



Hypnotic and Subtle Influence

Volume I: Hypnosis in the Scientific Eye

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Organization

This book is divided into two volumes: *Theory* and *Practice*. The current volume, on theory, is divided into three parts, representing three different ways of looking at hypnosis: **Describing, Measuring, and Explaining**.

Part one: **Describing Hypnosis** discusses the various ways that hypnosis relates to our view of the mind. We'll look at the relationship of hypnosis to other forms of psychological healing, the concept of suggestion, and the construct known as the "unconscious mind." Finally, we'll look at three of the most common ways to describe hypnosis, as a special state (*trance*), as a special temporary relationship (*rapport*), and as a form of imaginary play (*role taking*).

Part two: **Measuring Hypnosis** looks at how hypnosis has been approached scientifically for study. There are three main types of measurement: scales for measuring suggestibility, the concept of "depth of trance," and the specific measurable effects of suggestion on the mind and body.

Part three: **Explaining Hypnosis** takes what we have learned from the measurements in part two, and takes a tour through the maze of theories. We will look at what there is to explain, how various theorists have explained it, what's left to explain, and finally look at the prospects for a way to integrate the various theories in a meaningful way.

In the second volume, we will look at the common ways that hypnosis is actually performed, and how we can get the most from it.

Describing Hypnosis

1

Some say that it is a powerful way to communicate with the mysterious subconscious mind. Some claim we can stop smoking or lose weight where other methods have failed.

Others say that it is nothing more than speaking to a relaxed person, and that we do it all the time in our daily life.

On stage, it looks like some sort of mysterious mind control. People forget their name, or cannot rise from a chair, or fall instantly in love with someone selected by the hypnotist.

What is really going on ?

Is it a powerful way to influence our minds, or a figment of our dramatic imagination ?

What is this thing we call hypnosis ?

Chapter 1

The Magic of Imagination

The Power to Alter Our Own Awareness

“The scientist’s voice need not be the mere record of life as it is: scientific knowledge can be a pillar to help humans endure and prevail.”

Antonio Damasio, from Descartes’ Error

It has become a disturbing cliché that Western medical schools train doctors to recognize and intervene in disease of the body, while ignoring human suffering. Most disturbing of all is that the cliché is largely true, and goes far in explaining the proliferation of seemingly more humane “alternative” healing concepts derived from the folk traditions of various cultures.

At the very least, suffering appears to be of secondary concern in Western medicine, as it is taught. As medical science emerged slowly as a distinct discipline, there were strong pressures to separate the apparently ephemeral concerns of the “mind” from the seemingly more permanent and mechanical concerns of the “body.”

The result of these pressures was the creation of two very strong trends: (1) priority of “body” over “mind,” and (2) priority of pathology over health. Doctors learn something about categories of sick mind, but almost nothing about the functions of the mind in general. Similarly, the maintenance and improvement of health is a very low priority compared to the treatment of disease by surgery and drugs. This situation has led to remarkable progress in these dramatic treatments, but a deep rift between the healers and the suffering of their patients.

For a number of years, scientific research has been revealing evidence that both of these trends have had some palpably negative consequences on the quality of health care.

For one thing, the psychological consequences of illness are clearly not a secondary concern, but an important factor in the outcome of treatment. We have only just begun to understand the ways in which expectations, motivations, and attitudes influence the healing process, either negatively or positively.

Secondly, our psychological state is also an important factor in the origin of illness. The strong cultural emphasis in unraveling the human genome has greatly obscured another important finding. There are parallel scientific findings that gene expression is modulated by the same biological regulatory processes that give rise to psychological functioning.

That is, the “mind” and the “body” are not separate realms. Both result from the same biological processes that evolved to adapt us to our environment. The mind is truly embodied, and the functions of mind are a direct result of the state of the body. The state of the body is an important aspect of the mind, and mental state is part of the regulation of the body.

Nowhere does this close dependency of mental and biological realms come under clearer relief than in hypnosis, the best studied example of the influence of mind on body. Many biological processes quickly and dramatically come under influence of suggestion, and our normally stable sense of self-control can be altered to create extraordinary experiences.

There are many strong perspectives on this in each culture, ranging from the religious view of extraordinary experience as “possession,” to the medical view of extraordinary experience as “chemical imbalance.” Perhaps the most remarkable is the emerging scientific understanding of the nature of human consciousness as a complex result and important aspect of biological regulation.

Adaptive Self-Regulation

*L*et's get a big picture first. For reasons that will become clear in time, we are going to be doing some synthesis between different scientific fields. This means that we had better be crystal clear on our central organizing principles from the start.

The phenomena of hypnosis seem at first to occupy a domain of their own, with its own rules. Somehow, many seem to believe, hypnotized people enter a world of their own where all sorts of new experiences and even new powers become possible.

To put this into better perspective, it is rather like the more commonly described experience of two lovers, entranced in their own world of mutual shared meaning. From the outside, their behavior seems unremarkable, except for subtleties of the way they respond to each other and the way their communication changes to reflect increasing intimacy. Yet to them, the experience is full of delightful and profound significance, with wondrous new possibilities. The scientist who observes only their outward behavior misses a great deal, perhaps even rendering the situation incomprehensible.

In hypnosis, there is the sometimes dramatically altered personal experience of the “entranced” person, and their less remarkable, perhaps subtly altered, external behaviors. In order to confront hypnosis scientifically, we must come to grips with the experience of being hypnotized, and not get distracted by its bizarre reputation and often shady history.

To discuss something from a scientific perspective, we must consider it within the perspective of existing sciences. A hypothesis cannot exist in isolation. It is part of a web of ideas that include our assumptions about the conditions we are observing.¹

So we find that the nature of hypnosis changes, like an elusive chameleon, as we look at it from different points of view. It involves human experience and behavior, so it is a matter for **psychology**. And psychology has a number of different ways to look at things, it is not a single, unified theory by any means. It is in psychology that we find most of the past research into hypnosis.

Like everything done by living organisms, hypnosis also is a matter for **biology**. It is in our biology that we find the most remarkable view of hypnosis, albeit in its infancy. Here it provides clues as to how our mind and body heal themselves and how we generate our conscious experience.

 **biology** is the science of life. If there is anything that separates living from nonliving things, and represents the central principle of biology, it is **adaptation**. Life adapts to its environment in order to survive. It adapts over a long, *evolutionary* time-frame, and it also adapts over briefer, *behavioral* spans.

¹ Quine, W.V. (1961). *From a Logical Point of View*, Harvard University Press.

Living things that adapt well enough to survive to reproduce themselves are well represented among us, unless something else kills them off. So the basic message of biology is that life finds a way to survive.

How do living things manage this feat we call **adaptation** ? What's the trick ? The central theme running through biology is **diversity**. Living things manage to produce a miraculous degree of diversity from a tiny amount of raw materials. "The hallmark of life is this: a struggle among an immense variety of organisms weighing next to nothing for a vanishingly small amount of energy."²

The result of this is that there are a huge number of plants using most of the available energy from the sun, and an energy chain with a much smaller number of large animals at the other end.

As one of those relatively few large animals that lives off of plants and other animals, *our behavior has to adapt quickly to our environment*. The trick accomplished by the evolution of animals is remaining intact while adapting so quickly.

Remaining intact while adapting rapidly to environmental changes requires a special kind of internal mechanism. It requires a mechanism for maintaining a relatively stable internal environment in our body while we move around in different external environments and face vastly different kinds of challenges. This is one key to the common biology of animal life. Animals, by their very nature, must process a tremendous amount of information from their environment very rapidly, producing useful responses. While this may seem obvious, the magnitude of the amount of information and how rapidly it must be processed is often taken for granted.

Part of responding to our environment is internal regulation. The idea that a living thing needs to keep its internal environment within specific bounds, in spite of changes in its external environment, is known technically as **homeostasis**³. However, our body does not have a single range in which it keeps blood pressure, temperature, acidity, and so on. It has different *homeostatic set points* for these qualities that are used under different conditions. This logical extension of the concept of homeostasis is sometimes known as **allostasis**.

When we are thrown into a challenging situation, the parameters of our body adapt to the effort we are putting out. The brain and nervous system

² "The most wonderful mystery of life may well be the means by which it created so much diversity from so little physical matter," E.O. Wilson, *The Diversity of Life*, 1992, Harvard University Press, p. 35

³ A theory, circa 1926, developed by physiologist Walter B Cannon. It is based on the earlier (1854) concept of a *milieu interieur*, part of the foundation of experimental medicine. See M J Apter, (1966). *Cybernetics and Development*, Oxford Press, and J Fulton, (1966). *Selected Readings in the History of Physiology*, Springfield, Ill.

organize a systematic response that may influence virtually any cell in the body through various mechanisms.

This ability to shift our state to respond to a challenge is more important than it may at first seem. We often think of this in terms of an “emergency” response, the adrenaline rush that supposedly lets little old ladies lift cars off of babies with their bare hands. Yet it is more fundamental than that.

Without the adaptive changes in blood pressure caused by the stress chemicals known as *glucocorticoids*, people fall into shock from the mildest efforts. This is seen in a condition known as Addison’s Disease. Our ability to regulate our own internal environment to meet changing situations is extremely important to both health and physical capacity. It is so deeply embedded in our biology that we commonly take it for granted until something goes wrong with it.

The better an animal can **anticipate** challenges in advance, the more likely that they can also activate their own response mechanisms, even independently of a real challenge. This is part of the evolutionary course taken by the animal species most similar to human beings. So it is that human beings, with their unique ability to anticipate situations that don’t yet exist, can create their own responses, even when completely inappropriate to the situation at hand.

The ability to regulate ourselves back into *allostatic balance* goes hand in hand with the ability to take ourselves out of *allostatic balance*. The way we interpret the world, and thus the way we regulate ourselves to adapt, is an important influence on our health and quality of life.⁴

What we will discover here is that hypnosis can provide an unusually good way of **isolating our ability to self-regulate**. We are able to alter the way we interpret a situation, and therefore influence our own physiological responses as well. As we discover why this is true, we’ll see some remarkable things that hypnotic phenomena teach us about the human mind and brain.

Altering Our Own Experience

⁴ It is our individual interpretation of a situation, not how the situation might be seen “objectively” by other observers, that determines the kind of response we mount. Our interpretation of a situation depends on various things, especially our **sense of control** over the outcome, and *the way others around us seem to be interpreting the situation*. Those unfamiliar with the fascinating modern field of stress research and wanting to learn more may especially enjoy Robert Sapolsky’s entertaining and informative *Why Zebras Don’t Get Ulcers*, 1998, W.H. Freeman and Co..

*“The mysterious domain of hypnosis emerges, then, as a kind of fairy palace, less than real but more than illusion. It has, one might say, sufficient substance in its foundations to have deceived mortals rather well. Especially has it ensnared savants of past generations, who in turn have misled the public at large. But from our vantage point at the end of the twentieth century we can begin to see that there is no one path by which it may be reached, no one material of which it is built, no one hidden chamber containing all its secrets, no one key which will open all its doors, and no simple formula by which it may be dispelled. **Those who set out to investigate it should beware of the bafflements to come.**”*

Alan Gauld, from “A History of Hypnotism”

If hypnosis is a convenient way of making use of our self-regulation abilities, how does it work ? What happens to people when they are “hypnotized ?” And why is it taking us so long to understand the details of how it works ?

The need to maintain homeostasis in different environments leads to some interesting properties, such as a tendency to evolve different **motivational states**, and different **ways of perceiving** the world around us, each suited to different kinds of conditions.

What State Are You In ?

