



hypnosis
in
treatment

an ecosystemic approach

DAVID P FOURIE

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Foreword

There are thousands of books about hypnosis. They range from popularly written treatises on how to use the supposed 'power' of hypnosis to become rich and cure all your illnesses to scientific tomes debating obscure points of theory and research. What can any new book on hypnosis then say that has not been said many times before?

That is exactly what this book is meant to do. It aims to introduce to the field of hypnosis a completely new and radically different way of thinking about our subject – and not only a new way of thinking, but also a new way of doing. This is so because this new, ecosystemic approach to hypnosis has profound implications for the practice of hypnosis.

Yet another theory of hypnosis! There are too many of these already (Kirsch, 1991a). What is to be introduced here, however, is not a theory, but an epistemology, a way of thinking as it could be applied to hypnosis. What is new is not the epistemology – it has been around in family therapy for some time – but its application to hypnosis. In this sense then, the book is meant to bring hypnosis into the realm of current developments in thinking about human behaviour and not to propound yet another theory of hypnosis.

The themes to be covered in this book revolve around a contrast between Newtonian and ecosystemic thinking. The outline which will be followed is presented in the following block:

EPISTEMOLOGIES	
NEWTONIAN	ECOSYSTEMIC
Notions	Notions
Theories	Hypnosis
Implications	Implications
Differential effectiveness	
	Guidelines

chapter 1



Introduction:

from

traditional

to

ecosystemic

thinking

Chapter 1		EPISTEMOLOGIES	
APPROACHES TO HYPNOSIS		NEWTONIAN	ECOSYSTEMIC
NEWTONIAN	ECOSYSTEMIC		
Traditional science	'New' science	Notions Theories Implications	Notions Hypnosis Implications Differential effectiveness Guidelines

We live in a scientific and technological age. In the last few decades, as never before in human history, science has literally conquered the world. There is scarcely an individual alive who has not been affected by the explosion in scientific knowledge and technology. Satellite communications, facsimile transmission and computer networks have shrunk the globe.

Millions of people watched the Gulf War blow by blow while consuming microwave dinners. This unprecedented occurrence resulted directly from the scientific developments of the last few years, as did the awesome weapons whose capabilities were so clearly demonstrated to the viewing public.

No wonder then that science, in its collective sense, has become a major force in people's lives. For something to be called 'scientific' is usually considered a compliment, and everything is supposed to be scientifically designed, from the food we eat to the beds we sleep in.

Hypnosis, that age-old mystery, has not escaped the scientific age either. It is usually classified as one of the human or social sciences – the term 'science' has crept in everywhere. Therefore it is supposed to be studied in a 'scientific' way. But what is a 'scientific' way?

Despite very many variations, a 'scientific' way to study an object or event in essence attempts to answer certain basic types of questions. These are:

- *What is it?* Aristotle believed the aim of science was to reveal the true nature of things, in so doing assuming that such a nature exists

and can be objectively found. This is still a priority in science. In practice this usually leads to efforts to discover the composition of the object or event under study. The phenomenon of study is broken up into its parts or elements to see what it is made of. This is the analytical or reductionistic phase.

- *How does it work?* Once the elements or parts are known, an attempt is made to find out how they fit together to make up the object or event. This is the synthesis phase. In complicated phenomena there is an attempt to find out how one occurrence leads to or causes another. Elements are seen as connected with each other through causality.
- *How can it be used?* On the basis of the answers to the previous two types of questions the need arises to predict the working of the object, or the occurrence of the event. This is followed by manipulation of the object of study in order to achieve some utilitarian purpose.

While traditional scientific approaches, as exemplified by these three types of questions, have led to the tremendous achievements in technology mentioned above, their application to the social sciences was less successful. It is difficult to break up complicated social processes into parts or elements, for instance. For this reason some approaches *created/invented* imaginary 'parts' (or concepts) which were treated *as if* they were concrete entities (Whitehead, 1959), for example the 'unconscious', 'personality', 'trance', and the 'ego'. Other approaches, such as radical behaviourism, totally ignored people's internal functioning.

While this kind of extreme position became softened over the years, the basic *way* of thinking about human behaviour kept revolving around these three types of questions. In other words, a method of inquiry which evolved from the natural sciences and which applied extremely well to these sciences was regarded as 'scientific', that is, desirable, and was more or less uncritically applied to the social sciences, even though it did not work as well in this field.

In hypnosis too, this 'scientific' way of thinking, or epistemology of science, did not fare too well. Some theorists and researchers saw hypnosis as a special state of consciousness, that is, they went the way of creating an explanatory entity. They saw this state as being brought about or caused by the per-

son's ability or capacity to be hypnotised (another created entity) and by a process of dissociation (a created hypothetical process). In all, this was not a very satisfactory explanation of hypnosis.

Other theorists/researchers went the behaviouristic way and saw hypnosis as little more than play-acting. However, in attempting to account for the question of the cause of the play-acting, they accepted the existence of the created entity of hypnotic susceptibility and added other elements. These included the situational demands as well as intrapsychic strategies which subjects were supposed to use to be able to play-act convincingly, for instance attention diversion. Like dissociation, these processes are hypothetical, that is, created/invented by the theory.

Although these two broad approaches (and there are many variations of them) contributed greatly to our understanding of hypnosis, both of them suffered from the limitations inherent in the application to human behaviour of an epistemology meant for concrete objects in linear cause-effect relationships with each other. (See Toulmin, 1981, for a comprehensive criticism of this.)

Since about the 1950s a gradually increasing number of theorists have begun to voice their dissatisfaction with the study of human behaviour by means of a way of thinking which was so inappropriate to it. Chief among these were Bateson (1972, 1979) and Von Bertalanffy (1974), followed by Maturana and Varela (1980), Von Foerster (1981) and Von Glasersfeld (1985). What emerged from their theorising and that of others was a different way of thinking about human behaviour, an epistemology which was meant to be more suited to the study of such behaviour than the traditional epistemology of science. Many names were given to this new epistemology, for example 'non-linear epistemology', 'systemic epistemology', 'cybernetic epistemology'. The term which will be used here is 'ecosystemic epistemology', which emphasises both ecology and systems, and which has also been used by such theorists as Auerswald (1987) and Keeney (1979).

This new way of thinking about human behaviour will be discussed more fully later. However, the main differences between it and the traditional scientific epistemology, as they emerge at different levels of conceptualisation and operation, are presented in the following table:

The traditional scientific approach contrasted with an ecosystemic approach

Level	Approach	
	Traditional	Ecosystemic
Epistemology	Objectivity: the 'real' nature of things	Constructivism Relativity
Paradigm	Reductionism Causality	Holism Fit
Theory	Mechanistic	Cybernetic
Research	Proving Validating	Making sense Describing
Methodology	Objective	Consensual
Results	Proof	Guidelines
Application	Mechanical	Creative
Hypnosis	Individual Intrapsychic	Contextual

chapter 2



The development of ecosystemic thinking

When we think of the development of ecosystemic thinking, we often think of the work of Carl Rogers, who introduced the concept of the "fully functioning person" in his 1957 book *On Becoming a Person*. Rogers' work was a direct result of his work with clients in his private practice, and his emphasis on the client's subjective experience of the world was a key element of his theory. Rogers' work was also influenced by the work of other humanistic psychologists, such as Abraham Maslow, whose 1954 book *Motivation and Personality* introduced the concept of the "hierarchy of needs".

Other humanistic psychologists, such as Rollo May, who introduced the concept of the "existential vacuum" in his 1952 book *The Meaning of Anxiety*, and Fritz Perls, who introduced the concept of the "gestalt" in his 1951 book *Gestalt Therapy*, also contributed to the development of ecosystemic thinking.

Humanistic psychology was a reaction to the dominance of behaviorism and psychoanalysis in the mid-20th century. Humanistic psychologists emphasized the importance of the individual's subjective experience and the role of the therapist in facilitating the client's self-actualization. This emphasis on the client's subjective experience and the role of the therapist in facilitating the client's self-actualization was a key element of the development of ecosystemic thinking.

Chapter 2		EPISTEMOLOGIES	
EPISTEMOLOGICAL NOTIONS		NEWTONIAN	ECOSYSTEMIC
NEWTONIAN	ECOSYSTEMIC	NEWTONIAN	ECOSYSTEMIC
Reductionism	First-order cybernetics	Notions	Notions
Linearity	Second-order cybernetics	Theories	Hypnosis
Objectivity	Constructivism	Implications	Implications
		Differential effectiveness	Guidelines

Whenever one thinks, one makes assumptions. It is not possible to think in a 'neutral' way without the thinking being directed by the ways we had learned to think. These learned modes of thinking embody implicit assumptions about the nature of the world and logic. This is the case also when one thinks scientifically. In fact, through the long history of science a particular shared way of scientific thinking or epistemology of science (Bateson, 1972) has developed, with implicit assumptions added along the way. For instance, Aristotle thought that the task of science was to find the true nature of things, making the implicit assumptions that things have a true nature and that it is possible to find out what this true nature is (Lifschitz & Fourie, 1985).

Although this shared way of thinking about science was influenced by many scientists and philosophers, among them Aristotle, Descartes and Newton, it is most often referred to as the Newtonian epistemology of science (Colapinto, 1979; Schwartzman, 1984). It rests on the following three assumptions:

- 1 *Reductionism or atomism*: To understand a phenomenon or object it needs to be reduced to its most basic elements, which are simpler, easier to understand, and often measurable (Schwartzman, 1984). Once these building blocks and their characteristics are known, an understanding of the whole can be reached by recombining the elements (Simon, 1990).

