypnosis the brain perhaps adopts something of the behaviour of the schizophrenic's or the PTSD victim's brain. Of course the great difference is that the behaviour in hypnosis is voluntary and reversible, and normally entirely benign. The hypnotist guides a patient through mental processes that are not fully grounded in reality, the rightward shift perhaps facilitating hallucinations or leading to the abandonment of the left-based higher order thought mechanisms (Dienes & Perner, 2007). By muting the rational imperative the patient may become able to engage in new thoughts and experiences without their fierce rejection by the intellect.

Clearly, such processes offer powerful possibilities, but it would be wrong to leave this chapter without mention of their potential dangers. Reference will be made to just two; one general, the other specific. The first is the observation that such an effective vehicle for change could, if inappropriately employed, lead to harm rather than healing. It follows that it should be used only by people with an adequate understanding of the therapeutic procedures they are employing. By way of illustration, consider the value of hypnosis in dentistry: it can relax the patient, alleviate pain and even influence bleeding. However, no one who has simply followed a brief course in how to hypnotize would be crass enough to set themselves up as a dentist – one hopes! The brain is a good deal more complex than the jaw, yet many people, with minimal psychological knowledge, do consider it proper to study hypnosis and launch themselves upon an unsuspecting public as psychotherapists.

*These delusions of adequacy are dangerous, and every opportunity should be taken to warn the public not to consult hypnotherapists who are not first and foremost health professionals.*

Of the different kinds of damage that might be caused during hypnosis, one stands out as especially pernicious: the creation of false memories. Many therapists value hypnosis for its role in re-vivification: not infrequently, the problems a client presents today have their roots in the past, so a vivid 'working through' of the precipitating events can be useful. What is not useful is to follow the following line in faulty reasoning.

- All problems are caused by past events.
- If an event is not remembered, the memory must have been repressed, being too painful for conscious awareness.
- Resurrecting the memory will facilitate a cure.
- Hypnosis is the perfect tool for finding the buried material.

This could even be expanded to imply that the problem-causing past events almost certainly involved childhood sexual abuse, because there are many so-called therapists who hold that belief. In fact, every assertion in that list is at best questionable and probably downright wrong. This is not a chapter on memory, so suffice it to say that the Freudian notion of repression is far from proven, whereas the ability of hypnosis to facilitate the generation of pseudo-memories is very well established, to the extent that the Home Office has issued guidelines to police forces not to use hypnosis to 'refresh' eyewitness memories.

The author (PN) has encountered many cases of troubled people who have 'recovered' memories of past abuse, but the uncovering seems to have done nothing to alleviate their unhappiness. Rather, they become estranged from their families (generally the accused) and lead lonely, even unhappier lives. Meanwhile, the families are devastated and break-ups often ensue. Not everyone appears to be vulnerable to the creation of false memories, but unfortunately the qualities that make a person more hypnotizable actually make them more prone to these erroneous recollections. It is important to note that whilst high hypnotizability predisposes a patient to false memories, this is not exclusive to hypnosis but can occur in any poorly managed counselling or psychotherapeutic encounter. Nowadays, many therapists pay lip service to the need to guard against false memory, but that is not enough. Guidelines issued by the British Psychological Society (BPS) are instructive, as for example:

Hypnosis does not have any special property for enhancing memory in therapy . . . using hypnosis in this way carries a real risk of producing substantial pseudo-memories . . . some can be so plausible as to beguile the therapist and client alike into accepting them as accurate. (Heap *et al.*, 2001, p. 12)

And the following:

For a therapist merely to claim awareness of the problem and to be guarding against it provides insufficient protection against the dangers of false memory. Research has shown that simply to label a situation 'hypnotic' will cause people who are attempting to recall their earliest memories to produce [so] many more . . . as to make it virtually certain that the recalled memories are false. (Heap *et al.*, 2001, p. 12)

A recent court case involved a middle-aged man accusing a much older man of having sexually abused him many years before, when the accuser was a young boy. As a grown man he had lost a job and apparently turned to drink; he then consulted a lay hypnotherapist for help with his depression. Questioning in court established that the therapist had followed a part-time on-line course, enabling him to go from having no qualification of any sort (not even a General Certificate of Secondary Education [GCSE]) to being a 'qualified hypnotherapist' in the space of three months! It was also established that this woefully ignorant (but doubtless well-intentioned) man had 'helped' the client over a series of sessions to build up a 'memory' of the alleged abuse. The police were taken in by this piece of fiction and initiated proceedings, but the judge was not so gullible. Having been informed of the nature of memory and of hypnosis, and made aware of those BPS guidelines, she ruled all the evidence acquired during hypnosis inadmissible. As that was the total of the evidence, the prosecution had no case, so it was dismissed without the jury ever hearing a word of it. Justice of a sort had doubtless been done, but the man who should have been in the dock, the therapist (or better, the man who received money for the so-called training), got off free. The accuser is doubtless in a state of angry confusion, and the poor accused may be haunted by the anxiety of the false accusations to his dying day.

Anyone intending to use hypnosis in a psychotherapeutic role would do well to read the full BPS document, but the basic message is simple. If, in the absence of hypnosis, during history taking for example, a client refers to issues in the past, then these may well be worth exploring. However, the temptation to use hypnosis to carry out an active search for a putative repressed memory should be resisted: the all too real risks outweigh by far any slight chances of benefit.

Having sounded that very strong warning note, it should be pointed out that later in this book you will encounter a process often called 'uncovering'; it is important to appreciate the difference between this and the kinds of dangerous practice described above. The distinction is perhaps best illustrated with an imaginary example. A person comes complaining of being terribly stressed at work. Questioning reveals that this started when a new boss came; he is not bad and others seem to like him, but he has a rather forceful manner. This seems especially scary in group meetings, when he will pick on people to give verbal reports. Within hypnosis the patient is asked to let his mind go back and find another time when he had those feelings (using affect bridge; see page 127). He remembers a teacher at school, who often shouted, and once embarrassed the patient dreadfully, by making him stand up and explain something to the whole class. He could not do so, and was treated to a loud verbal dressing down. Once this episode is 'uncovered', the parallels are obvious and the patient is surprised never to have spotted them before. Once the link has been made, the therapist is able to find appropriate therapeutic strategies to deal with the problem. Note that the memory itself does not come as a surprise; it had not been repressed, and certainly had not been invented in hypnosis. In fact 'uncovering' is probably not a very good term for finding the significance of a memory in this way, but it is quicker to say than the 'never-noticed-the-connection technique'!

If you are reading this book it is probably because you firmly believe in the therapeutic value of hypnosis. The hope is that, after reading this chapter, you will also recognize that hypnosis is a fascinating phenomenon in its own right and an exciting field for research. The hope is also that you will make time to continue to dip into research findings occasionally, and when they are relevant allow them to influence your practice. There is still much to discover about hypnosis, but we do now know that it produces real changes in the brain. As the following chapters will show, by combining hypnosis with traditional procedures, these changes can result in significant therapeutic enhancement.

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