The most common way for hypnosis is to be described is as an **altered state of consciousness**. That is, a state where our responsiveness to suggestion is increased or enhanced, or in which we become more absorbed or less critical, or perhaps just more intensely focused. This seems a nice, intuitive way to explain how hypnosis taps into our ability to self-regulate, and has a lot of support from research. But just how does it work ?

Perhaps we change into some sort of different brain state that lets us reprogram ourselves, sort of like putting a computer into diagnostic mode, or finding a maintenance tunnel into our mind ? This seems to be the image we get from the concept of hypnosis as an altered state.

A large and growing number of academic psychologists disagree with this definition, taking two kinds of issue with it. The first is that the

concept of *suggestion* is not well defined, and the second is that the concept of a *state* is not well defined.

Both of these concepts, *suggestion* and *state*, seem to cry out for a better understanding in terms of existing sciences, or else a new science that can help understand them. The problem is integrating the diversity of human experiences, including experiences during hypnosis, with larger psychological theories and theories of brain function.

The central question is whether the phenomena associated with hypnosis can be explained better in terms of existing psychological or neuroscience theory, or whether they require new theories, or require adjustments to existing theories.

In this book, we will examine the evidence, and find that the science of the human mind is still in its infancy. *We still have a very sketchy and highly speculative understanding of how the brain generates the experiences we have.*

There are two remarkable things we will conclude as well. One is that **we don't need a special theory of hypnosis to explain it**, just a better understanding of how the mind and brain operate in scientific terms. The other is that **the principles associated with hypnotic influence are very fundamental and very useful in daily life**, not a sideshow or a form of malevolent mind control.

If hypnosis exploits a “back door” into our mind, it is a door that is open at other times as well, so what is special about hypnosis ?

Few would argue that our experience changes from moment to moment. The **contents** of our mind obviously change. Sometimes even the very **structure** of our awareness, the way we perceive and think about things, seems to change. One moment we are thinking about an upcoming deadline, and all of our mental resources are focused on the problems related to that goal. The next moment we are noticing an attractive stranger walking by, and our mind begins to focus in that direction, creating a whole new set of thinking and feeling patterns.

Are these different ways of thinking and feeling distinct enough to call them **states of consciousness** ? Is hypnosis an “altered state” in this sense ?

Emotional States

It's tempting to say that we are in a *different state* when we feel differently. A depressed state, a happy state, a jealous state, a calm

state, or an aroused state. The easiest way of thinking about stable subjective experience is in terms of how we feel, the experience of our own strong emotions. Our intuition of our “state” is largely the subjective experience that corresponds to situational emotional responses.⁵

We act differently in different emotional states, we think differently in different emotional states, we feel differently in different emotional states. I’m a whole lot more likely to act rashly when I’m feeling intensely jealous than when I’m feeling calm or happy. The way I interpret things is entirely different in those two “states.”

Theories differ as to the cause and effect relationships here. Do I perceive something consciously and then respond to it with emotion, or do I have an automatic emotional response and then perceive it consciously? In general our thinking, feeling, and acting all seem to influence each other in a roughly circular way once an emotional response is somehow begun. There are “automatic” elements to our response, yet there are also critical points where we can consciously veto our automatic responses and feel as if we are taking control in a self-aware way.

When I’m depressed, everything seems like evidence that the situation is hopeless. When I’m happy, the same negative things seem less relevant, or even funny. It’s easy to see the concept of an “altered state of consciousness” when we look at strong emotions which color both our experience and our behavior.

Hypnosis is not associated with a particular strong emotion, however. The comparison with emotional states doesn’t quite work when we look at the diversity of emotional states that people experience during hypnosis, and their similarity with our emotional states at other times.

There is some connection between hypnosis and emotions. It is well known that people who fear hypnosis have difficulty with it. Also, our emotions are often *more accessible* during hypnosis, one of the reasons it is used for psychotherapy. There must be *some way* in which emotional state relates to hypnosis.

⁵ There is currently no single unified theory of emotion in science. There is an ongoing academic question as to whether we cry because we are sad, or we are sad because we cry. There is scientific evidence for both views. Most theories consider that the way we think and our physiology are both influences on the way we feel. Most theories also consider our internal and external responses to differ in different emotional states. See S. Schacter and J E Singer, (1962). “Cognitive, Social, and Physiology Determinants of Emotional Estates,” *Psychological Review*, vol. LXIX, 379-399. For a more general overview of theories of emotion and the support claimed for them, see also Paul Griffiths’ *What Emotions Really Are: The Problem of Psychological Categories*, University of Chicago Press, 1997.

Yet no particular emotional state seems to distinguish hypnosis. It's more like our ability to regulate our emotions is altered during hypnosis. Seemingly, the *role of our conscious awareness* in the unfolding emotional response is altered.

Activation States

Another way that we think of being in different states at different times is related to how **alert** we are. This is different from an emotional state, and probably is served by a different collection of brain mechanisms.

Our feeling of alertness goes through a natural cycle during the day, sometimes more alert and sometimes less alert. We experience this as being more or less responsive to things in our environment in general, feeling more or less motivated to take initiative, and feeling that we can think more or less clearly in general. A good example is the lull that many people feel in the mid-afternoon, especially after a big lunch.

Activation states vary from alert and attentive to drowsy and then through the various stages of sleep. Under certain conditions we also experience (or perhaps more accurately, we *don't* experience) even lower states of activation, such as unconsciousness and coma.

The emotional states are difficult to distinguish in the brain from the outside, although it can be done to some extent with sophisticated imaging equipment. The activation states, on the other hand, are fairly easy to distinguish. They correspond to the degree to which our autonomic nervous system is activated, and the overall frequency of electrical rhythms that can be measured from various parts of the surface of the skull. We can often reliably detect whether someone is awake or asleep, and which stage of sleep they are in, through relatively simple physiological measurements.

States of alertness probably have a little more to do with hypnosis than emotional states do. Most of the time, we ask people to relax during hypnosis, and we frequently use sleep as a metaphor. The very term *hypnosis* is named for the Greek deity whose realm was sleep, and we still use the term *hypnotic* for drugs that help people fall asleep. The terms *hypnogogic* and *hypnopompic* are used to describe the states of activation we experience as we pass between sleep and waking. The term *somnambulism* has been applied to both sleep walking and very "deep" hypnosis.

Even more importantly, during hypnosis we seem to *lack initiative*, at least physically, and sometimes appear to be sleeping, or in a sleep-like

state. Then can we simply think of hypnosis as an activation state, like a stage of sleep ?

Early researchers were tempted to assume the obvious, that hypnosis is a stage of sleep. But when they tested this idea it quickly fell apart. Despite the passive appearance of someone doing hypnosis, **the physiology of hypnosis is nothing like sleep in any obvious way.**

Hypnosis is in fact indistinguishable from being awake when you use any of the standard physiological measurements that help to distinguish sleep from waking. In addition, there are effective forms of hypnosis that do not involve the sleep metaphor, nor even relaxation, but are awake and alert and focused. It seems that producing a lowered state of activation is *only one way of doing hypnosis*, and is not the essence of hypnosis in any sense.

Decreased activation appears to be one way to create the psychological conditions conducive to hypnosis, but **no particular state of activation seems to characterize hypnosis !**

States of Consciousness

Since hypnosis is not an *emotional state*, and it is not an *activation state*, we find that we are at a loss to describe it in simple neurological terms, or even in psychological terms. Why don't we have a scientific way of describing this kind human experience ?

STUDYING HUMAN EXPERIENCE IN SCIENCE

I think there are two main reasons why we do not yet have a coherent science of human subjective experience sufficient to explain hypnosis.

The first reason is that we have just begun to develop and apply the sophisticated tools that would allow us to see what the brain actually does under different conditions.

A number of researchers in the 1960's and 1970's hypothesized about consciousness and wondered what the brain was doing during "altered states." At that time, they had relatively primitive tools to work with,. They had to formulate their theories based on measurements made with those tools. Thus, we have the legacy of the **beta state** the **alpha state**, and the **theta state** that is often still found in nonscientific books about hypnosis. These loosely reflect research based on statistical frequency analysis of electrical patterns recorded from the scalp.

As it turns out, these particular patterns don't reliably represent states of consciousness at all. They sometimes correspond roughly to states of arousal or activation, but this is not an adequate description of hypnosis.

We sometimes see distinct EEG patterns occurring during meditation or hypnosis, at least at certain critical points, but very little real insight as to what the brain is doing differently under these conditions. Simple frequency analysis of the scalp EEG rhythms give us only a vague clue as to what the brain is doing.

Simple frequency analysis of the scalp EEG rhythms give us only a vague clue as to what the brain is doing. It does not provide a unique signature of the elusive hypnotic state. Even more sophisticated nonlinear or *chaotic* analysis of EEG patterns has failed so far to distinguish **being hypnotized** from other conditions.⁶

The second reason why we don't yet have a scientific study of human experience is that we have a long history of isolated and specialized sciences. We have most often relied on measuring physiology, or observing behavior, or listening to verbal reports, rather than combining these different kinds of observation. Scientists have also, and for good reason, often mistrusted *introspection* as a reliable means of studying how the mind works.

Our human sciences have traditionally tended to be specialized and isolated from each other, failing to learn from each others' insights. Only recently have we begun true interdisciplinary science suitable to revealing how the mind/brain works. Interdisciplinary science is extraordinarily challenging because it requires people to be fluent in multiple disciplines and able to work together in teams that may speak different scientific languages.

With both increasingly sophisticated physiological study of the brain and the increasing use of interdisciplinary approaches, we will gradually begin to reveal the evolved architecture of the brain. Most importantly, we will begin to understand how human experience is actually embodied in that architecture.

This is a daunting task, not only because of its scientific immensity, but because of its implications. As we come closer to understanding human experience, we may well find our most cherished beliefs about the nature of universe and the human soul begin to dissolve. Even our common sense about how our mind works may turn out to be wrong in some ways.

⁶ Ray, W.J., Wells, R., Elbert, T., Lutzenberger, W., Birbaumer, N., (1991). "EEG and chaos: Dimensional estimation of sensory and hypnotic processes." In D. Duke & W. Pritchard (Eds.), *Measuring chaos in the human brain* (pp. 199-215). Cleveland, OH: World Scientific.

What are we really talking about when we say “state of consciousness ?”
And how does this relate to hypnosis ?

The **qualities** of how we think change from one situation to another. We not only *think about different things*, but we also *think about things in a different way* in different situations. *We feel differently* in different situations, and we use *different strategies* to meet the challenges we are facing at the time. This is what we mean when we talk about “states of consciousness.”

We mentioned the simplest (trivial) example, the difference between being awake and being unconscious. A better example is the difference between being awake and dreaming. The contents of our mind in a dream can conceivably be similar to those during waking, but the structure of our experience, its qualities, and the mental processes and strategies we use are very different.

We also mentioned emotional states, where the different ways we feel and think are even more obvious from state to state.

There are a number of other cases that are less clear, such as **hypnosis**. There is a long history of debate in science over whether hypnosis is an *altered state of consciousness*.

The question ultimately resides on whether we can describe consciousness well enough to know when it has been meaningfully altered !

Experience is varied from moment to moment and from person to person, and verbal reports can often be unreliable. But there are still interesting patterns in human experience. The mind arises from a complex but unified biological system, so its **structure** can be expected to have some order.⁷

Our mental processes are the product of an evolutionary process, just as is the shape of our body. The fact that experience is so heterogeneous does not mean that there is no structure to it. The entities and processes studied in physics are also very diverse, yet we find meaningful and useful physical theories to help understand them.