- 2 *Linear causality*: In this Newtonian way of thinking the elements are regarded as being connected to one another through cause and effect. The apple is caused to fall from the tree by gravity, which is a property of the earth. Complex phenomena are seen as made up of long causal trains (Hoffman, 1981).
- 3 *Neutral objectivity*: One can only know what an object or phenomenon is really like if one does not influence it. Observation can be, and must be, objective in order to arrive at the truth (Colapinto, 1979).

Under the influence of this Newtonian way of thinking classical physics reached great heights by the end of the last century. In fact, at that time most physicists believed that the basis for understanding the universe was virtually complete. However, beginning in 1905 Einstein, Planck, Heisenberg and others showed that application of the Newtonian way of thinking to more complicated phenomena than those found in classical physics obscured rather than enhanced understanding (Auerswald, 1985). For instance, the observation that light consisted of either particles or waves, depending on the way it was observed, ran counter to the Newtonian idea of objectivity of observation. Einstein's two achievements, namely quantum theory and the theory of relativity, and Heisenberg's uncertainty principle (Capra, 1983; Heisenberg, 1962) led to a completely different view of the universe, that is, as an interconnected dynamic system of relationships. Scientists were forced to question the classical notions of absolute space and time, of mass and energy, of objective observation. Heisenberg (1962, p 58) came to the conclusion that 'what we observe is not nature itself, but nature exposed to our method of questioning'.

These newer ideas in physics therefore oppose the Newtonian notions of reductionism, linear causality and neutral objectivity. In the world of the 'new' physics (Capra, 1983; Zukav, 1979) the image of the universe as a great machine has been replaced by a view of the universe as an indivisible whole, whose parts are interrelated and can be understood only as patterns of an ongoing process. The worldview which emerges can be characterised by words like 'holistic' and 'ecological'.

While the natural sciences were struggling to come to grips with this new view of the universe, the social sciences were eager to establish themselves as scientific disciplines. In this attempt they embraced Newtonian thinking because of the order and rigour it had brought to the natural sciences. The social sciences, in true Newtonian fashion, studied human behaviour by reducing it to what were supposed to be its elements. These elements were seen as interconnected via cause and effect and as uninfluenced by the

process and context of study. Often these elements were hypothetical constructs (MacCorquodale & Meehl, 1948) which were thought to have particular characteristics and which were then treated as if they were semi-concrete entities. This process of reification, criticised by such eminent theorists as Bateson (1979) and Sarbin and Coe (1972), resulted in the wide acceptance of the existence of entities such as the 'ego', the 'unconscious', 'defense mechanisms', 'intelligence' and 'hypnotic susceptibility'.

As more and more fields of scientific enquiry encountered problems of increasing complexity, the inadequacies of a Newtonian way of thinking became increasingly clear. As gestaltists realised long ago (eg Perls, 1969), one often cannot understand the whole by means of a synthesis of the parts. Criticism of the Newtonian epistemology of science has thus come from the natural sciences (eg Capra, 1983; Prigogine & Stengers, 1984), biology (eg Maturana, 1975; Varela, 1979), anthropology (eg Bateson, 1972, 1979) and various branches of psychology such as counselling (eg Cottone, 1988; Ford, 1984) and family therapy (eg Keeney, 1979, 1982). In the movement away from Newtonian thinking two developments played a central role. These were the exposition of general system theory and the emergence of second-order cybernetics.

GENERAL SYSTEM THEORY

In the 1950s, when the focus shifted from elements to organised wholes, the wholes were regarded as systems made up of elements and the interrelationships between them (Hall & Fagan, 1956). Von Bertalanffy (1950) proposed a general theory which could account for the behaviour of all systems, be they mechanical, chemical or human. He himself applied this theory to psychiatry (Von Bertalanffy, 1974) and family therapists were quick to follow suit. Some of the central notions of general system theory were the following:

- 1 Systems are made up of smaller sub-systems and are in turn part of larger supra-systems. A family as a system, for instance, consists of sub-systems such as children and parents, but is in turn a sub-system of the community, as a supra-system.
- 2 Systems, sub-systems and supra-systems are divided from each other by means of invisible boundaries. Information flows across these boundaries, but is restricted by the degree of permeability of a particular boundary. In physical systems boundaries can be totally impermeable, indicating a closed system such as a chemical reaction taking

place in a closed flask. In human systems boundaries are never completely impermeable so that these systems are known as open systems.

- 3 Behaviour within systems tends to remain between certain limits. This balance is called homeostasis.
- 4 Information about the output from a system can be channelled back to the system by the environment or by other systems in the environment. This is known as feedback. If such information leads the behaviour within the system to remain between or return to the previous limits, it is called negative feedback. An example is found in the thermostat of a cooling apparatus: if the temperature to be controlled rises above a certain set value, the apparatus is switched on; if the temperature drops below another set value, the apparatus is switched off. Information which leads the system behaviour to exceed the limits (in any direction), is called change promoting or positive feedback.
- 5 In human systems a particular state of functioning can be reached in different ways. Similar states of functioning can result from completely different initial states of functioning and different states of functioning can result from similar initial states of functioning. This is the principle of equifinality.

This general system theory was closely linked to the then emerging science of cybernetics, with its roots in mathematics (eg Wiener, 1961). It was a theory of *interaction* between open systems and sub-systems. Its development coincided and was coherent with a study by Bateson, Jackson, Haley and Weakland (1956) into the communicational context of schizophrenia. Professionals in the business of changing people's behaviour, such as psychiatrists, psychotherapists and family therapists, found this approach very handy. With its focus on interaction/communication it gave them something observable to work with. Two broad views of treatment emerged from this general conceptualisation: the so-called strategic and structural approaches.

The strategic approach, as exemplified by the work of Haley (1963, 1976), Madanes (1980) and the MRI team at Palo Alto (eg Watzlawick, Weakland & Fisch, 1974), focused on interacting strategically, often paradoxically, with clients and families in such a way that the clients' interaction had to change.

The structural approach (Minuchin, 1974) attempted to rectify dysfunctional structures between sub-systems in the family. For instance, if mother and child formed a sub-system which was in an alliance against father, the structural approach would aim at strengthening the parental sub-system while depotentiating the mother-child sub-system.

Not only was the emphasis in both these approaches on interaction between people, but the concept of power was central to both. In the strategic approach relationships were viewed as either symmetrical (equal) or complementary (with one person in a more powerful position than the other). In the structural approach power hierarchies between sub-systems formed the basis of conceptualisation. In both approaches the therapist was regarded as being in a position of power with regard to the client or family (Hoffman, 1990a).

SECOND-ORDER CYBERNETICS

From the foregoing it is clear that cybernetics/general system theory furnished a way to describe the functioning of systems. These were mostly descriptions of interaction. Implicit in such descriptions was the presence of an observer who made the descriptions. This person was considered to be objective, that is, outside the system being described. However, in the case of living systems it soon became clear that it was impossible for such an observer to be objective. On the one hand, the very act of observation influenced the behaviour of the people under observation. On the other hand the observation was coloured by the observer's way of observing and his/her epistemology or way of thinking. Any description of the system therefore had to account for the observer as much as for each of the members of the system, meaning that he/she was part of the system being observed. This of course implies a higher order of observation, that is, observation of the observation. The study of such a higher order of observation was called cybernetics of cybernetics or second-order cybernetics (Hoffman, 1985).

At about the time that it was realised that objective observation was impossible, two biologists, Maturana (1975, 1983; Maturana & Varela, 1980) and Varela (1979), discovered that perception was determined by the perceiver and not by the perceived. In a classic experiment Maturana found that the way a frog catches a fly is determined not by the presence of the fly, but by the structure of the frog's eye. This led to the conceptualisation that no direct or linear influence by one system on another is possible. Although a system can be 'perturbed' by another system or by the environment, its reaction to the perturbation is determined only by itself. Even in systems which Von Foerster (1981), one of the 'fathers' of second-order cybernetics, would call 'trivial machines', that is, systems where the same input always leads to the same output, their own structures determine the output. With the same input, for example switching on an electric current, a washing machine will wash (and nothing else), while a refrigerator will cool.

This self-determination means that systems are conceptualised as informationally closed, not open, as conceived in general system theory. Whereas in this general theory the focus was on interaction, in second-order cybernetics it is on the *autonomy* of the system (Fourie, 1993). The system is autonomous in regulating and conserving itself. It reacts to perturbations only in ways that it can react. It cannot be linearly influenced from outside (Simon, 1990).

CONSTRUCTIVISM AND ECOLOGY

As we have seen, a central issue in second-order cybernetics is the impossibility of objective perception. We can only see what we are able to see, and the very act of observation influences that which is perceived (Dell, 1985). This means that what we see is at least partially constructed by us. When two or more observers agree on their observations, they have co-constructed a particular reality for themselves (Hoffman, 1990b; Von Glasersfeld, 1984).

This constructivist conceptualisation has profound implications for psychotherapy. This becomes clear if one compares the different ways in which psychotherapy is viewed from the three perspectives discussed here:

- From a *Newtonian* point of view psychotherapy linearly rectifies a malfunctioning within a person. For instance, depression is cured.
- From the position of *general system theory* faulty interaction, which is maintained by the depressive behaviour, is changed through psychotherapy, making the depressive behaviour superfluous.
- From a *second-order perspective* a system enters psychotherapy with a particular constructed reality in which, for example, depression is in central focus. In psychotherapy the attempt is to co-construct a different reality in which depression, for example, is no longer central (Hoffman, 1990b). This process is a linguistic one (Anderson & Goolishian, 1988) and the psychotherapist is part of the system which constructs the 'new' reality.

It is clear, therefore, that constructivism is central to a second-order perspective on psychotherapy (Efran, Lukens & Lukens, 1988). However, it is sometimes thought that this means that any reality can be constructed, a kind of 'anything goes' approach. That is not the case. 'Anything goes' is solipsism, not constructivism. The reality which is co-constructed in a system cannot be just anything; it has to fit with the ideas which the partici-

pants have about themselves, each other, the problem and the world in general.

In other words, such a co-constructed reality exists in the domain of shared meanings. Maturana (1975) called this a 'domain of consensus', whereas Bateson (1972) used the term 'ecology of ideas' to refer to the way in which ideas are interlinked in (family) systems. For this reason a second-order perspective is called an ecosystemic approach by theorists such as Keeney (1979) and Auerswald (1987). This term combines the focus on systems and on ecology and emphasises the complicated, interlinked and ever-changing networks of ideas and meanings within and between systems. These networks exist in language (Anderson & Goolishian, 1988), because language, both verbal and non-verbal, is the main way in which meanings and ideas can be communicated by humans. Other living species exist in similar networks, but the communication is through other means, often chemical.

An example from zoology will illustrate this point as well as the incredible complexity of ecological networks. Van der Hoven (1984) investigated a rise in the mortality rate among the kudu antelope (*Tragelaphus strepsiceros*) which have their habitat in the northern regions of South Africa. Seen from a reductionistic perspective the picture which emerged was baffling: many more kudu died on fenced-in farms than in non-fenced-in areas, although there was sufficient food on the farms; the kudu which died showed signs of starvation (emaciation, etc), but postmortems revealed full stomachs; also no illness could be found.

In describing this investigation, Le Roux (1987) showed how bits of further information fell together like pieces of a puzzle until a comprehensive picture emerged. The kudu live mainly on the leaves of certain trees, but analysis of the stomach contents of the dead kudu revealed much higher levels of a particular tannin (tannin-C) than is normally found in the tree leaves. Tannin-C inhibits the action of the enzymes in the rumen (main stomach) of the kudu from breaking down proteins in the food. High levels of undigested protein were found in the dung of the animals, indicating that, although they had food, they died of starvation because the tannin-C inhibited digestion of the food. But where did the high levels of tannin-C come from? The leaves of the trees on the farms were shown to contain normal levels of tannin-C.

Observation of the feeding habits of the kudu gave a clue to the answer. The kudu is a large animal and when it feeds, it rips leaves and branches from the tree. However, it would feed on the same tree for only a few minutes before moving on to the next tree, even though there would still be food left on the first tree. Bearing this in mind, Van der Hoven (1984) and his team

measured the levels of tannin-C in the leaves while thrashing the tree with whips in an effort to simulate the kudu's rough treatment of the tree. It was found that the levels of tannin-C in the leaves increased markedly; sometimes (depending on the species of tree) an increase of 94% occurred within 15 minutes.

Even more fascinating was the finding that, if a tree was roughly treated, an increase, though smaller and slower, in the levels of tannin-C also occurred in the leaves of other trees in the vicinity, even though they were not treated roughly. Apparently this 'communication' takes place via the release of aromatic compounds when the plant is injured (Le Roux, 1987).

The ecological picture which emerged from this study thus became clear. After a few minutes of feeding from a tree, the leaves lose their taste due to increased levels of tannin-C. The kudu then moves on to the next tree where the tannin-C increase has already started, but not reached such high levels yet. In this way the kudu would browse through a large area. However, on fenced-in farms this is not possible and the kudu is forced to return to the same trees where higher levels of tannin-C were shown to persist for up to 100 hours after rough treatment. One could say that, in an effort to conserve themselves, the trees were killing the antelope, whereas under normal conditions they would transmit to the kudu, by chemical means, the 'idea' that it should move on. Also the trees would, again by chemical means, form a 'consensus of opinion' among themselves that the animal(s) should move to another area.

From an ecosystemic perspective it is clear that each of these systems acted in an autonomous way. The trees could only do what they were structurally capable of doing, that is, secrete tannin-C. In turn, the kudus' behaviour was also structurally determined (Maturana, 1975): eat what was available in the circumstances – their rumens also contained some grass, which kudu do not normally eat and which cannot sustain them. In no way could the kudu bring the trees to stop secreting tannin-C and in no way could the trees keep the kudu from eating what was available. They were closed systems coupling with each other (Maturana, 1975) in the only way their different structures allowed.

Of course it is an arbitrary decision as to which is the system to be described. One could also describe the kudu and the trees as one system. If that is done, it can be seen how this large system acted autonomously in order to conserve itself: some members of the system had to die until a survivable number of animals and trees were left.

It should be noted that both these descriptions are constructions of the observer/describer. They are not 'true' in an absolute sense. However, they fit the facts as they are known and it is hoped, would make sense to most readers, that is, form a domain of consensus. They are therefore not solipsistic.

Although this is an example from nature, it should be clear that the focus on ecology and systems provided by an ecosystemic approach is also applicable to human systems where there are similar but more complicated networks of ideas and meanings.

CONCLUSION

In the movement away from a Newtonian perspective in the social sciences, with its emphasis on reified intrapsychic entities connected to each other through linear cause and effect, general system theory could be seen as a stepping stone. While it broke away from reductionism, it still implied an outside, objective observer and linear causality through its emphasis on interaction and power. An ecosystemic approach, with its rejection of objectivity in favour of constructivism and its emphasis on the autonomy of systems, constitutes a further step in moving away from a Newtonian episte-

chapter 3



The

Newtonian

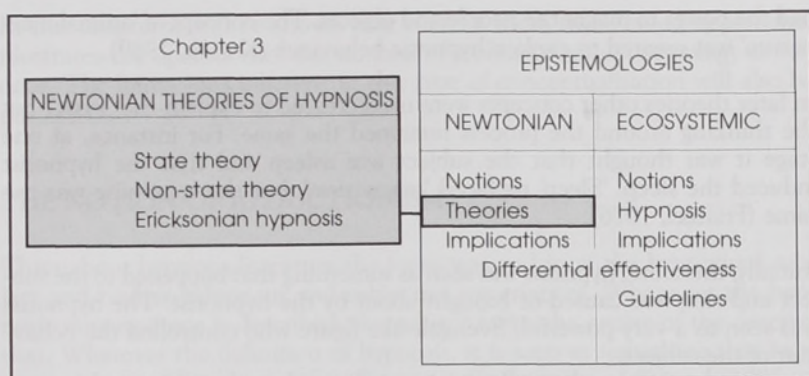
nature

of

current

hypnosis

theories



John gets up, waddles over to an empty chair and says to the chair in a high pitched voice while raising his arms: 'Johnny wants to be picked up, Mummy! Read a story, Mummy!'

John is a 35-year-old businessman acting under conditions of hypnotic age-regression like a three-year-old toddler, hallucinating his mother.

This type of dramatic behaviour in hypnosis has fascinated lay people and scientists since the early days of hypnosis. There was a tremendous need to explain how, for instance, apparently normal people could experience vivid hallucinations or how, like John, they could age-regress to a young age and perform like a child, or, even more dramatically, how they could undergo operations without chemical analgesia/anaesthesia and apparently without experiencing pain. Many attempted explanations for these and other occurrences emerged over the years.

All of these attempted explanations revolved around two questions, namely:

- What happens in hypnosis? (What is hypnosis?)
- How does it happen? (How is it caused?)
(Chertok, 1980)

For example, in one of the earliest of these theories, Mesmer's, it was thought that the subject was magnetised and that the hypnotist (ie Mesmer)

had the power to magnetise people and objects. The concept of 'animal magnetism' was created to explain hypnotic behaviour (Kossak, 1989).

In later theories other concepts were used/created to explain the 'what', but the thinking around the process remained the same. For instance, at one stage it was thought that the subject was asleep and that the hypnotist induced the sleep. 'Sleep' replaced 'magnetism', but the reasoning was the same (Frankel, 1976).

Initially, therefore, hypnosis was seen as something that happened to the subject and that was caused or brought about by the hypnotist. The hypnotist was seen as a very powerful, Svengali-like figure who controlled the behaviour of the subject.

Currently three broad theoretical approaches to hypnosis can be identified, namely the so-called state approaches, the non-state or contextualist perspectives (sometimes also called social psychological approaches) and the Ericksonian views. Although there are differences between various theories within each of these broad perspectives, it is convenient for the sake of discussion to group them together.

Historically and conceptually the state approaches, represented by theorists such as the Hilgards (E R Hilgard, 1986; J R Hilgard, 1970), Orne (1959) and Evans (1981), are the closest to the initial theories. Here hypnosis is seen as a special condition or state of consciousness brought about by two factors, namely the subject's level of susceptibility to hypnosis and the induction technique followed by the hypnotist (Fourie & Lifschitz, 1989).