⁷ This is just a very brief allusion to the idea that human subjective experience itself can be studied scientifically. Philosopher Owen Flanagan has made a compelling argument that a useful scientific theory of subjective experience can be constructed by combining several different kinds of observation such as verbal reports, brain activity, and behavior. See Flanagan, Owen, (1992). *Consciousness Reconsidered*. The MIT Press.

Most of the interesting aspects of hypnosis involve alterations in subjective experience, so understanding the structure, phenomena, and processes of subjective experience is important to understanding hypnosis. Only by taking human subjective experience seriously can we begin to understand the phenomena of **hypnotic influence**.⁸

THE VALUE IN STUDYING HUMAN EXPERIENCE

The way we experience our selves and our environment can change dramatically from one time to another.

Hypnotic influence means changing the way that people experience themselves and their environment. Though there are exceptions, these changes are most often real, *not faked*, and *not a pretense* simply to please an audience.

This change in experience has commonly been described in terms of an altered state of consciousness, where people become more responsive to suggestion from another person following an induction procedure. This concept of an altered state has become part of both the popular and the scientific views of hypnotic influence. However, it has also been part of the mystique that has led to the perception that hypnosis is somehow a refuge of charlatans and quacks rather than a legitimate art of psychological healing.

The concept of a **hypnotic trance** has connotations of being a *“special” state where the normal principles of behavior and cognition no longer apply*. This view has been a source of mystique for the public and even a source of fear and confusion for many scientifically trained psychologists who might otherwise use its principles.

This common view of **trance** is a false perception. The psychological elements of the hypnotic situation are a particular case of the same general principles governing behavior and cognition at other times.⁹

It may well be that our experience and mental processes are altered in some stable and meaningful way during hypnosis compared to other times. This does not have to mean that the usual principles of psychology no longer apply ! Hypnotic influence does provide us with some *additional* principles. We need a better scientific way of describing human experience and how it changes from one moment to the next.

⁸ People experience different things in hypnosis, yet we often think of it as the same state from one person to the next. The usefulness of thinking of hypnosis as a relatively discrete state of consciousness is argued effectively in Sheehan, P.W. & McConkey, K.M. (1996). *Hypnosis and Experience: The Exploration of Phenomena and Process*. Brunner/Mazel. (p. 16)

⁹ Cardena, E. & Spiegel, D. (1991). “Suggestibility, absorption, and dissociation: An integrative model of hypnosis.” In J.F. Schumaker (Ed.), *Human Suggestibility: Advances in theory, research, and applications* (page 104). New York: Routledge.

The additional principles and techniques we associate with *hypnotic influence* can be used to help alleviate human suffering, and they are a part of our daily lives in the way we learn and communicate. They do not have to be any more exotic than using our imagination or learning to relax or pay attention in a particular way. Yet *hypnotic influence* is very useful. Adding *hypnotic* elements to psychotherapy can not only increase the beneficial effect of therapy, but also significantly reduce the rate of relapse.¹⁰

BEYOND HYPNOSIS: PRINCIPLES OF HYPNOTIC INFLUENCE

There is no compelling reason to believe that *the way human experience is altered* during hypnosis is confined to hypnosis. Just as we can feel drowsy or aroused in different kinds of situations, our experience may be altered in a “hypnotic” way in different kinds of conditions.

What exactly are the *hypnotic* elements of our life ? And why should the *hypnotic* aspects of a situation increase our capacity to change and influence each other ? We will cover this in great detail because it tells us some very profound things about the way we evolved and the biological and social nature of our species.

Removed from their traditional mystique, the principles of human influence seen in hypnosis can be made more understandable, more usable for our benefit, and less likely to become an unwanted part of our lives.

In order to strip away the mystery of the so-called **trance**, without also stripping away the real phenomena of experience that it reveals, we have to make a serious attempt to explain certain aspects of human subjective experience. As it turns out, this is far from an easy task, at least for science.

To understand hypnosis, we have to tackle issues of volition, motivation, memory, perception, and emotion. Not because suggestion is so special, but because human experience in general is not yet well understood scientifically, and hypnosis is all about subjective experience.

This makes hypnosis, like all studies depending on human experience, an extremely complex topic. To navigate it, we have to take a stand on certain topics that scientists consider controversial, and which we have

¹⁰ The remarkable research-based conclusion in one recent scientific text was that hypnosis should be adopted as a standard component of therapeutic interventions ! Kirsch, Irving, Capafons, Antonio, Cardena-Buelna, Etzel, Amigo, Salvador, (1999). “Clinical Hypnosis and Self-Regulation: An Introduction,” in Kirsch, Capafons, Cardena-Buelna, & Amigo, *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*, APA Press. (Page 4).

only begun to understand scientifically. In attempting to resolve the controversies over hypnosis, we are forced to integrate data from a variety of different fields and peer into the very foundations of the human mind.

The topic we are investigating, hypnotic influence, though it certainly involves the brain, is not simply a matter of activating a well defined single mechanism. There are actually only a tiny subset of real behaviors and experiences that might be described in that way. It appears that earlier attempts to view hypnosis in that way were doomed to fail.

The many attempts to explain hypnosis in terms of specific brain patterns for a special state of consciousness have failed for the most part, as they eventually must. We have come to realize in general that people influence each other reciprocally, and that behavior, thoughts, feelings, and environmental influences all influence each other in complex ways.

The idea that human behavior can be predicted *by expected outcomes and their value* is known as **social learning theory**. The pioneer of social learning theory was Julian B. Rotter, who published his theory in the 1950's.¹¹

Rotter's idea was further tested and extended by Albert Bandura.¹² The social learning theory of Bandura emphasizes, among other things, how we get cues from each other to determine how to interpret a situation. This turns out to be a central aspect of hypnotic influence. **The social context provides us with essential information we use to determine the meaning of a situation for us.** The meaning of the situation for us is in turn is a huge factor in determining both our experience and our behavior

Our conceptions, beliefs, and perceptions of ourselves are all crucially important to what we experience and how we act under all conditions.¹³ These things are all influenced significantly by the way people around us are behaving as they interact with us.¹⁴ Hypnotic influence can be seen

¹¹ Rotter, J.B. (1954). *Social Learning and Clinical Psychology*. Englewood Cliffs, NJ: Prentice-Hall.

¹² Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.

¹³ Bandura, A. (1977). "Self-Efficacy: Toward a unifying theory of behavioral change." *Psychological Review*, 84, 191-215.

¹⁴ Bandura, A. (1978). "The self system in reciprocal determinism." *American Psychologist*, 33, 344-358.

as an extension of these basic principles of social influence, *without in any way denying the legitimacy of hypnotic experience.*¹⁵

“The central hypothesis of social learning theory is that *behavior can be predicted by the expectancy that it will lead to particular outcomes and by the value of those outcomes.* Thus, the expectancy that one will experience hypnotic responses, and the positive value that is attached to those experiences, lead people to engage in various goal-directed behaviors aimed at generating them. At the most mundane level, this includes seeking out opportunities to be hypnotized and cooperating with the hypnotist’s instructions. More importantly, **subjects may devise and implement various cognitive strategies aimed at the goal of experiencing hypnotic suggestions.**”¹⁶

While we have found that dramatic alterations of experience during hypnosis are very real, we have also found that they are not limited to situations we would call hypnosis. They occur under a wide variety of conditions, and appear to be **part of the way human beings generate their own experience in general**. We therefore have to understand human experience in general to begin to understand **hypnotic influence**.

Four Themes

Hypnosis is largely about regulation of our own body processes and experience through imagination.

We’ve been skirting around the question of what we mean specifically when we talk about the “hypnotic experience.” Four themes characterize hypnosis for most people. These themes are also common to virtually all careful studies of hypnosis from a scientific perspective:

1. **Suggestion -- Response to cues in a way that is not planned or controlled consciously.** Our intuitive view of ourselves is that we perceive things consciously, think about them or react to them emotionally, and then act on them. The discovery that our minds and bodies are capable of responding without our conscious involvement seems mysterious at first, but makes biological sense. It is very closely related to the concept of *involuntariness*, which can also mean normally voluntary processes which appear to be *outside of*

¹⁵ An example specifically applied to hypnosis can be found in Kirsch, Irving, (1991). “The Social Learning Theory of Hypnosis.” In Lynn, S.J. & Rhue, J.W. (eds.) *Theories of Hypnosis: Current Models and Perspectives*, Guilford Press. Pp. 439-465. Here, the idea of a **response expectancy** is developed as an important determinant of involuntary action, just as an **intention** is an important determinant of a voluntary action.

voluntary initiation or control. That is, for some reason we sometimes don't attribute our own actions to our conscious intention. Psychoanalysts attributed this to unconscious motives arising from instinctual drives, while modern theorists have gotten away from the drive model and have attributed it to specific kinds of cognitive processes.

2. *Self-Regulation* -- **Bringing involuntary processes under strategic control.** Our ability to purposely influence things that we normally consider outside of our voluntary control, or at least only partially voluntary. This includes thoughts, feelings, and body processes. We generate actions by forming an **intention**, but things experienced as *outcomes* rather than *actions* are instead preceded by an **expectancy**. In hypnosis we create apparently non-volitional outcomes by manipulating expectancy rather than forming a conscious intention.
3. *Intimacy and Openness* -- **Cognitive and emotional self-awareness and exhibiting one's inner life in a relationship with another person.** Intimacy is central to hypnotic influence because hypnotic influence is built on the mechanisms we evolved for face to face communication. Intimacy combines the ability to regulate ourselves and the ability to regulate the way other people feel. For example, profound intimacy requires significant self-regulation abilities, in order to avoid being negatively affected by the other person's anxieties. The openness of a person for emotionally intimate experience is an important part of susceptibility to hypnosis under some conditions. Our willingness to experience our own inner life is central to successful self-hypnosis.
4. *States of Consciousness* -- The concept that we are in different states at different times, resulting in radically different ways of experiencing and behaving. "You will now go into *trance*." States of consciousness imply various things such as different levels of arousal, or especially different ways of paying attention, and particular sets of associated expectations, such as **role expectations**, or taking on a particular internalized role.

It should be immediately obvious that our sense of control over our own voluntary and involuntary functions is a very central theme in hypnosis. What we expect from hypnosis is either to **help someone get control where they had no control before**, or else to **give up their own control to the hypnotist**.

¹⁶ Ibid, p. 443.

Understanding hypnosis means recognizing the sometimes surprisingly small role played by conscious awareness in initiating everyday behavior. It also means understanding the remarkable way in which behavior, including autonomic processes, are organized at a high level in the brain. Our small but incredibly agile conscious awareness can be manipulated to reveal the extraordinary amount of intelligent information processing that goes on outside of our awareness all of the time.

*Hypnosis sessions can be considered as pivotal experiences where we perceive ourselves and our relationship with our environment differently, including **our sense of what we can and cannot control.***

Opinions are divided about whether an “altered state of consciousness” is a meaningful concept or whether it is needed for altering our control. The tendency in research has been to replace the *hypnotic trance* with a diverse collection of more easily studied factors such as **attitudes, expectancies, and motivations.**

Yet in practice many people still find the concept of an *altered state* elegant and useful. To the extent that the hypnosis session will become an important ritual in our life, it may be seen as a radically altered *state* in order to explain our truly altered *experience*.

For one thing, our “state” in *some* sense truly is “altered” during hypnosis, even though it may well be in some manner that happens frequently and is not limited to hypnosis. That is, hypnosis is an “altered state” at least in the sense that **paying attention in a particular way** or feeling a particular way are “altered states.”

Secondly, the situation we call hypnosis clearly is, for whatever reason, a very effective way of producing particular psychological effects that are normally difficult to isolate. Hypnosis procedures are frequently used in neuroscience research to study various kinds of experience that are otherwise difficult to generate *on command*, such as hallucinations or pain control. We are often able to generate these experiences under various other conditions, but hypnosis seems to allow us to control when and how it happens.