The non-state approaches came to the fore as a reaction to the state approaches. According to the non-state view hypnosis can be understood through the use of ordinary social psychological concepts such as role demands and self-role congruence, without reference to a special state of consciousness (Kossak, 1989). This view is represented by people such as T X Barber (1979), Spanos (1982) and Sarbin and Coe (1972).

The third series of approaches is currently very popular. These are based on the work of Milton Erickson and have been formulated by some of his ex-students, people like the Lanktons (1983), Rossi (1980) and Zeig (1982). These views differ from the state and non-state approaches in rejecting the value of hypnotic susceptibility as an explanatory concept and in using more permissive ('indirect') induction techniques. However, they give credence to hypnosis as a state of consciousness.

In this chapter it will be shown how each of these three broad approaches illustrates the operation of the notions of a Newtonian epistemology of science. The limitations inherent in this type of conceptualisation will also be pointed out.

THE NOTION OF REDUCTIONISM

Throughout hypnosis literature the focus was and is on the hypnotised subject and his/her behaviour and subjective experiences. Whenever the hypnotic circumstance is described, the subject forms the centre of the description. Whatever the definition of hypnosis, it is seen as something that happens with or within the subject. For instance, Spiegel and Spiegel (1985, p. 1389) define hypnosis as 'a form of attentive, receptive focal concentration with a sense of parallel awareness and a constriction in peripheral awareness'. Obviously they are talking of the subject.

The same is true even of the contextualist approaches. In these theories contextual elements are used to explain the behaviour of the subject, who remains the focal point of conceptualisation. For instance, it is often thought in these approaches that hypnotic behaviour constitutes an attempt by the subject to act according to situational demands, as perceived by him/her, as if he/she were hypnotised. In order to do so, the subject uses cognitive strategies, such as attention diversion and goal-directed fantasy (Spanos & Gorassini, 1984; Spanos, Kennedy & Gwynn, 1984). It is clear that in this kind of conceptualisation the subject and his/her intrapsychic functioning is central.

In fact, as Spanos and Barber (1974) noted more than 20 years ago, there seems to be a convergence between the state and non-state approaches around the intrapsychic concept of imaginative involvement. Wilson and Barber's (1982) conceptualisation of the 'fantasy-prone personality' which is more susceptible to hypnosis seems to be closely akin to the ideas of Josephine Hilgard (1970) regarding imaginative involvement.

In almost all of the theories developed by Erickson's followers hypnosis is viewed as a state of consciousness (Erickson, 1985; Zeig, 1985), often called 'trance', which, according to Ritterman (1983, p 337), is a 'state of intense focus inward into one's own interior phenomenal reality'. Most Ericksonian techniques, such as indirection, creation of a yes-set, interspersal and the use of metaphor, are regarded as attempts to influence intrapsychic processes within the individual; more specifically to 'activate unconscious processes' (Ritterman, 1983, p 32) or to create a 'conscious/unconscious dissociation'

(Lankton & Lankton, 1983, p 145). According to Godin (1988) Erickson saw a response as 'hypnotic' only if it was mediated at an 'unconscious' level.

This intrapsychic emphasis seems to be based on two central premises which are found in most Ericksonian work:

- the postulated existence of an 'unconscious' mind and a related dichotomy between this mind and the 'conscious' mind (sometimes regarded as physically localised in the right and left hemispheres of the brain (eg Lankton & Lankton, 1983))
- the hypothesis that there are untapped resources inside the individual which could be utilised in various ways (eg Havens, 1985; Kirmayer, 1988). Hypnosis is used to bypass the 'conscious' mind in order to access these 'unconscious' resources (Feldman, 1988).

These premises seem to be so important in Ericksonian work that their status as premises is often overlooked. They are regarded as fact, as is indicated by the efforts to localise the 'conscious' and 'unconscious' in the hemispheres of the brain (Colangelo, 1987). Almost the only indication that the 'unconscious' is realised to be a concept and not an entity, is found where it is distinguished from the Freudian concept with the same name (Erickson & Rossi, 1980). For the rest, the 'unconscious' is viewed as a reality (Kirmayer, 1988).

Nowhere is this more clearly stated than by Havens (1985, p. 55): '... when Erickson referred to the unconscious mind he was referring to a very real, observable, demonstrable, phenomenon. He was not merely using the term as a metaphor or as a construct. He meant that people actually *have* an unconscious mind ... in the same sense that they have an arm or a leg' (italics in original).

The view of the 'unconscious' as a storehouse of accumulated learning and more or less unutilised resources (Erickson, 1980, 1985; Havens, 1985) is regarded as the main difference between the Ericksonian and the Freudian 'unconscious'.

It is clear then that Ericksonian approaches to hypnosis focus on the subject, and especially on that which is supposed to occur inside the subject. It is interesting in the light of this to note that one of Lankton and Lankton's (1983) books is entitled *The answer within*.

In all of the three broad approaches to hypnosis, therefore, the complexities and the richness of the hypnosis circumstance is reduced to what is postulated to happen within the subject. This is underscored by the use of such reified concepts as 'state of consciousness', 'fantasy-prone personality' and 'the unconscious'.

The temptation to view hypnosis as something which happens inside the individual is also reflected in some of the more modern theories of hypnosis which cannot be subsumed under one of these three broad approaches. For instance, Kirsch's (1991b) social learning theory of hypnosis postulates that subjects' behaviour/experiences in hypnosis are determined by their expectations regarding hypnosis. While this embodies an interesting line of thought, it is focused only on the subject and pays little attention to the expectations of other people in the hypnotic situation. Similarly Kruse and Gheorghiu's (1990) constructivist view of hypnosis emphasises only the subject.

THE NOTION OF LINEAR CAUSALITY

In early theorising about hypnosis (eg Mesmer) it was thought that the hypnotised subject was under the control of the hypnotist (Frankel, 1976). The hypnotist was supposed to 'cause' the hypnosis in a direct or linear way. While the notion of the power of the hypnotist is still implicit in the work of many theorists, especially the Ericksonians (eg Bandler & Grinder, 1975; Erickson, Rossi & Rossi, 1976; Ritterman, 1983), the modern tendency is to take the opposite position and ascribe cause to the intrapsychic mechanisms of the subject. As Diamond (1977) says, it is the subject's skill of entering hypnosis rather than the hypnotist's skill in inducing it that really matters. Similarly Baker (1990) is of the opinion that the hypnotist is important only as a transference figure.

This seems to be, in general, the current position taken by the contextualist approaches. Subjects comply with the demands of the hypnotic situation by using skills such as attention diversion (Spanos & Gorassini, 1984) in order to act like hypnotised subjects (Baker, 1990). Not all subjects are equally skilful at this, so that hypnotic performance is moderated by their level of skill or susceptibility to hypnosis. One could therefore say that, according to the non-state position, hypnosis is caused by three factors:

- the susceptibility of the subject
- the subject's perception of the demand characteristics of the situation
- the cognitive strategies employed by the subject in order to comply with the demands.

There is a strong implication that, given the necessary level of susceptibility and the willingness to comply, the strategies used by the subject will directly or linearly lead him/her to demonstrate hypnotic behaviour (Baker, 1990; Wagstaff, 1981).

The state conception is slightly different. Although here too the subject's level of hypnotic susceptibility is regarded as important (Evans, 1986; Hilgard, 1965; Orne, 1971; Spiegel & Spiegel, 1985), much emphasis is placed on dissociation between conscious and non-conscious functioning, which, it is strongly implied, is caused by the suggestions presented by the hypnotist (Frankel, 1976; Hilgard, 1986).

When Haley (1963) originally studied Erickson's work, the 'power' of the hypnotist and of paradox came to the fore as significant features of this work. Bandler and Grinder (1975) extended Haley's work and focused heavily on technique as the means of bringing hypnosis about. Since then it has become common practice in Ericksonian hypnosis to emphasise the potency of techniques and, therefore, indirectly the potency of the hypnotist. See, for instance, Joe Barber's (1977) work on rapid induction analgesia.

There is therefore the distinct impression in Ericksonian hypnosis that the hypnotist and/or the technique has/have a direct or linear causal influence on the subject's intrapsychic activities. This is, for instance, illustrated in the five-stage model of hypnotic induction developed by Erickson and Rossi (1979). Here the hypnotist is supposed to establish rapport with the subject, focus his/her attention inward, disrupt the subject's habitual way of thinking, initiate an unconscious search by the subject, and activate unconscious processes in the subject. It is as if the hypnotist has a unilateral influence on the subject, with little or no reciprocal influence by the subject on the hypnotist or on the induction process.

Thus, even though the three broad approaches to hypnosis differ with regard to *how* hypnosis is brought about, they evidence the same *way* of reasoning, namely that hypnosis is caused in a linear way by some person or procedure.

THE NOTION OF OBJECTIVE OBSERVATION

By emphasising the causal influence of the hypnotist and/or the technique, many Ericksonian hypnotherapists act as if the hypnotist were an objective observer of the subject (Matthews, 1985). By means of observing the subject the hypnotist could objectively decide which technique to employ and how to employ it. The assumption is that what the hypnotist observes in the subject or in the subject's system is objective fact which is not in any appreciable way influenced by the act of observation.

This stance is built into the very nature of Ericksonian hypnotherapy. The fact that this mode of therapy is primarily pragmatic and change oriented, means that it emphasises techniques which can bring about change. It also means that change must be clearly defined. Diagnosis is therefore important. And all Ericksonian approaches use diagnosis in some form or another. For instance, Ritterman (1983) analyses symptoms in terms of three levels, namely the symptom bearer's mindset, his/her family context, and his/her social context. Lankton (1985) diagnoses a client's characteristic interpersonal stance by means of Leary's (1957) circle. Araoz (1985) investigates the way in which clients use 'negative self-hypnosis', that is, which negative suggestions about themselves they continually give themselves. Hammond (1985) employs a checklist to assess clients' life experiences, interests and values in order to utilise these in hypnotherapy. All these and other different diagnostic frameworks imply that what is assessed is 'true' and is relatively uninfluenced by the process of assessment.

The implicit assumption that objective observation is not only possible, but desirable, comes to the fore even more clearly in the state and non-state approaches than it does in Ericksonian hypnosis. Investigators subscribing to either of these approaches have been involved for a long time in experimentation to 'prove', in a seemingly 'objective' way, whether or not hypnosis really is a state of consciousness (Coe, 1973). In this experimental arena work is judged as good or bad depending on how closely it adheres to the scientific method, which is firmly based in Newtonian thinking. In a very sophisticated and complicated experiment, for instance, Gruzelier and Brow (1985) 'proved' that hypnosis is an altered state of consciousness, in the sense that brain functioning undergoes a change in hypnosis. What was considered to be 'hypnosis' in this experiment, though, was a very specific procedure in which only certain subjects (called 'Susceptibles' by the experimenters) performed well. These were also the subjects who showed changes in brain functioning. Moreover, the subjects had a particular attribution, based on previous work with the authors, as to what was 'hypnosis'. These factors were not brought into the authors' conclusions, as adherence to the notion of objectivity dictates. This experiment provides a good example of the way experimenters (of both state and non-state affiliations) follow a Newtonian way of thinking and in so doing disregard contextual and attributional factors which play a role in the social setting called an experiment (see Fourie, 1990a).

From the above discussion it is clear that all three broad approaches to hypnosis follow the notions of a Newtonian epistemology of science, albeit in different ways.

LIMITATIONS OF A NEWTONIAN VIEW OF HYPNOSIS

It should be clear by now that a Newtonian perspective imposes definite theoretical and practical limitations on practitioners of hypnosis.

The first limitation has to do with disregard of context. It has long been recognised that hypnosis occurs within a complex network of social relationships. The problem of applying a Newtonian way of thinking to the understanding of such a situation of organised complexity lies in the fractionising of the complexity (Keeney, 1982). After all, reductionism is aimed at simplifying complicated situations and events by breaking them up into what are considered their elements, thereby losing their wholeness or 'gestalt'.

This fractionising of complexity is apparent in all of the three broad approaches to hypnosis. Among the state theorists Orne (1959) distinguished between the 'essence' of hypnosis as an intrapsychic occurrence and the contextual aspects which he viewed as 'artifacts' and which he accordingly regarded as insufficient to explain hypnosis. In a similar vein Evans (1981) dichotomised hypnotic behaviours into those resulting from hypnosis 'itself' and those flowing from the hypnotic situation, while Gruenewald (1982) distinguished between the hypnotic 'condition' and the hypnotic 'situation', with behaviour resulting from the latter not being regarded as 'real' hypnotic behaviour. In this way the event of hypnosis is fragmented and one aspect, the context, disregarded.

A similar fragmentation of the hypnotic situation is apparent in non-state theory. For example, Sarbin and Coe (1972) analysed the context in which hypnosis occurs into discrete elements such as role-expectations, self-role congruence, role-skill and the reinforcement properties of the audience.

The problem inherent in this way of thinking lies in putting all the elements back together again. The questionable assumption seems to be that once an understanding of the elements is gained, a comprehensive understanding of the whole will be achieved by a summative synthesis of these discrete elements.

More modern versions of non-state thinking disregard the hypnotic context much as state theory does. Baker (1990, p. 167), for instance, states categorically that 'hypnosis must be viewed, first and foremost, in terms of the subject ... The hypnotic situation does nothing but help the subject get what he wants ...'

Likewise, with its reductionistic focus on the 'unconscious', Ericksonian hypnosis almost completely disregards the context in which hypnosis takes place.

This theoretical disregard of the context is reflected in a concurrent practical disregard. Hypnotists of all persuasions attempt to influence the subject and do not utilise to any significant extent the resources available in the hypnotic context. This will be more fully discussed later.

Another limitation of a Newtonian view of hypnosis flows from its adherence to the notion of objectivity. Followers of every school of thought behave as if their particular view of hypnosis is objectively true or correct. Therefore attributions of meaning made by subjects or clients regarding hypnosis and/or the hypnosis situation are either disregarded or attempts are made to correct such 'misperceptions'. In very many clinical approaches to hypnosis, for instance, it is advocated that the first step in hypnotherapeutic treatment should be the 'removal of misconceptions' (eg De Betz & Sunnen, 1985). The first chapter in Baker's (1990) book is devoted to what he calls 'popular misconceptions of hypnosis'. Inevitably these 'misconceptions' are attributions which differ from the theory adhered to by the particular authority. The limitation lies in that clinical time and effort are spent in changing client conceptions, whereas these conceptions could potentially have been utilised therapeutically, as was shown elsewhere (Fourie, 1991a). Also, attacking clients' conceptions might have a negative influence on the establishment of a sound therapeutic relationship. In research the subjects' attributions of meaning attached to the situation and to hypnosis are mostly ignored, as is the possible influence of this on the experimental outcome.

A further limitation has to do with the definition of what constitutes hypnotic behaviour. Although the earlier view that certain behaviours can occur only in hypnosis has been refuted, a Newtonian perspective still implies that behaviour must be of a certain class to be considered hypnotic. With some exceptions (eg 'spontaneous' amnesia) these behaviours are those performed seemingly involuntarily in response to the hypnotist's suggestions. Hence Wagstaff's (1981) conception of hypnotic behaviour as compliance. The implied direction of influence, from a Newtonian perspective, therefore is from the hypnotist to the subject. If the subject does not comply with a particular suggestion, he/she is seen as resistant or unsusceptible. This limits the range of possible hypnotic behaviours to those the hypnotist might think of suggesting and which the subject might be amenable to carrying out. A Newtonian perspective does not easily provide for the hypnotist qualifying as hypnestic behaviours those which the subject is already showing. For

instance, in Gruzelier and Brow's (1985) study subjects received a score of one on the susceptibility scale if eye closure occurred, implying that open eyes was not considered a hypnotic behaviour, effectively limiting the range of possibilities in the experiment. A similar limitation is evident in most of the susceptibility scales.

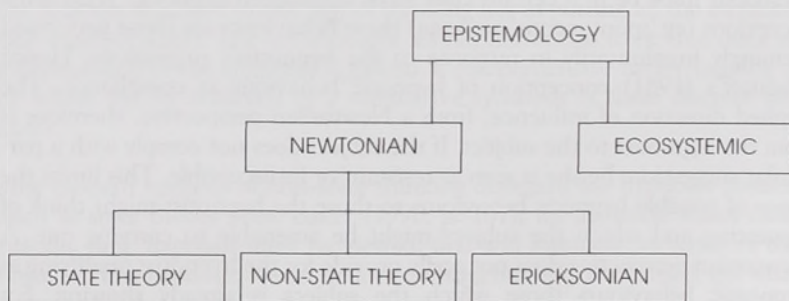
Of the three broad approaches to hypnosis the Ericksonian view has moved away from this position somewhat in that susceptibility testing is not employed and idiosyncratic subject behaviours are utilised. However, the Ericksonians' use of so-called indirect hypnosis rests on the same principle: subjects are perceived to 'go into trance' even though the words 'hypnosis' or 'trance' have not been mentioned. This means that certain (and only certain) subject behaviours are interpreted as indicative of hypnosis. In this vein both Ritterman (1983) and Loredio (1990) observe family members 'slipping into' hypnosis in family therapy sessions.

CONCLUSION

Current theories of hypnosis adhere, almost without exception, to a Newtonian way of thinking. This does not mean that the theories are all the same; contentwise there are vast differences between them. However, the underlying way of thinking is very similar.

From this commitment to Newtonian thinking it follows that most approaches to hypnosis suffer from the limitations inherent to a Newtonian epistemology of science, as applied to the particular approach.