Thirdly, focusing on the *mysterious*, attributing special powers to the hypnotic trance, is a way to dramatize miraculous cures and help validate the professional identity of healers whose practice relies on hypnosis.

For these reasons, and because a satisfactory alternate paradigm has yet to be completely elaborated, hypnosis unfortunately remains a

mysterious altered state of consciousness with special powers to many people, and a deceitful sham to others.

A more useful perspective might someday see hypnosis sessions potentially as **profoundly moving personal experiences**, and a **powerful way to bring our inner resources into play** when we need them. From a research perspective, we can also learn a great deal about our experience at other times by understanding how experience is altered during hypnosis.

Actions that happen by themselves

Now we know that we're talking about **altered experience**. Altered in what way? When we talk about hypnosis, we're talking about influencing someone. Not in the sense of forcing them to comply with our wishes, nor even in the sense of persuading them through reason. It's more a matter of *engaging them in a cooperative dialog, inspiring their imagination, and touching their emotions*. In a sense, we are allowing our usual sense of constant conscious control to relax during hypnosis.

The cooperative dialog actually begins before the hypnosis session does, and can extend well past the end of the session. The session itself serves as a marker in the ongoing process of influence, just as individual experiences serve as milestones throughout life.

How does this influence happen? During an actual hypnosis session, our response sometimes seems **compelling** and even **effortless**. The popular view of hypnosis is that we "put people into a trance," or special state, wherein their responses are no longer *voluntary*, but become *automatic* in some sense. This is the essence of the concept of hypnotic influence.

On the other hand, there may be reason to believe that "*automatic*" responding is more fundamental than "*voluntary*" responding, and that **volition** is what requires a "special state," our special state of volitional self-monitoring and control.

Hypnosis may very well involve **stripping away the illusion of direct control**, rather than adding an illusion of lack of control or creating a state of involuntariness.

Our usual sense of control is special, not in the sense that it is unusual, since obviously it is not. Rather, our very ordinary state of volitional

monitoring and control is special because it allows us to override the automatic emotional responses and behaviors with which we would otherwise react to our environment.

Seen in this light, hypnotic experience is partly a shift between our sense of controlling things and **our sense of responding to things in a more mindless way, as when we do things out of habit.**

Through the elaborate processes of conscious self-regulation, we are able to monitor and control much of our own behavior and even much of our own inner experience. At least we perceive that we are monitoring and controlling consciously, even though there is much more processing going on than we could ever be conscious of at once.

We are also sometimes able to give up this perception of conscious monitoring and control, and allow the more automatic processes to dominate. Or perhaps we are stripping away the illusion of control and revealing that automatic (non conscious) processes are often dominating much of our behavior.

When we respond “hypnotically” we are **in some ways simply letting go of our usual need to monitor and control ourselves every moment.**

It is of particular interest to us that **the biological rhythms of human interaction** are a very powerful way of reconnecting with our more automatic responses, or distracting our sense of conscious control. Hypnotic communication is the most elaborate way to make use of this fundamental kind of automatic responsiveness, and to help relax or distract our sense of conscious control.

It is our evolutionary heritage to be able to communicate meaning to each other in these special ways, to plant seeds in each others’ imagination, which then take root in ways that can sometimes have lasting consequences. This is in a sense a “broadband” kind of human communication, less limited by the need for the sender to sculpt elaborate language symbols and the need of the receiver to decode those symbols. Hypnosis seems to rely largely on a pre-literate form of oral communication that connects us by shared meaning rather than trains of logic.

These forms of communication don’t necessarily require literacy, or even direct conscious awareness of the message being communicated. However, the evolution of language in some of its forms has gone hand-

in-hand with our ability to *stir* and *motivate* human beings through oral and even written messages. Human language is not simply a way of transmitting cold, neutral information, it is also a way of expressing and creating common experience.

The result is our capacity for *hypnotic influence*. It isn't necessarily covert influence, though it can be. More like asking for help in a creative and very human way. **Hypnosis is a form of influence that makes particular use of our imagination and feelings rather than our reasoning.**¹⁷

More than that, hypnosis makes use of a ***particular way of paying attention to each other***. This makes effective use of our elaborate skills for sending and receiving meaning and for interpreting a situation through subtle contextual cues.

Not all uses of our imagination are hypnotic. Hypnotic influence in particular has two very interesting characteristics that have fueled popular and scientific interest for two hundred years:

Hypnotized people exhibit a unique kind of cooperation, an implicit contract.

1. People responding *hypnotically* are strikingly cooperative with the hypnotist. They are extraordinarily sensitive to the wishes and expectations of the hypnotist, and are highly motivated to enact the hypnotist's suggestions through their own particular talents and abilities. There is a particular kind of trust in the hypnotist, an implicit contract that is remarkable though not without limits.

Hypnotic responses often feel effortless and even *involuntary*.

2. When someone is responding *hypnotically*, that person often has a distinct sense of not using any effort, or of not being in direct control of their own response.

These interesting characteristics have traditionally been associated in both the public and scientific minds with the unique effects of *inducing a trance state*. However, careful research has gradually revealed that these characteristics are not limited to hypnosis. Rather, they are particularly emphasized in hypnosis, and are part of our daily lives as well. Incredibly, they may reveal as much about the nature of human consciousness as about hypnosis in particular.

¹⁷ For a broad review of the empirical evidence linking hypnosis and processes of imagination, see Sheehan, P.W., (1979). Hypnosis and the processes of imagination. In E. Fromm and R.E. Shor (Eds.) *Hypnosis: Developments in research and new perspectives*. Hawthorne, N.Y.: Aldine.

Explaining Hypnotic Involuntariness

The peculiar sense of **involuntariness** is what makes responses in hypnosis unique and different from other similar kinds of influence, such as guided imagery or storytelling, although they may tap similar processes of human imagination.

How do we know that hypnotic responses are really involuntary and not just people pretending along? We could trust their verbal reports, and the people who experience involuntariness in hypnosis include researchers. But this is hardly convincing to those who don't experience involuntariness in hypnosis. Moreover, introspection is a notoriously deceptive way of gathering information.

For one thing, there are some subtle differences between people simulating hypnosis and hypnotized people. In particular, simulators consistently tend to overplay their role, exaggerating the responses that they think hypnotized people should produce.

A more convincing and important difference is that people who are hypnotized are more likely to continue responding to hypnotic suggestion when there is no observer present. Simulators generally stop pretending when the observer leaves the room. Hypnotized people continue with their response. They seem to be **responding to an internal experience they are generating**, not putting on a show for the hypnotist or researcher.¹⁸

There is actually a great deal of involuntariness in daily life for many people¹⁹, but it is emphasized to a unique degree in hypnosis, because we seem to *control* it, albeit indirectly.

Historically, there were four main types of theories describing why hypnotic responses seem effortless: compliance theory, sociocognitive theory, dissociated experience theory, and dissociated control theory. Recently, we have seen the emergence of an additional class of scientific theory, theories that stress that our normal sense of constant conscious control is largely an illusion, which becomes stripped away during hypnosis.

¹⁸ Kirsch, I., Silva, C.E., Carone, J.E., Johnston, J.D., & Simon, B. (1989). "The surreptitious observation design: An experimental paradigm for distinguishing artifact from essence in hypnosis." *Journal of Abnormal Psychology*, 98, 132-136.

¹⁹ Kirsch, Irving, & Lynn, Steven Jay, (1999). "Hypnotic Involuntaries and the Automaticity of Everyday Life." In *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*, edited by Irving Kirsch, Antonio Capafons, Etzel Cardena-Buelna, and Salvador Amigo, American Psychological Association.

The theories differ in two important ways. First, they differ in whether they consider hypnotic experience **real**, or whether hypnotized people are pretending to experience things. Compliance theory considers the experience to be pretended, the others consider it real and attempt to explain why.

Second, the theories that consider the experience real differ in *how* they explain the experience of involuntariness. Sociocognitive and dissociation theories propose specific kinds of cognitive processes that help us divide our experience into parts, but the division is different in each case. Sociocognitive theory emphasizes how we can deceive ourselves into experiencing something as involuntary. Dissociation theories emphasize how our experience or behavioral control might be separated into different streams under some conditions.

Finally, some of the most recent theories have taken in a wider range of scientific findings and proposed a rather novel perspective. They find evidence that everyday life is already much less consciously controlled than we perceive, and that we normally construct a compelling illusion of conscious control. Hypnosis then becomes special not because of any unique mechanisms but because it provides conditions for revealing the normally non-conscious origins of our behaviors.²⁰

The idea is that all behavior is triggered from outside of awareness (often planned, but not necessarily consciously), and that the role of conscious attention is actually to monitor outcomes and bias the selection of plans. This is very different from our intuitive view that our conscious attention is a gateway through which all experience and control must pass. Remarkably, there is a great deal of hard experimental evidence behind this counter-intuitive view of conscious control.

It's instructive to compare these different ways of explaining involuntariness.

The **Compliance** theory says that people respond to the demands of the situation by deliberately acting out the suggestions, and then *reporting* that it was effortless even though it was not. Compliance theory denies that there is anything different about hypnotic response. Compliance theory has been discovered to apply to some people under some conditions, especially some of the people who are not high in talent for hypnotic responding. It appears to be an inadequate explanation for the majority of people, especially those who are talented at responding to hypnotic suggestions. In other words, people sometimes do play along

²⁰ Kirsch, Irving, and Steven Jay Lynn, (1999). "Hypnotic Involuntariness and the Automaticity of Everyday Life," in Irving Kirsch, Antonio Capafons, Etzel Cardena-Buelna, Salvador Amigo, (eds.) *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*, APA Press, pp. 49-72.

with hypnosis and pretend to be experiencing what is suggested, however they are exceptions.

The **Sociocognitive** theory (which includes **social learning theory**) is more widely accepted as an explanation for a greater percentage of people responding to hypnotic suggestions. Sociocognitive theory says that people actively use cognitive strategies to carry out suggestions, rather than simply complying deliberately, and that this may result in the suggestion *seeming* effortless. Sociocognitive theory appears to be an accurate way of describing at least a subset of people responding to hypnosis, including even many of the more talented responders.

Dissociated experience theory is represented by some interpretations of Ernest Hilgard's Neodissociation Theory. This theory proposes that suggestions are actually carried out with intention and effort but that *the intention and effort are hidden from self-perception* by a dissociative barrier, preventing them from being perceived. This is an intuitively attractive idea, but has turned out to be problematic to test experimentally.

Dissociated control theory is a different interpretation of dissociation in hypnosis. Instead of carrying out suggestions with hidden effort and intention, this theory says that *suggestions are carried out by **directly activating lower level responses***. This means that there is no effort and no higher level intention needed to initiate and maintain these responses, the responses themselves (and not just our perception of them) are separated from our conscious awareness.

Since it implies a specific relationship between observable responses and verbal reports, dissociated control theory makes specific testable predictions about the effort involved in hypnotic responses. These predictions allow us to determine whether dissociated control theory applies better than the other theories in particular cases. This is done by testing to see whether different tasks interfere with each other, a common technique in psychological research.

So far, the research seems to indicate that **dissociated control theory** is consistent with observations of at least a large subset of talented hypnotic subjects.²¹ That is, many talented people respond to suggestions in a legitimately *involuntary* way, based on tests of cognitive interference, rather than experiencing only a convincing *illusion* of involuntariness.

²¹ King, Brenda J. & Council, James R., (1998). "Intentionality During Hypnosis: An Ironic Process Analysis," *International Journal of Clinical and Experimental Hypnosis*, 46:3, July, 1998, pp. 295-313.

The **compliance theory** is therefore inconsistent with the observations of most highly hypnotizable people. However, the observations are consistent not only with **dissociated control theory**, but also with some versions of **sociocognitive theory**, and with the more radical theory of “everyday automaticity.”

Perhaps some talented people respond in the way described by sociocognitive theory, and others respond in a way better described by dissociated control theory? Or perhaps the same people respond differently under different conditions. Or maybe the same people even respond differently to different kinds of suggestions? These are important questions for both theory and practice, and have not yet been answered satisfactorily.

The interference data are inconsistent with early versions of sociocognitive theory. The early social theories held that subjects respond voluntarily but then actively deceive themselves about their own responsibility for their response.

Later social theories are more similar to dissociated control theory, since they postulate a true involuntariness. The later social theories still attribute hypnotic responses to our own actions, while using various cognitive strategies to avoid feeling responsible for them. However, they emphasize the **true sense of involuntariness** often experienced, rather than considering it an illusion. Recent social theories relate hypnotic responses to other kinds of behavior that we do not feel responsible for, such as habits, rather than making them a special category.

This seems to be gradually moving the theories into a loose convergence, that hypnotic involuntariness is real and that there is more non-conscious planning and less conscious planning in all of our behavior than we usually assume.

The big difference between social theories and dissociation theories is that social theories reject any reliance on an altered or *dissociated* state of consciousness. They consider hypnotic responding to be an extension of the social and cognitive processes that guide our responses at other times rather than a special case.

There is still a theoretical question of whether the same theory explains both the *initiation* and *maintenance* of hypnotic responses, even in the subset of very talented people.

It is possible that in some cases initiating a response requires effort, but that once initiated, the response becomes effortless and involuntary. This is consistent with the idea that some talented hypnotic responders can

create “dissociated control systems” in some sense in their mind that can then operate independently without their attention or effort.

This is also consistent with social theories, although they claim that there is no special dissociative state required. In both social theory and dissociative control theory, some higher level guidance is still acknowledged. This is because hypnotized people generally remain aware of the reality of their situation, no matter how absorbed they become in a suggested fantasy.

This has important implications for legal and moral issues such as whether someone can be tricked into doing something dangerous, criminal, or otherwise repugnant, through hypnotic influence.

Researchers generally agree that **people can indeed be influenced to an extreme degree by social pressures**. They also generally agree that the use of hypnosis itself is not needed, nor necessarily even a crucial factor, in this kind of extreme influence, though it may sometimes play a role. This is consistent with social psychological theory in other situations.

Review of Chapter 1

- Hypnosis is a domain of phenomena that are much more remarkable from the perspective of the hypnotized person than that of the outside observer. A useful comparison can be made to entranced lovers.
- The way we perceive hypnosis changes depending on which framework we use, such as the various perspectives of psychology, or the perspective of biology.
- **Biology** holds the most potentially useful view of hypnosis as a healing art, through the principles of self-regulation as a way of adapting to our environment.
- The central principles of biology are **adaptation** and **diversity**. Life goes on because it finds diverse ways to adapt to its environment.
- Larger animals, such as humans, specialize in adaptations that maintain a constant internal environment in spite of changes in the environment and vastly different kinds of challenges.
- As animals that have evolved a **unique ability to anticipate or imagine things that have not yet occurred**, we are able to use our

imagination to regulate ourselves both into and out of internal balance. This is an important aspect of health and quality of life.

- **We have the capacity to regulate ourselves by altering the way we experience our situation, and therefore alter our own response to it.**
- Our awareness of ourselves and our environment can sometimes be radically altered. Hypnosis is one of the best known and best studied situations where this occurs. This is what allows us to use hypnosis to isolate our capacity to self-regulate.
- Hypnosis is commonly described as an altered state of consciousness where we are more suggestible or less critical.
- Whenever we respond to a goal or expectation with an altered sense of self-control, it is known as **suggestion**.
- Hypnotic influence is often said to be all about **suggestion**, but we don't really have a satisfactory model of suggestion in psychological science.
- Emotional states are an example of altered states of awareness. Hypnosis is not a particular emotional state, but more closely a way of changing the way we perceive ourselves to be regulating emotional states.
- Activation states, such as the stages of sleep, are another example of altered states of awareness. Yet hypnosis is not simply an altered activation state. Reduced activation is one common way of facilitating hypnosis, but it is not the endpoint.
- We are alert during hypnosis, yet *our alertness is qualitatively different from other times*. We are not in a particular emotional state, yet we have **easy access to our own emotions**.
- Our difficulty describing states of consciousness can be credited to the primitive tools we have relied upon and to the intellectual isolation of the various sciences from each other, as well as their rivalry.
- It is reasonable to expect human subjective experience to have a structure that can be studied, once we overcome the challenges of primitive tools and isolated sciences.
- We expect that some of the mysteries of hypnosis should become better understood once we have a better understanding of how the human mind and brain create our subjective experience in general.

- Hypnosis is a legitimately powerful way to alter our experience, and sometimes can enhance the effects of psychotherapy, and reduce the risk of relapse.
- The concept of a **hypnotic trance** leads to serious problems for psychologists because it is often associated with influences outside the realm of psychology, and even outside the realm of science. This makes hypnosis a source of fear and suspicion rather than being valued as a powerful healing tool.
- On the contrary, hypnosis involves the same principles of psychology seen in other situations. But we have to understand **how human perception is influenced by imagination**, and **how imagination is influenced by social interaction**.
- Hypnosis is an effective influence situation because it **allows social interaction to influence imagination**, **allows imagination to influence perception**, and **allows altered perception to mobilize our own mental and emotional resources**.
- We can think of human beings as relying on each other to help find meaning in situations. **Social learning theory** begins to make hypnosis understandable in terms of the same principles that apply to the rest of our lives.
- The common factor in hypnosis situations is our **motivation to experience our own responses as involuntary**.
- Involuntary responding in hypnosis is not a form of mind control. It is **an active desire on the part of the hypnotized person to have the experience of involuntariness**, a **motivated commitment to cooperate**, using whatever talents they may have.
- To create involuntary experience, **different people use different strategies and talents**.
- We have a **capacity to experience our own behavior either as voluntary actions or as an outcome of involuntary processes**, depending on a number of psychological factors.
- One of the most important psychological factors in how we attribute our control of our own behavior is our social interaction with another person, our **rapport**.
- **Rapport** is a particular way of paying attention to each other, making effective use of our evolved capacity to **create a shared sense of**

meaning and interpret a situation through subtle contextual cues.

- There are several theories that attempt to explain our sense of involuntariness in hypnotic suggestion. **Different theories seem to apply best to different people**, there is no one theory that seems to cover all of them adequately, although they seem to be moving toward a rough convergence in some ways.
- **Compliance theory** says that people play along with hypnosis and pretend that their responses feel involuntary. This theory is useful for explaining the behavior of many people who do not have the talents, motivations, and mindset considered conducive to the experience of involuntariness.
- **Sociocognitive theory** says that the sense of involuntariness in hypnosis is a result of our motivation to experience hypnosis. This motivation causes us to fool ourselves in various ways (outside of awareness) into thinking that we are not responsible for our own actions. Sociocognitive theory is useful for explaining the behavior and experience of a majority of people who are highly responsive to hypnotic suggestion.
- **Dissociated control theory** says that the sense of involuntariness in hypnosis is due to some people being able to create separate low-level control systems in their mind to perform actions outside of awareness. This theory, like sociocognitive theory, is useful for explaining the behavior and experience of many people who are highly responsive to hypnotic suggestion.
- **Dissociated control theory** and **sociocognitive theory** are often difficult to distinguish experimentally. The most important conceptual difference is that sociocognitive theory does not rely upon the idea of an altered state of consciousness. The resolution seems to depend upon how state of consciousness is ultimately defined.
- **Dissociated control theory** postulates that such an altered control state is important for explaining the sense of involuntariness in responding to suggestion. Otherwise, it is difficult to explain why behavior should dissociate from executive control during hypnosis more than at other times.
- The “everyday automaticity” theory is a radical kind of sociocognitive theory proposing that our everyday behavior is planned largely non-consciously and that our sense of constant control is an illusion. Hypnosis then involves a motivated use of individual talents to relax or

distract us from our illusory sense of constant control, and make our normal involuntariness more apparent.

- Like actors deeply involved in their roles, hypnotized people are always at least partly aware of their real environment, even when they are deeply absorbed in a suggested fantasy.
- Also like actors deeply involved in their roles, hypnotized people tend to continue acting out their roles so long as they remain absorbed in that fantasy. They are by no means prevented from stopping the fantasy at any point, or modifying it for their own purposes, but they are usually motivated to continue playing the role.
- People can be influenced heavily by various kinds of social pressures, but this is not unique to hypnosis by any means.

Summary of Chapter 1

We are not just passive recipients of simple sensory experience. **We actively create our own experience** in many ways, through the use of our evolved capacity for **imagination**. The same situation can be interpreted in very different ways, depending on what we **expect**.

One of the strongest influences on what we **expect** is **how other people seem to be interpreting the situation**. There are a number of ways, verbal and nonverbal, in which we communicate a sense of shared meaning to each other to help each other interpret a situation.

There is a remarkable contagion that results from us taking our cues from each other, especially when a situation appears ambiguous or difficult to interpret. This contagion, this evolved capacity for us to use each other to help interpret our situation, is the biological root for **suggestion**.

Hypnosis is actually a cultural convention, a situation where **we make particularly effective use of imagination by manipulating expectations**. This is true in both self-hypnosis and hypnosis with each other. Hypnosis with other people also involves the **particularly effective use of social cues to manipulate expectations**.

Hypnotic influence means altering what we expect to perceive and what we expect to happen. Altering what we expect in turn alters how we interpret the situation. How we interpret the situation determines how we think, feel, and act in that situation. So, altering what we **expect** has the power to alter how we think, feel, and act.

We sometimes **expect** things to be caused by our own efforts, and sometimes expect them to happen without our conscious effort. **Hypnotic suggestion** and **placebo responses** are well known examples of our own behaviors or responses that we expect to happen without conscious effort.

When our actions result from what we expect rather than from our conscious intentions, we experience them and think of them as “automatic” or “involuntary” rather than voluntary.

Hypnotic influence is thus about altering our sense of self-control.

Under certain kinds of conditions, we are able to relinquish our sense of constantly monitoring and controlling our own behavior.

When we relinquish our sense of self-control while also establishing a close **rapport** with another person, we create the conditions for *hypnotic influence*. Under these conditions, we respond to expectancy in a way that feels involuntary. **Response to expectancy**, (as opposed to acting from a conscious intention), is known as **suggestion**.

Responding to expectancy is explainable in terms of **social learning theory**. Social learning theory thus helps connect our response to suggestion with our behavior at other times, without requiring a separate theory of human behavior solely for hypnosis.

We use **social contextual cues** to help interpret our situation. The hypnotist can become an intensely meaningful and motivating source of cues in this sense. We take an active role in creating our own experiences, based on whatever talents we may happen to have and a variety of strategies.

Our motivation to experience hypnosis plus our connection with the hypnotist allow us to use our existing strategies and talents to create the experiences associated with hypnosis.

These include such things as the experience that we are not controlling our own movements, the experience of vivid fantasy or hallucinations, the experience of temporary amnesia, and the experience of absent of sensation in some part of our body.

These phenomena are interesting, but they are secondary to the essence of hypnotic influence. That essence is our ability to alter our own awareness and our own sense of self-control, and to use this change to mobilize our own mental and emotional resources for change and for healing.

The Story So Far ...