The position of an ecosystemic approach vis-à-vis the three theories discussed in this chapter is illustrated in the following block:



chapter 4



The influence

of Newtonian

thinking

on the

practice of

hypnosis

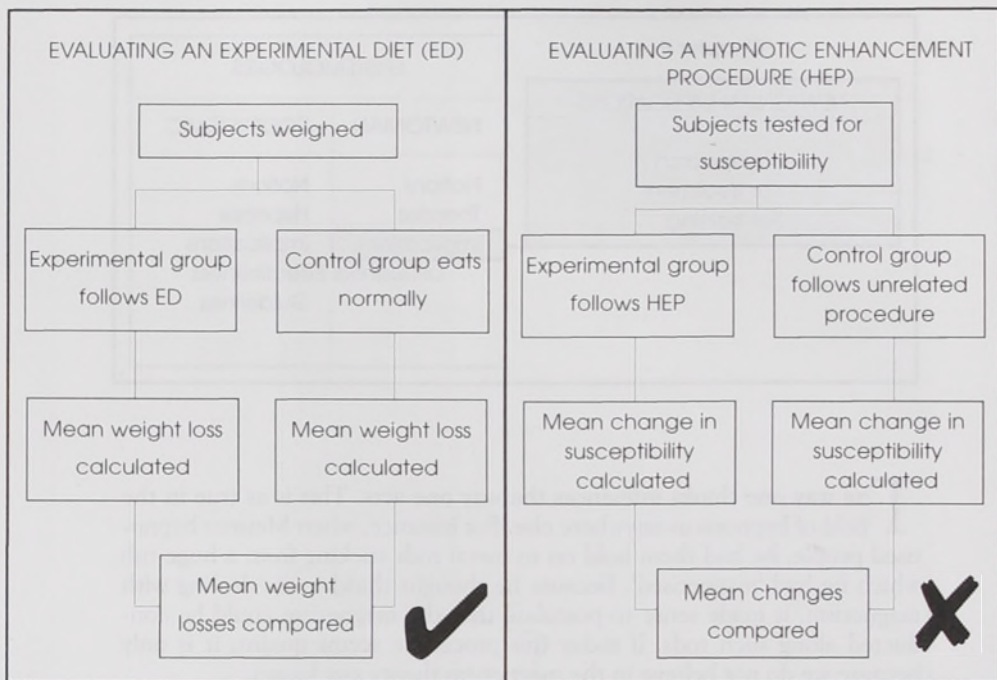
Chapter 4					
NEWTONIAN IMPLICATIONS	EPISTEMOLOGIES				
For research For treatment For training	<table border="1"> <tr> <td style="text-align: center;">NEWTONIAN</td> <td style="text-align: center;">ECOSYSTEMIC</td> </tr> <tr> <td>Notions Theories Implications</td> <td>Notions Hypnosis Implications Effectiveness Guidelines</td> </tr> </table>	NEWTONIAN	ECOSYSTEMIC	Notions Theories Implications	Notions Hypnosis Implications Effectiveness Guidelines
NEWTONIAN	ECOSYSTEMIC				
Notions Theories Implications	Notions Hypnosis Implications Effectiveness Guidelines				

The way one thinks influences the way one acts. This is as true in the field of hypnosis as anywhere else. For instance, when Mesmer hypnotised people, he had them hold on to metal rods sticking from a huge tub which he had 'magnetised'. Because he thought that he was dealing with magnetism, it made sense to postulate that the magnetism could be conducted along such rods. If today this procedure seems quaint, it is only because we do not believe in the magnetism theory any longer.

As was seen, the theories we do believe in are mostly underpinned by the Newtonian epistemology of science. It is therefore logical that this way of thinking would be evident in the way we practise hypnosis. In this chapter the influence of Newtonian thought in the three main areas of hypnotic application, namely research, treatment and training, will be described.

RESEARCH

Say one is interested in knowing whether a new, experimental diet (ED) leads to weight loss. Then, the following experiment can be conducted: One weighs a randomly selected group of people, divides them randomly into two smaller groups and lets one group eat normally (the control group) while the other group (the experimental group) follows the ED. After a specified time the two groups are weighed again. If the mean weight loss of the experimental group is significantly more than that of the control group, one could say that the ED constitutes an effective procedure to lose weight. One could also say that this experiment is an effective way to ascertain the effectiveness of the ED.



In the field of hypnosis it is often assumed that this type of experimental design is also valid in establishing the effectiveness of procedures to enhance hypnotic performance. What is then done is to subject a group of people to a test of hypnotic susceptibility, divide them randomly into two smaller groups, do a hypnotic enhancement procedure such as relaxation training (eg Spanos & Bertrand, 1985) or biofeedback training (Simon & Salzberg, 1981) with one group and some procedure unrelated to hypnosis with the other group. Both groups are then tested again for hypnotic susceptibility. In most of the experiments done in this way the groups did not differ significantly at post-testing so that it was concluded – erroneously, in my opinion – that the intervening activity did not improve hypnotic functioning. (See the figure above.)

In this kind of experiment there is the implicit Newtonian assumption that susceptibility testing, like the measurement of weight, is objective. However, whereas the act of getting on the scale does not change a person's weight in any significant way, the measurement of susceptibility does have an influence on hypnotic performance.

Susceptibility tests are standardised induction procedures in which certain behaviours, such as eye closure, are considered hypnotic, while others, such as the eyes remaining open, are not. People who, for idiosyncratic reasons, cannot/do not want to perform the specific behaviours in the specific circumstances are considered less susceptible to hypnosis *in any context* (Fourie, 1990a). Because the circumstances remain the same, these people would probably act similarly in the post-test to the pre-test, regardless of what happened between the testings. In the case of subjects who perform well in the pre-test, there is a ceiling effect so that their susceptibility scores at post-testing would probably be very similar to those at pre-testing. Therefore, susceptibility testing is not neutral or objective. It defines the situation and hypnotic behaviour in a particular way so that scores would tend to be of a very similar order in two such very similarly defined situations, regardless of the intervening activity.

However, adherence to a Newtonian perspective has led researchers to conclude, on the basis of this type of experiment, that hypnotic susceptibility is relatively constant over time (eg Spanos, 1982). We have argued, though (Fourie & Lifschitz, 1988), that this observed consistency in susceptibility scores reflects a consistency of context, rather than necessarily a consistency of hypnotic functioning.

A Newtonian perspective therefore has a misleading influence as far as susceptibility is concerned. It apparently suggests that susceptibility is similar to weight, while it is not. So potent is the adherence to a Newtonian perspective, though, that it has become difficult to have reports published on experiments in which susceptibility testing was not undertaken. Therefore, the concept of hypnotic susceptibility has become so reified that its existence as a measurable entity, instead of as a concept only, is continually being confirmed by experiments such as the ones discussed.

The assumption that susceptibility measurement is objective and that susceptibility is relatively unmodifiable has led to the research practice of simulation, as pioneered by Orne (1979). In order to distinguish, in hypnosis experiments, between the effects of hypnosis and the effects of the social circumstances (the so-called 'demand characteristics' of the situation) it is often thought necessary to compare the behaviour of a group of hypnotised people with that of a group who are not hypnotised. But if both groups are subjected to a hypnosis-induction procedure, individuals in both groups might become hypnotised, so that comparison becomes difficult. To overcome this problem one group is made up of subjects who score high on a test of hypnotic susceptibility and the other consists of people who score low on susceptibility. The assumption is then that one group will become hypnotised

and the other not. The un hypnotisable group is then requested to simulate hypnosis, that is, to act as they think a hypnotised person will react. In very many experiments in which this design was employed there was no significant difference in the performance of the two groups (eg Ashton & McDonald, 1985; Bryant & McConkey, 1989). The conclusion then was that hypnosis did not make a difference to the behaviour that was studied. However, this conclusion is based on two assumptions which flow from the notions of Newtonian science, namely that hypnosis is an entity separate (and separable) from the context in which it occurs, and that if a person scores low on a susceptibility test, then he/she is un hypnotisable *in any context* (Fourie, 1990a). In the absence of these assumptions the conclusion would be different, namely that the two groups did not differ significantly because they reacted similarly to the different procedures. One procedure involved telling the subjects, implicitly or explicitly, that they were hypnotisable and then subjecting them to an induction. The other procedure entailed letting the subjects know that they were not hypnotisable, requesting them to simulate hypnosis, and then subjecting them to the induction. One could then say that the two groups were equally hypnotised or not hypnotised following these two different procedures. Viewing only one group as 'really' hypnotised is an outflow of a Newtonian way of thinking in which a linear influence of the induction procedure on hypnotic behaviour is presumed and the role of the total context is negated, especially the role of the subjects' expectations and attributions (Fourie, 1990a). In fact the whole idea of distinguishing between hypnosis and 'demand characteristics' is reductionistic.

Because of the notions of reductionism and linearity which are so central to Newtonian thought, researchers usually think that they work with reified entities exerting an influence on one another, and in so doing they disregard possible attributions of meaning (Fourie, 1990a), made by subjects, which could have an influence on the subjects' behaviour. For instance, if known hypnosis researchers follow a procedure which does not involve hypnosis, subjects might still attribute the meaning to the procedure that somehow it has to do with hypnosis. In this way the effect of the non-hypnosis procedure might not be as 'pure' as the researchers think.

For example:

Tenenbaum, Kurtz and Bienias (1990) performed two hypnotic susceptibility tests on subjects. Then, when the subjects returned individually on a later day, they ran a pain reduction experiment in which some subjects received analgesia suggestions in hypnosis and others received

'waking-suggestions', that is, analgesia suggestions without a prior hypnotic induction. These latter subjects could not be expected (contrary to a Newtonian view) not to associate the 'waking-suggestion' procedure with hypnosis. And the results of the experiment seemed to confirm this: there was no significant difference in experienced analgesia between the two groups. However, high susceptible subjects achieved greater analgesia in both conditions than low susceptibles. This is also to be expected in view of the great emphasis placed on susceptibility by the researchers: not one, but two susceptibility tests were carried out prior to the rest of the experiment. It is hardly conceivable that knowledge of their susceptibility level did not influence the subjects' experience of analgesia, regardless of whether the researchers thought they were hypnotised or not. The idea that 'waking-suggestion' in this context would be different from hypnotic suggestion rests on the Newtonian assumptions that induction causes hypnosis in a linear fashion and that hypnosis is some sort of entity separate from the social circumstances.