*Hypnosis is two things at once. It is a situation where we use our imagination to alter our own experience. And it is a situation where our understanding of what is going on is strongly influenced by the verbal and nonverbal cues provided by another person. This involves processes that occur at all times, but we make deliberate effective use of them with hypnotic procedures and principles. **By altering our own interpretation of a situation, we are able to isolate our capacity for adaptive self-regulation.***

Chapter 2

Talents Used In Hypnosis

Fantasy, Dissociation, and Cooperative Mindset

In Chapter One, we introduced the perspective of **suggestion** as *response to expectancy*. This means perceiving our own behavior and body processes as **expected outcomes** rather than conscious actions or unlikely events.

By manipulating expectancy, we create the conditions for our mind and body to bring about the desired responses, even though we don't feel as if we are controlling them directly.

People create these responses and make this kind of experience happen using different talents and different strategies. What are they exactly? How do people actually make these changes happen? Why do some people have such a dramatically different *sense of control* under some conditions?

There are several kinds of talent that are most closely associated with hypnotic experience and suggestion. These include **hypnotizability**, **fantasy proneness**, **dissociation**, and **imaginative absorption**. These are all called by various names.

Hypnotizability

In particular, we are interested in the talent (actually talents) previously known as **primary suggestibility**. These have often been called **hypnotizability**, and are sometimes also known today as **imaginative**

suggestibility. By whatever name, these talents allow us to experience responses to suggestion as involuntary and effortless. Different people have different imaginative talents, but there are also talents in common to many people.

There are a subset of people who report involuntary dramatic responses to hypnotic suggestions, the *highly hypnotizable* people.

These people all have in common their responsiveness to hypnosis and other situations where they either **respond to imagined situations as if they were real**, or **experience dramatic changes in perception, memory, motivation, or behavior in response to suggestions.**

Highly hypnotizable people all share certain tendencies, aside from the ability to experience the classic depth scale phenomena from a hypnotic induction procedure.

Most of these tendencies have something to do with **attention** and **cognitive flexibility.** They can even be identified with certain sensitive imaging tools²² or sophisticated use of the EEG²³ as different ways of using their brain. When we control for the kind of suggestion being used, the most highly hypnotizable people show a very robust difference in **event-related potentials** in response to suggestions for hallucination.²⁴

For these talented individuals, there is something measurably different about the way they use attention, especially during hypnosis.

Highly hypnotizable people share a willingness to experience new things, an ability to respond sensitively to situational demand characteristics, and an ability to enter into some form of rapport with another person. They also share a particular talent for selective focused attention of a particular kind.

Highly hypnotizable people do vary from each other in the range of different kinds of experiences they have under hypnosis, according to their individual talents, but they also share a capacity for similar kinds of experience.

Highly hypnotizable and moderately hypnotizable people differ more in terms of their outward behavior than their experience. Moderately

²² Crawford, H.J., (1994). "Brain Dynamics and Hypnosis." *International Journal of Clinical and Experimental Hypnosis*, Vol. 42, pp. 204-232.

²³ Ray, W.J. (1997). "EEG concomitants of hypnotic susceptibility." *International Journal of Clinical and Experimental Hypnosis*, 45, 301-313.

²⁴ Barabasz, Arreed, Barabasz, Marianne, Jensen, Stacia, Calvin, Steven, Trevisan, Michael, and Warner, Dennis, (1999). "Cortical Event-Related Potentials Show the Structure of Hypnotic Suggestions is Crucial." *International Journal of Clinical and Experimental Hypnosis*, Vol. 47, 1, pp. 5-22.

hypnotizable people are less likely to respond to some of the more difficult suggestions (such as sensory hallucinations), but when they do respond, the response is just as dramatic as for highly hypnotizable people. The difference between highly and moderately hypnotizable people is mostly in **the range of different kinds of suggestions** they can respond to effectively.

The upper portion of hypnotizable people therefore differ in the amount of talent they have for responding to the more difficult suggestions.

People who are “lows” or “less hypnotizable” are different in the way their brain uses attention. They are not simply lacking the talent for dramatic hypnotic experience. They are also less willing to experience hypnosis (and similar alterations of consciousness) for some reason, or less willing to make those experiences happen for themselves. In other words, they will often wait passively for something extraordinary to happen, rather than actively using cognitive strategies to create a new experience.

There is an entire cluster of attributes that distinguishes “highs” from “lows,” it is not simply a continuum reflecting differences in a single ability.

A few “highly hypnotizable” people have extraordinary talent for altered experience. Most “good subjects” however are not virtuosos but are **very willing to have new experiences, and motivated to create them**. This depends upon our attitudes, motivations, and expectancies about having new experiences, as well as our relationship with the other people around us, and the situation we are in.

Responsiveness for most people comes down to their **willingness to cooperate with suggestions and think along with them rather than contradict them**. In so doing, most people are able to create hypnotic experience to a large degree, even if they do not have exceptional imaginative talents.

With these things in common, researchers have historically lumped various kinds of people together as *highly hypnotizable* for convenience. However, it appears that this group is actually composed of **people with different talents**.

Highs and Lows

The ease with which people could be hypnotized, and the “depth” they were able to reach was dubbed their **hypnotic susceptibility**. The

scales which emphasize the experience of the hypnotized person, especially dramatic changes in their experience from the ordinary, are considered measures of hypnotic susceptibility. A scale called the **SPS:I**, or **Stanford Profile Scale** is particularly demanding and difficult and is considered to tap the experiential dimension of hypnosis to a great degree. It is sometimes referred to as a **criteria measure of hypnotic susceptibility**.²⁵

The scales which were standardized to show behavioral responses to suggestion were dubbed **suggestibility scales**. The most commonly used research instruments for studying hypnosis are the **SHSS** (A, B, and C) and the **BSS** scale, which all measure outward behavioral response to imaginative suggestions.

These scales correlated with each other much better than either correlates with the **SPS:I** scale, a hint that **suggestibility** and **susceptibility** can be measured independently with a sufficiently sensitive instrument. Also, the fact that the **SHSS** correlates better with the **SPS:I** than does the **BSS** is interesting because the **BSS** seems to invite a greater degree of social compliance.

The correlations imply that our measures of **suggestibility** reflect some varying degree of compliance, and some degree of **hypnotic susceptibility**.

Hypnotic susceptibility reflects genuine changes in experience due to suggestion, rather than behavioral compliance with suggestion, where we can make a distinction between the two.

Whether measuring susceptibility by subjective tests, or suggestibility by behavioral tests, the scales are all graded from easy items to more difficult items. Some of the tests give the items in strict order of difficulty, while others attempt to avoid any possible order-dependent effects by testing the items in a more random sequence.

Most people will pass most of the easier items, and few of the difficult ones. When an experimenter suggests that their arm is getting heavier, about 90% of people will respond by dropping their arm at least a little bit. This is true either with or without a **hypnotic induction**, in fact, although that requires a specially designed test to determine.

The remaining 10% of the population, who don't respond even a little bit to most the easiest suggestions, are considered "lows," or low in suggestibility. Lows were long considered by researchers to also be

²⁵ Bowers, Kenneth S. (1976). *Hypnosis for the Seriously Curious*. W. W. Norton & Co. P. 108.

“insusceptible to hypnosis,” but this is not quite the case. They do not exhibit many of the dramatic changes in experience that some other people do, but they do respond to suggestions in their own way. “Lows” are often used to comprise control groups in suggestibility research.

“Highs” experience much more dramatic changes in cognition and perception than “lows.”

The difference that makes a difference is our response to the most difficult items. About 20% of the population will respond to the most difficult items on the scales, making them “highs,” or “high in suggestibility.” Highs are capable of experiencing suggestion effects more dramatically than other people. They are the “talented subjects” whose responses in stage hypnosis shows and laboratory experiments makes us wonder what strange power the hypnotist wields.

Much of the scientific research into hypnosis has thus emphasized the differences between highs and lows, since this would theoretically tell us a great deal about why the “highs” have such dramatically different experience.

Importantly, being a “high” alone does not guarantee that someone will respond to a hypnotic induction with a particular person. It does guarantee that if they are “hypnotized” successfully, which is very likely if they cooperate, that they will experience an increase in suggestibility over their waking baseline. This applies to most “moderates,” as well, who are different mainly in that they respond to a smaller range of suggestions. They have similarly dramatic experience when they do respond, however.

This guarantee does not apply to all “lows,” who sometimes don’t experience any suggestibility change after a hypnotic induction. Being a “low” means starting at a lower level of suggestibility, and *sometimes* also means not responding to hypnotic inductions in any dramatic way. However, **most** people, including most lows, respond to *some* degree to hypnotic induction with an increase in suggestibility.

Being a “low” does not necessarily mean that someone is “insusceptible to hypnosis,” nor does it mean that they cannot make use of therapeutic suggestion just because they don’t experience some of the more dramatic suggestibility scale phenomena.

Susceptibility to hypnosis sometimes varies with other factors that do not correlate directly with suggestibility scores. Successive hypnosis sessions sometimes lead to more rapid hypnosis, though not necessarily more profound hypnosis.

Highs experience more dramatic responses to suggestion whether a hypnotic induction is used or not.

Highs also are different from lows statistically in a number of ways that have little or nothing to do in any obvious way with hypnosis. Some differences between “highs” and “lows” are summarized in the table below:

“Low Hypnotizables”	“High Hypnotizables”
Difficulty experiencing predicted changes in consciousness when tested using imagination scales.	Easily experience changes in awareness predicted by imaginative suggestibility scales, and situational expectations.
Exhibit brain patterns more consistent with cognition than imagery under most conditions.	Exhibit brain patterns more consistent with imagery than cognition under most conditions.
Requires conscious attention in order to respond to suggestions.	Can often respond to suggestions without paying conscious attention.
More distractible.	Less distractible. Difference in far fronto-limbic attentional system.
Often expect dramatic changes of consciousness in hypnosis. And are disappointed.	Expect mundane process such as relaxation and concentration, and are sometimes surprised.
Experience responses as willful.	Experience responses as involuntary, even if engaged in conflicting imagery.
Less ability to selectively attend.	Greater ability to selectively attend, as measured by visual

	ERPs
Can reduce affective pain with hypnosis, but less effective at reducing sensory pain.	Can reduce not only affective pain but also sensory pain with hypnosis.
Can use self-hypnosis, guided imagery, biofeedback, etc., only for relatively uninvasive procedures for pain control.	Can use self-hypnosis, guided imagery, and hypnotherapy more effectively, but are less effective at using biofeedback for similar purposes.
Rarely responds to suggestions for posthypnotic amnesia	Some show profound memory loss in response to amnesia suggestions, canceled by use of a cue. Retrieval-time inhibition.
Poorer performance on visual search tasks.	Superior performance on visual search tasks.
Tend to use detail search strategies.	Tend to use holistic search strategies.
Tend to adopt an instrumental set : to engage in cognitive activities involving discriminations for guiding instrumental acts and evaluating achievements against standards.	Tend to adopt an experiential set : open to current sensory events or Imaginal events without needing to go beyond the experience at hand.
Less responsive to reversible figures and visual illusions.	More responsive to reversible figures and visual illusions.
Show greater baseline gamma band EEG power (35-45 Hz) in the frontal and temporal areas than the	Show greater baseline theta band EEG power, especially in the frontal lobes, probably

posterior areas, probably reflecting external sensory processing.	reflecting inhibitory processes.
	Sometimes reported to favor right hemisphere, or to show greater right hemisphere alpha, but this result is not consistent and may be task-specific or mediated by expectancy.