Another line of experimentation which clearly illustrates the operation of Newtonian thinking involves Hilgard's (1986) concept of the 'hidden observer'. Hilgard and his colleagues (eg Hilgard & Hilgard, 1975) found that, through idiomotor signalling in conditions of hypnotic analgesia, subjects often indicated that they actually did feel pain. So, for instance, a hypnotised subject could verbally report feeling no pain during a cold pressor procedure (one hand immersed in iced water), while simultaneously indicating virtually normal pain by tapping a key with the other hand. By following his neodissociation theory of hypnosis, Hilgard (1986) interpreted this phenomenon as an indication that one part of the subject could observe reality and feel pain while another part could be analgesic, that is, dissociated. The part which was in contact with reality was called the 'hidden observer'. Although Hilgard stressed that this was a metaphor, the Newtonian process of reification soon led to the 'hidden observer' being treated as if it were a 'thing' which some people 'have'. Certainly Hilgard (1986) himself described the 'hidden observer' as discovered, rather than created by the experimental context, as claimed by Spanos and Hewitt (1980).

The Newtonian view that some part of a (hypnotised) person can observe independently from the rest of the person again entails that context and attribution are disregarded (Simon, 1990). When a subject partakes in a study of experimental pain, especially if a baseline pain rating without hypnosis is taken, he/she knows what the pain feels like and how it increases with time. While in the subsequent condition of hypnotic analgesia far less pain is then experienced, if requested to indicate the 'real' pain, many sub-

jects should be able to do so fairly accurately, especially the more 'susceptible' ones (those more willing/able to comply with authoritarian suggestions as embodied in susceptibility tests). This is in line with Hilgard's (1986) observations.

It is interesting to note that simulators can also do this (Hilgard, Hilgard, Macdonald, Morgan & Johnson, 1978), although Hilgard (1986) claims that their responses are not 'real'; which is the way a Newtonian perspective dictates that the behaviour of simulators should be viewed.

The 'hidden observer' effect gave rise to a polemic between Zamansky (1986, 1988, 1989) and Bartis (Bartis & Zamansky, 1986; Zamansky & Bartis, 1985) on the one hand, and Spanos and his colleagues (Spanos, Flynn & Gabora, 1989; Spanos, Flynn & Gwynn, 1988a, 1988b) on the other hand. The Zamansky camp explained negative visual hallucinations in terms of dissociation: consciously the subject does not see a number written on a sheet of paper, but the 'hidden observer' sees it. Spanos and his colleagues conceptualised these hallucinations differently: the subject consciously sees the number, but denies having seen it until social pressure compels him/her to acknowledge that the number had actually been seen. Both camps devised experiments to prove their own view. In doing so they each created a context favourable to their own view. For instance, Spanos et al (1989, p 65) told their subjects that 'people are able to see a page but mentally block out what was on the page ... they could see the figure on the paper, but as they kept looking the figure disappeared ...'. In the same vein the Zamansky camp told their subjects about the existence of the 'hidden observer' and how this 'observer' could see what the subjects 'themselves' could not. Two different expectations were therefore created in the subjects, over and above the fact that some subjects had previously worked with the same researchers and must have formed some idea about what hypnosis 'really' (according to the particular view) is. The two series of experiments were therefore conducted in two very different attributional contexts, leading to different results, each set of which 'proved' the view of the particular researchers. Adherence to a Newtonian way of thinking kept both groups of researchers from acknowledging that their theory actually recursively 'proved' itself. Instead both groups acted as if their observations were 'objective' and not coloured by the consensual reality created by their beliefs in particular theories.

In the light of all this, the implications of a Newtonian way of thinking for research – specifically in hypnosis, but also in the social sciences in general – are clear. A Newtonian view implies atomistic and often reified entities such as 'hypnotic susceptibility', the 'unconscious' and the 'hidden observer'. In so doing it obscures the fact that experiments embody complicated social situations in which expectations, connotations and attributions of meaning

play a major role. Atomism makes for dichotomies which are essentially arbitrary, but which are viewed as 'true' or 'objective', such as 'conscious/unconscious', 'hypnotised/awake', 'simulating/real', 'low/high susceptibility', 'artifact/ essence' – each with an implied linear effect.

The outflow of this is that researchers keep on 'proving' their own theories and assumptions, often in opposition to one another. After some 25 years neither the state nor the non-state position has been conclusively 'proved' in this way. And it will not be 'proved', because, although both are valid views, neither is 'true' in an objective sense. An observation such as Kirsch's (1991a), that more experimental evidence will eventually show which approach is the correct one, can therefore be seen as reflecting a myth based on a Newtonian way of thinking. This myth ensures that millions of deutschmarks, dollars, pounds, rand, whatever, are being poured into research which cannot conclusively 'prove' anything – money which could have been used for much more potentially productive research.

TREATMENT

The way any treatment is carried out rests on the way one conceptualises problems/pathology. Usually and traditionally psychological problems are viewed as residing within the problem carrier. This is exemplified in DSM-IV (APA, 1994). Such problems, even if they are exacerbated by social influences, are first and foremost seen as intrapsychic entities, for example depression, phobias, psychosis. They are often regarded as having physiological bases.

This conceptualisation of psychological problems is of course a Newtonian one. Complex networks of social behaviour are reduced to reified intrapsychic entities like 'depression' or 'schizophrenia' which are viewed as in linear causal relationships with other such entities, such as 'ego strength' or 'defence mechanisms'. All these are seen as objectively 'real' and uninfluenced by the process of diagnosis.

Based on this view and on a state conceptualisation of hypnosis, hypnosis was traditionally used mainly in two ways in treatment:

- in age-regression to achieve abreaction and/or insight into traumatic experiences of the past
- in direct or indirect suggestion to relinquish the symptom.

The Newtonian assumptions underlying this practice are clear: what is revealed/experienced in conditions of hypnotic age-regression is considered

to be objectively and historically true, and hypnotic suggestions are seen as having a linear causal influence on the symptom.

The advent of behavioural and cognitive therapies led to a change in this restricted use of hypnosis. Behaviour theory/learning theory posits that psychological problems flow from faulty learning, that is, the learning of symptomatic responding. Cognitive theory regards symptoms as caused by 'wrong' or irrational thoughts. Both these views therefore constitute deficiency models: the problem carrier has a lack of correct learning or thinking which has to be rectified. Following this reasoning, hypnosis can be used to address this lack. So, for instance, Alladin (1989) used a combination of cognitive therapy and hypnosis in the treatment of depression. The 'pure' cognitive therapy was used to change 'conscious' thinking patterns, while the cognitive therapy in hypnosis provided cognitive restructuring of 'unconscious' materials such as unadaptive emotional and perceptual experiences.

In similar ways it has become common practice to incorporate behaviour therapy techniques into hypnosis. Frankel (1976), for example, has made extensive use of the principles of systematic desensitisation in hypnosis in the treatment of phobic behaviour. In this procedure clients approach the feared situation in a stepwise way by means of imagery in hypnosis. Mastery of each step culminates in a feeling of empowerment when the feared situation is confronted in real life.

Not only desensitisation, but a whole range of behaviour therapy techniques have been used in hypnosis. Most handbooks of hypnosis describe various ways in which this can be done (eg Burrows & Dennerstein, 1980; Kossak, 1989).

Although this behaviouristically and cognitively oriented use of hypnosis is very different from the earlier psychodynamic approaches, it too reflects the tenets of a Newtonian way of thinking. The focus is very much on the individual and on his/her intrapsychic functioning, often expressed in imagery. No great emphasis is placed on the social context in which the treatment takes place. This is reductionistic. Also there is a strong implication that the particular technique has a linear influence on the client's intrapsychic functioning and/or on the problem behaviour. Furthermore the deficiency model implies that the lack of 'correct' learning or thought is objectively real and that the therapist can ascertain this without the process of ascertaining influencing what is found to be the lack.

One of the most popular current approaches to hypnotherapy is the Ericksonian approach. Perhaps its most striking feature is that it is not a

deficiency model. It does not focus on what the client lacks, but on the resources it supposes that the client has. According to Ericksonian thinking many potentials and resources lie more or less dormant in the client's 'unconscious'. These can help to resolve the client's difficulties, but being in the 'unconscious' they are relatively inaccessible. Hypnosis can make them more accessible, can 'activate' them to solve the client's problems (Erickson, 1985; Lankton & Lankton, 1983; Zeig, 1982). Many very creative techniques are employed by Ericksonian therapists to induce hypnosis and to potentiate 'unconscious' resources. However, the Newtonian reasoning underlying their use is clear: the resources are context-independent; hypnosis is a state of consciousness existing independently within the client; and it has a linear effect on the resources. The independent existence of hypnosis as an entity makes it possible to induce hypnosis without the client's knowledge by indirectly addressing the 'unconscious', which is another entity separate (and separable, through dissociation) from the rest of the client (Ritterman, 1983).

An area in which the use of hypnosis seems to be rapidly expanding is family therapy. In the last decade or so numerous books and papers have advocated the incorporation of hypnosis into the practice of family therapy (eg Araoz, 1985; Braun, 1984; Protinsky, 1983; Ritterman, 1983; Schmidt, 1985; Scroggs, 1986; Simon, 1985). In practice, though, this often embodies a strange mixture. Family therapy is usually based on systems theory, whereas the way hypnosis is used in family therapy is usually Ericksonian. As we saw, Ericksonian hypnosis has a distinctly Newtonian flavour, while systems theory is non-Newtonian. What seems to happen in practice then is that problems are conceptualised in systems terms, but that the actual hypnotherapy is carried out as if hypnosis were an entity with particular characteristics which could be used as a force (directly or indirectly) to change symptoms and/or communication patterns in the family (Fourie, 1991b). This can have particular (often negative) implications for the therapy, as illustrated in a case described by Sargent (1986), where family hypnotherapy focused on the intrapsychic functioning of the mother of a rebellious teenager to the possible detriment of the boy.