The general view in research has people being divided into “highs” and “lows” (and “moderates” depending on how the ranges are defined). This view is largely accurate, although it conceals the fact that *among “highs,” the distribution of particular abilities is unexpected.*

We would expect to find that more people pass the less difficult items, and that fewer people pass the more difficult items, even among the most difficult. However, what we find instead is that people have specific talents for responding to particular items on the scale, regardless of whether the item is considered more or less difficult.

If we were intending to measure susceptibility to suggestions for cognitive and perceptual distortions, suggestibility would be better characterized by a profile of scores for different abilities than by a single numerical score. The single score has become a mainstay of research because it permits a wider range of experiments to be more conveniently analyzed, and more sweeping generalizations to be made about the nature of hypnotizability.

Fantasy Proneness and Absorption

There are people sometimes known as *fantasy prone* who share a deep, profound, and long-standing involvement in fantasy and imagination. About 4% of the population has been estimated to be *fantasy prone*. This is the first of the imaginative talents that relate directly to responsiveness to hypnosis and suggestion. Of 1000 people, maybe 40 are *fantasy prone*.

The talent of
fantasy
proneness.

Fantasy prone individuals have the ability to have particularly **vivid hallucinations**, which they experience as if they were real (though they do not necessarily *believe* they are real).

They also have **vivid recall** of personal experiences, particularly **rich imagery** prior to sleep, and a variety of **intense physical reactions** to things they observe. About 60% of fantasy prone women have experienced the phenomenon of false pregnancy.

Fantasy prone people often experience intense emotional reactions to violence on television or in the movies. They also report psychic and out-of-body experiences with an unusual frequency. Fantasy prone people frequently report vivid and varied sexual fantasies. About 75% of them report the ability to experience orgasm in the absence of any physical stimulation.

Although it is likely that many of us are capable of many of these kinds of “hysterical” *responses to imagination*, the fantasy prone among us have the greatest general vulnerability to it (or talent for it, depending on your perspective).

This seems to arise from any of **several different developmental paths** in early life, involving the encouragement of fantasy, and the use of fantasy for sexual pleasure or to escape from a negative environment or compensate for loneliness or isolation.

It is also very important to realize that hysterical symptoms do not require fantasy proneness. It would be tempting to conclude from the above description that the fantasy prone and clinical hysterics or neurotics are the same group, but this is not at all the case. In fact, most of the psychiatric patients seen with hysterical symptoms are very different from the fantasy prone.

Hysterical symptoms arise in a wide variety of people, possibly everyone to some degree. But they arise under different kinds of conditions and with different degrees of control in different people.

The thing that is special about the fantasy prone is the involvement of their active imagination in producing the physical responses, not the existence of hysterical responses in general.

In animals, where the imagination and fantasy are more limited, perception leads to action. In humans, where we have evolved a more elaborate capacity for imagining scenes, we have also had to evolve the ability to suppress our natural response to imagination as if it were sensory perception. Those people who can and often do turn *off* that

suppression appear to be the “fantasy prone.” They have a more direct connection between imagining something and responding to it.

Fantasy prone people exhibit a particular sensitivity to social norms that often leads them to construct an elaborate secret fantasy life hidden from other people. Although they can usually distinguish fantasy from reality in general (they are not by any means *delusional*), fantasy prone people sometimes have difficulty distinguishing specific fantasized people or events from real ones because their fantasies are so vivid and realistic.

Fantasy proneness is currently believed to be one of several types of talent associated with dramatic responses to suggestions under hypnosis.

Fantasy prone people seem to constitute many (perhaps half) of the *very most talented* hypnotic virtuosos. That is, if we screen people so that we are left with only those with the very most dramatic responses to hypnotic suggestion in standardized tests, we come up with about 2 or 3 % of the general population. About half of those hypnotic virtuosos are fantasy prone. These **fantasy prone** hypnotic virtuosos also score extremely high in tests of **imaginative absorption**.

There are many people with enough hypnotic talent to be called “highly hypnotizable” who are not fantasy prone. These people are usually distinguished by passing about 85% of test suggestions in a standardized test. This is about 20-25% of the general population, those that show a significant change in suggestibility tests following a standardized induction procedure.

If we take 1000 people and test them for hypnotic talent, about 200 to 250 will test as “highly hypnotizable,” and about 30 of those highly hypnotizable people will have exceptional and dramatic talent. Perhaps 15 or 20 of those virtuosos will be **fantasy prone**. There will also be a few fantasy prone people who are not in the “highly hypnotizable” group, maybe 3 or 4 of them.

What does it mean that there are some people who are fantasy prone but do not exhibit a high degree of hypnotic talent ? It probably means that responding to suggestion requires more than just being able to respond to vivid imagination. We also need to be able to connect with another person and follow their lead.

One study found that about 20% of the fantasy prone population tested was not also highly hypnotizable. That is, they can use their active imagination to produce dramatic physiological responses, but *not necessarily in cooperation with a hypnotist or following an induction*

procedure. They may have negative attitudes, motivations, or expectancies about hypnosis, or they may find the particular hypnotist or situation inhibits them.

Amnesia Proneness and Dissociation

A few percent of the population consists of hypnotic virtuosos. About half of these are fantasy prone. Those are the people who often respond instantly to hypnotic induction. What about the other half?

The talent of
dissociation.

A similar talent to fantasy proneness is the ability to access and control different states of consciousness, awareness, or cognitive function. This is often called *dissociative* ability, or *dissociation*, so people high in this quality are often called **dissociators**. This can be a confusing term, however, because different people use the term in very different ways. For this reason, dissociators have also been called **amnesia prone**, to distinguish their unique talents.

Dissociation is considered by many researchers to represent an adaptive defense against overwhelming fear or pain. It is a talent for pushing painful or disabling feelings out of awareness. But there are actually different ways that our mind can use to escape from pain. We can use *fantasy* to remove ourselves from pain, as the fantasy prone have learned to do, or sometimes we can simply *block it out*. Some people have learned to specialize in blocking out. Those are the **amnesia prone**, or **dissociators**.

Dissociators show a greater ability to control sleeping and waking transitions, the ability to process cognitive information usefully while asleep, and **greater control over the process of becoming absorbed in something**.

Paradoxically, then, the **amnesia prone** are not the same people as those who score highly on tests of **imaginative absorption**. There seems to be a crucial difference between the way fantasy prone people become absorbed in something and the way amnesia prone people become absorbed. This may reflect some true capacity for **dissociated cognitive processing** in amnesia prone people, but not other highly hypnotizable people.

The ability of amnesia prone people to control their absorption in something leads interestingly to better punctuality in some dissociators.

Some of these qualities are common to fantasy prone people, and indeed some of these “dissociators” may also be fantasy prone. This is

an important issue for future research. Much of the existing research on dissociation has not distinguished between **amnesia prone** and **fantasy prone** people.

In hypnosis, **dissociators** show a particular talent for *posthypnotic suggestion* and *age regression*, as well as *hypnotic amnesia* and *posthypnotic amnesia*. This has led to the theoretical distinction of **amnesia prone** people from **fantasy prone** people and the many others who appear highly hypnotizable.

Amnesia prone people can usually be easily distinguished from fantasy prone people in hypnosis because it takes a much longer induction process for them to achieve “deep hypnosis.”

They also experience a greater *loss of muscle tone* and greater *difficulty speaking* than fantasy prone people, and are much more likely to experience *spontaneous amnesia* for the session (roughly 60% of them).

Amnesia prone people in hypnosis experience not only profound loss of muscle tone but also a subdued voice and lethargic movements. Amnesia prone people tend to attribute their responses to the power or skill of the hypnotist, whereas fantasy prone people tend to attribute it more to their own talents. The **amnesia prone** appear to most closely resemble those rare talented people known as **somnambulists** in some of the older hypnosis literature.

When they hallucinate during hypnosis, **amnesia prone** people tend to remember less of the suggestions, so they are more likely to misattribute a hypnotic hallucination to a real event than are fantasy prone people. They frequently experience hypnotic experiences as **surprising** and **extraordinary**, though they typically require a long induction process to do hypnosis.

The experience of hypnotic suggestion as surprising and extraordinary is probably a big part of the difference seen between various studies of hypnosis and brain function.

Surprise causes brain event known as the **P300** to become enhanced in response to a stimulus. This is the same electrical event used to show that highly hypnotizable people are processing stimuli differently during hypnotic hallucinations.

When someone is absorbed in the experience of a hypnotic hallucination, they show a diminished P300 response to stimulus, indicating that they are no longer processing it the same way. However, if they are *surprised* by their own response, they will still generate the P300 event. People

therefore show different P300 responses to hypnotic suggestion, because of different degrees of *surprise*, even though their experience of the suggestion may be equally convincing.

Different degrees of surprise to hypnotic suggestion may be caused by amnesia proneness in some cases. More of the difference can probably be attributed to the structure of suggestions than to amnesia proneness. Different kinds of suggestions lead to different expectations, and different degrees of surprise at the ensuing experience.²⁶

The specific **expectancy** established by the person's talents, the situation, and the specific kinds of suggestions used are all important in determining whether we are surprised by our own response to suggestion. This in turn helps determine the brain events that can be measured.

Amnesia prone people commonly experience periods of *forgetfulness* in their lives, including events that other people find particularly memorable, and also *difficulty remembering periods of early life*. Fantasy prone people, in contrast, frequently report vivid early memories from a very early age.

People matching the amnesia prone characteristics are more likely than the general population to have been beaten, battered, injured, or have had other psychological trauma or abuse in early childhood. A few, but much smaller percentage, of fantasy prone people report such childhood trauma or abuse.

Amnesia prone people in general are not fantasy prone, they do not report vivid fantasies and are not excited or interested in talking about them, nor do they remember their dreams or fantasies very often. When they do, it is most often realistic fantasy of the near future, or a mundane sexual fantasy compared to the elaborate and vivid imaginings of fantasy prone people, which are commonly well remembered.

The amnesia prone people experience absorption, but under different conditions from the fantasy prone. They often become absorbed in imaginings with an **external locus of control**, such as a book or play, rather than in their own imaginings.

The **fantasy prone** are more likely to become absorbed in imaginings with an **internal locus of control**, as in self-generated fantasy.

²⁶ Spiegel, & Barabasz, A. (1988). "Effects of hypnotic instructions on P300 event-related potential amplitudes: Research and clinical implications," *American Journal of Clinical Hypnosis*, 31, 11-17.

The most dramatic experiences reported by amnesia prone people are automatic writing and “trance channeling.” These are very distinctive but lack the rich and varied content of the hallucinations of fantasy prone people (such as ghosts, premonitions, telepathy, precognitive dreams, and out of body experiences).

The clinical cutoff point for identifying dissociators is usually about 25% on the standard scale, the DES or Dissociative Experiences Scale. These are the people who seem to be at possible risk of dissociative disorders. These high dissociators often experience certain hypnotic suggestions as truly involuntary and effortless, as measured by interference tests.

Just as with fantasy proneness, there is only a weak correlation between hypnotic talent (high hypnotizability) and dissociative talent. It is the combination of amnesia proneness or fantasy proneness and *something e/se* (perhaps things like motivations, expectancies, and attitudes) that results in a particularly impressive ability for hypnotic phenomena.

Both fantasy prone and amnesia prone people have a dramatic degree of **psychosomatic plasticity**, but the conditions under which it occurs are very different.

Fantasy prone people produce strong somatic responses to **imagined events**.

Amnesia prone people produce strong somatic responses more commonly to **falsely attributed real conditions** than knowingly fantasized ones.

Amnesia prone people who erroneously believe they have eaten tainted food become nauseated. They develop a rash when they wrongly believe they have touched poison ivy. They become cold when watching arctic scenes. However, unlike the fantasy prone people, they do not typically experience these things from their own imaginings, but from a perceived or misperceived external event.