In this type of work with families hypnosis is reified to such an extent that therapists claim to observe family members 'slipping into' hypnosis during therapy sessions, often when hypnosis was not even mentioned in the therapy. This is presumed to happen when either the therapist (deliberately) or the family (unknowingly) induce hypnosis in an indirect way in a particular family member (eg Loredio, 1990; Ritterman, 1983). This kind of claim reflects Newtonian thinking in that hypnosis is supposed to be able to exist objectively and independently of the context.

The current state of the art in hypnotherapy was well illustrated in a recent case conference organised by Steven Lynn (1991). A description of a client, Mrs B, was given to four renowned hypnotherapists with different therapeutic orientations. They had to present their conceptualisations of the case and indicate how they would treat Mrs B. She was a 25-year-old woman suffering from anorexia nervosa and was referred by her husband, who refused to participate in therapy. Some details of her background were given to the four panel members.

The therapeutic approaches of the panel members were widely divergent. Only one (Araoz, 1991) planned to attempt to involve the husband in the therapy despite his reluctance. An Ericksonian (Zeig, 1991) wanted to utilise Mrs B's resistance in a strategic way to get her to eat. Three of the four members (Araoz, 1991; Eisen, 1991; Horevitz, 1991) indicated that they would use hypnotic imagery, but in different ways. Eisen (1991), a psychoanalyst, would use it to bring to the fore symbolic meanings, whereas Horevitz (1991), a psychodynamic/interpersonal theorist, would apply it to provide a 'safe' place for the client and a feeling of comfort and of connection to the therapist. In contrast to these, Araoz (1991), focusing on the couple, would lead both wife and husband to experience images related to their relationship: the wife to get in touch with what she called a 'dark man' inside her, and the husband to connect with the part of him that is angry with the wife and the part that loves her. Eisen (1991) indicated that she would also use hypnosis to relax the client, while Horevitz (1991) would employ it to master dysphoric feelings such as panic, and to uncover traumatic memory. Araoz (1991) would utilise hypnosis to help the client to get in touch with (not necessarily master) negative feelings such as anger and guilt. Zeig (1991) would use both direct and indirect suggestion to mobilise internal resources and to achieve insight.

Just as the four panel members differed in *what* they would do, so they differed as to *why* they would do it, that is, in their conceptualisations of the case. The anorexia was respectively seen as associated with or caused by disturbed object-relations leading to a borderline personality disorder (Eisen), chaotic and abusive family patterns culminating in dissociative disorder (Horevitz), flawed family communication patterns within which anorexia is a deficient form of communication based on distorted perceptions of self and others (Araoz), and present power struggles with significant others (Zeig).

Amid these vast differences between the panel members, what are the commonalities, if any? What does seem to be a clear commonality is the emphasis on deficiency or disorder. All of the panel members implied that something was wrong, either with Mrs B herself, or with the family, and that this

should be rectified through therapy. Diagnosis of the deficiency, implying objectivity of observation, is therefore an apparent commonality. Some panel members even referred to DSM-III-R in their discussions. Another commonality seems to be the use of hypnosis to promote insight in the client. All four panel members indicated that this was important and that whatever insight was achieved was objectively true, whether it involved symbolic meanings (Eisen) or traumatic memory (Horevitz). The advocated use of hypnosis specifically or therapy in general also seems to imply a conceptualised linear influence of these modalities in rectifying the perceived deficiencies (in this regard see for instance Barabasz, 1989). In fact some panel members warned against certain debilitating (linear) effects hypnosis might have on someone suffering from borderline personality disorder. Also, any perceived disorder or deficiency is abstracted from the actual behaviour and therefore reflects a process of reductionism.

In the light of this it can be stated that, despite many differences in conceptualisation and operation, all four panel members seemed to follow a Newtonian mode of thinking.

It seems therefore that the many current applications of hypnosis in treatment are in most instances firmly based in the Newtonian epistemology of science. However, there are exceptions, notably the Heidelberg group of systems therapists (eg Gester, 1990; Schmidt, 1985), Gilligan (1987) and Matthews (1989), who have succeeded, in different ways, in moving away from Newtonian thinking.

The implications of a Newtonian view of treatment naturally differ from situation to situation and from approach to approach. In the deficiency models, for instance, the conceptualised lack is viewed as objectively real, instead of being seen as a function of the observer's way (style and theory) of observation. In this way the particular approach limits the therapist's observations to that which the approach itself sanctions.

If the approach posits that problems flow from a lack of something, then the practitioner will search for, and find, a lack of some sort. And he/she will believe that the particular lack is real and that it really causes (in a more or less linear way) the problems for which treatment is sought. Other possible 'realities' are not acknowledged because the approach does not make provision for their existence. In other words, if one looks at object-relations, for instance, then one 'observes' them and one cannot pretend they were not there.

In a converse way, if one looks for intrapsychic resources, one would 'observe' them, like the Ericksonian therapists. And one would apply techniques posited by the theory to potentiate them. In so doing one would not regard other techniques as 'suitable' in the particular case, because they do not fit with the 'reality' which one thinks one has 'objectively' observed.

In treatment, therefore, Newtonian thinking restricts practitioners conceptually and practically, while simultaneously blinding them to this restriction. Also, adherence to the notions of linearity of influence and of objectivity is reflected in therapists acting as if they or their techniques can unilaterally change clients' behaviour in a direction determined by them or their theory. No wonder that success rates, where they exist, are generally disappointingly low (eg Holroyd, 1991).

TRAINING

The aim of hypnosis training to an extent determines the content of a particular training programme. If the aim is to produce competent hypnotherapists, training usually includes general psychotherapeutic skills, knowledge of psychopathology, induction methods and specific hypnotherapeutic procedures. On the other hand, if the aim of training is to equip dentists to employ hypnotic analgesia in their practices, the training programme is much more restricted, comprising mainly induction methods and procedures for eliciting analgesia and controlling the gagging reflex (see eg Aleksandrowicz, 1989).

There is one aspect, however, that is common to all hypnosis training programmes, regardless of the aim of the programme and the theory of hypnosis which is followed. This is training in induction methods. Even though some schools of hypnosis maintain that subjects actually hypnotise themselves (eg Baker, 1990), their trainees are still taught traditional induction procedures. And all these procedures imply that hypnosis occurs intrapsychically within the subject and that it is caused or brought about by the procedure. Even where the more modern Ericksonian techniques are taught, there is the implication that these bring about an altered state of consciousness in a more or less linear fashion.

When so-called 'deepening techniques' are taught, there is a similar implication, namely that they have a linear influence on the subject's intrapsychic functioning. They also give credence to the reified concept of hypnotic 'depth', as if this 'depth' exists as an objective measurement. In the same vein, if the use of susceptibility scales is taught, credence is given to the existence of 'susceptibility' as an entity (a skill or a trait).

As was seen, hypnotic treatment is firmly based in Newtonian thinking. Therefore, in teaching hypnotherapy skills it is inevitable that this underlying mode of thinking would also be taught.

It is to be expected that hypnosis training, regardless of its specific aim, would reflect the uses of hypnosis in research and in treatment along with the mode of thinking in which these practical activities are embedded.

In this way students of hypnosis are trained to focus on the subject/client and his/her intrapsychic functioning, rather than on the psychosocial context or ecology in which the activity called 'hypnosis' takes place. In this way students are not taught or trained to exploit fully the potential within the *situation* (not within the *client/subject* as claimed by the Ericksonians). A concrete example: in most hypnotherapy training programmes students are taught how to establish rapport with the client prior to the induction of hypnosis. Part of this process usually entails dispelling clients' so-called misperceptions (see eg Kossak, 1989). By doing so, however, client perceptions and attributions which could potentially have been utilised very fruitfully in therapy are, if not completely dispelled, at least discredited. It has been shown elsewhere (Fourie, 1991a) how some of these 'misconceptions' can be used therapeutically, but not if they had been questioned previously. Viewing certain client perceptions as 'incorrect' and in need of being removed rests on a Newtonian way of thinking about hypnosis as an entity with certain (and only certain) characteristics. This is limiting. Nowhere, to my knowledge, are students trained, for instance, how to *utilise*, instead of dispel, clients' fear of hypnosis.

CONCLUSION

It is clear that in all three areas of application of hypnosis – research, treatment and training – the common thread between operators of different persuasions is to be found in their adherence to an underlying Newtonian way of thinking. Therefore the limitations inherent in an epistemology of reductionism, linearity and objectivity are apparent in most instances where hypnosis is applied, regardless of the particular approach followed by the operator.

In the area of research this means that money is wasted on attempts to 'prove' unprovable points of view, attempts which, even worse, recursively confirm the 'existence' of reified entities such as 'hypnosis' and 'susceptibility', and the unmodifiability of hypnotic performance.

In treatment the Newtonian view places judgement about the client firmly in the hands of the therapist, whose process of diagnosis is assumed to have no influence on the client, but whose techniques of therapy are supposed unilaterally to change client/family behaviours in a predetermined direction.

Training indoctrinates students with this way of thinking and operating and ensures the perpetuation of this tradition.