Hypnotic virtuosos are generally found to either be fantasy prone or amnesia prone. Many highly hypnotizable people are neither dissociators nor fantasy prone, but they are not the hypnotic virtuosos. They are often capable of responding to suggestion in a convincing way, but it is not as dramatic.

Other people with hypnotic talent (who are not dissociators) show a greater vulnerability to interference from other tasks when responding to amnesia suggestions. This indicates that **hypnotic talent is multi-**

dimensional, different people have different ways of responding to hypnosis.

*Hypnotic talent in general permits us make a connection with another person and to respond to suggestion in a way that seems effortless or involuntary. **We create that experience in different ways based on our own particular talents.** These talents extend to kinds of connections we can make with imagined other people as well.*

Fantasy Prone	Amnesia Prone
Frequently experience vivid sensory hallucinations, using fantasy to avoid pain.	Frequently experience lapses in memory, blocking out painful experiences from awareness.
Vivid recall of personal experiences, including those of early life.	Often experience periods of forgetfulness and difficulty remembering periods of early life.
Rich imagery prior to sleep, but not in control of transitions between sleep and waking. Information processing during sleep is not usually useful for problem solving. Dreams are often elaborate and often remembered.	Control of transitions between sleep and waking. Can process information more elaborately and systematically while asleep. Dreams are usually relatively mundane, and rarely remembered.
Intense emotional and physical reactions to things imagined, or observed and elaborated by imagination.	Intense reactions to things observed and exaggerated by misperception, rather than imagination.
False pregnancy and other hysterical effects of imagination frequently reported.	Memory lapses often reported. Strong reactions when things in the environment are misperceived, but less commonly due to imagined events.
Vivid and varied sexual fantasies, including orgasm in the absence of physical stimulation.	Relatively mundane sexual fantasies. Usually require physical and external sensory involvement for arousal and orgasm.
Active imagination involved in the production of responses. Tend to respond to imagined events.	Direct perception involved in the production of responses. Responses more commonly to misperceived or falsely attributed real events rather than imagined events.

Correlates well with imaginative absorption . Lack of <i>control</i> over absorption. Tendency to become absorbed in imaginings, with internal locus of control.	Correlates well with dissociation . Greater sense of control over absorption. Tendency to become absorbed in things with an external locus of control, such as books or plays rather than in their own imaginings.
Respond quickly to hypnotic inductions	Respond more slowly to hypnotic inductions.
Particular talent for rich, extraordinary experiences such as ghosts, premonitions, telepathy, precognitive dreams, and out-of-body experiences.	Particular talent for posthypnotic suggestion, relatively unimaginative age regression, trance channeling, or automatic writing, and amnesia. Experiences spontaneous amnesia fairly often.
Muscle tone not reduced significantly during hypnosis, moving and speaking are relatively normal.	Loss of muscle tone, lethargy, and difficulty speaking during conventional hypnosis.
Tendency to attribute hypnotic suggestion effects to their own imagination, and rarely are surprised at the effects.	Tendency to attribute hypnotic suggestion effects to the power of the hypnotist, and to be surprised at the effects. Tendency to remember less of the suggestions and sessions, and to misattribute hypnotic fantasies as real events.
Sometimes found to have had a difficult or abusive childhood.	Often found to have had a difficult or abusive childhood.
Often loses track of time.	Often unusually punctual.

The Cooperative Mindset: A Gray Area

If we take 1000 people and test them for hypnotic talent, about 200 to 250 will test as “highly hypnotizable,” and about 30 of those highly hypnotizable people will have exceptional and dramatic talent. Perhaps 15 or 20 of those virtuosos will be fantasy prone, and the rest of the virtuosos will be amnesia prone. What of the rest of the highly hypnotizable people? What about the hundreds of people who respond well to hypnosis, yet are neither amnesia prone nor fantasy prone?

It does not appear that these people have special talents, but that they have particular attitudes and beliefs about hypnosis and a perception of the situation and the hypnotist that is conducive to high responsiveness.

They are the people who are more willing to imagine along with suggestions rather than to contradict them. These are people with a cluster of traits that makes them more sociable, compliant, trusting, and imaginative, and less negative, suspicious, skeptical, and controlling than “low hypnotizable” people. They are in general more cooperatively involved in the testing, actively creating the psychological conditions where they can experience what is being suggested, rather than waiting passively for something to happen.

These are factors that can theoretically sometimes change from one situation or hypnotist to another, as when someone finds a particular situation where it seems particularly useful and worthwhile to cooperate. On the other hand, these traits are generally very stable over time for most people in most situations, especially if the negative attitudes are specific to hypnosis rather than new experiences in general.

This, largest, group of highly hypnotizable people could theoretically include everyone, if we could find a way to motivate them sufficiently and set appropriate positive expectations. Although standardized testing shows this as a fixed subset of the population, it is commonly claimed, and entirely possible, that sufficient attention to individual and social factors could allow nearly everyone to experience hypnotic forms of influence. For this reason, because it is so sensitive to testing conditions, we are calling it a “gray area” between “low” and “high” hypnotizable people.

Testing shows that “low hypnotizable” people use their brains somewhat differently than “high hypnotizable” people, and that the hypnotizability trait seems to be very stable over time. However, there are a number of clues that people can potentially modify their “hypnotizability” to some degree through training. At least to make use of hypnosis or suggestion by going from “low” to “moderate” hypnotizability, or “moderate” to “high.”

People who are not fantasy prone or amnesia prone probably cannot entirely reproduce the responses of those hypnotic virtuosos. On the other hand, that kind of dramatic responsiveness is not needed for most practical uses of hypnosis.

The Three Types of Highly Responsive People

The **fantasy prone**, the **amnesia prone**, and the “gray area” of **positively set** people has a basis in 30 years of empirical research.²⁷ Cluster analysis has verified that hypnotic experience does seem to have multiple dimensions of this sort.^{28, 29} Most of our experience with hypnosis is obviously not with hypnotic virtuosos, but with the majority of **positively set** individuals. Some of these people are highly socialized, cooperative, empathetic, compliant, and responsive to almost any hypnotist, under a wide variety of conditions. They show great readiness to experience hypnosis.

Most people, however, are responsive to hypnosis only under particular conditions, where they are able to quell their fears, ease their misconceptions and anxieties, and maximize their expectations and motivations to cooperate, be receptive, and imagine along with the hypnotist. **This depends to a great degree, for most people, on the ability of the hypnotist to put them at ease and establish a positive rapport.**

People who are very talented at hypnosis do not need to be highly motivated to imagine along with the hypnotist or to experience hypnosis in order to experience hypnotic phenomena. They simply need to be willing to be receptive and not hostile. This is why motivation, expectancy, and attitude does not completely correlate with hypnotizability. There are a few very talented people whose response relies to only a small degree on having a **positive set**.

Most people do not have that level of talent, however, and the conditions under which hypnosis occurs become very important for them, including attitudes, motivations, and expectancies associated with both the situation and the hypnotist.

In all cases, certain factors are important in hypnosis, including the **demand characteristics** of the situation, the **rapport** and relationship

²⁷ Barber, T.X. (1999). “A Comprehensive Three Dimensional Theory of Hypnosis,” in Irving Kirsch, Antonio Capafons, Etzel Cardena-Buelna, and Salvador Amigo, (eds.) *Clinical Hypnosis and Self-Regulation*, APA Press.

²⁸ Pekala, R.J. (1991). “Hypnotic types: Evidence from a cluster analysis of phenomenal experience.” *Contemporary Hypnosis*, 8:95-104.

with the hypnotist, and various qualities (both verbal and nonverbal) of the **suggestions** being given.

Review of Chapter 2

- Our ability to experience hypnosis hinges around our **responsiveness to suggestion**.
- Responsiveness to suggestion means **behavior or visceral processes in response to an expectancy**, rather than generated voluntarily and associated with a conscious intention.
- Response to expectancy requires a **motivation to produce an expected outcome**.
- Anyone who is **willing to experience something new** can experience hypnosis to some extent.
- Each person generates their own experience in their own way, using different strategies and talents from other people.
- The extent to which someone can experience the more dramatic phenomena of the suggestibility scales will depend upon their own talents, as well as on their motivation to produce those experiences.
- Most *highly hypnotizable* people share a number of motivational and attentional characteristics in common.
- *Highly hypnotizable* people are also different from each other in their specific talents.
- The extreme end of talented hypnotizable people are the **fantasy prone** and the **amnesia prone**, but they are relatively rare.
- Most highly hypnotizable people have a **positive mindset** and openness to new experiences rather than being fantasy or amnesia prone.
- The **fantasy prone** are capable of producing dramatic changes in experience and body processes in response to fantasy. They score very highly in imaginative involvement and often become absorbed in fantasy very rapidly.
- The **amnesia prone** are also capable of dramatic changes in experience and body processes, but usually in response to something perceived externally. They

²⁹ Pekala, R.J., Kumar, V.K., & Marcano, G. (1995). "A partial replication concerning phenomenal experience." *Contemporary Hypnosis*, 12:194-200.

are particularly adept at suggested amnesia, posthypnotic suggestion, and age regression phenomena.

- The **amnesia prone** are more likely to forget the source of a hypnotic illusion, mistaking it for reality. They are more likely to experience a hypnotic fantasy as surprising, extraordinary and as caused externally. They take longer to respond to a hypnotic induction than the **fantasy prone**.
- Most people can improve their responsiveness to suggestion through training to increase their readiness to experience something new. Training can also help increase their motivation for actively thinking along with suggestions (rather than waiting passively for their experience to change). This training does not compensate for lack of talent, it helps make use of existing talents.
- In addition to **fantasy proneness**, **amnesia proneness**, and a **cooperative mindset**, other important factors are the **demand characteristics** of the situation, the **rapport** with the hypnotist, and the **verbal and nonverbal structure of the specific suggestions** given.

Summary of Chapter 2

All that most people need to experience hypnosis is a general readiness for new experience, and a willingness to help create it with their own existing talents. They may not experience the most dramatic phenomena of hypnotic suggestion, but they can make use of expectancy to influence their experience and body processes.

For most people, this means that they are willing to think along with suggestions in order to help create the suggested experiences. This is something that can be learned to some degree.

There are some people who have particular talents for responding to suggestion, and they probably do not need to think along with suggestions to create responses. Their developmental history has led them to be able to become absorbed in fantasy or to block out aspects of their own experience. This allows them to respond in a more direct way to what they perceive. Specific developmental histories seem to lead to specific kinds of hypnotic responsiveness profile.

Among the most distinctive kind of developmental history are the traumatized or abused people who have learned to block out aspects of their own experience, and creating apparently dissociated control systems. This makes them particularly good at hypnotic age regression, hypnotic and posthypnotic amnesia, and posthypnotic suggestion in general. It takes them a while to respond to hypnotic inductions, but once they do, they experience hypnotic responses as surprising and extraordinary and tend to attribute them to the hypnotist rather than themselves.

Another distinctive kind of developmental history is the frequent involvement in fantasy as an escape or as a source of pleasure, without the tendency to block out experiences. These people are less likely to be traumatized at an early age. Their fantasies are frequent and vivid and often sexual in nature, and there are often strong body responses to them as if the fantasies were real. These people are adept with self-regulation, and tend to realize that they are producing the experiences themselves rather than attributing it to the hypnotist.

The experience of hypnosis varies from person to person depending on their talents. Most people are capable of becoming sufficiently motivated and cooperative to experience some of the phenomena of hypnosis in some way. The most dramatic phenomena of hypnosis may be limited to people with particular talents for them.

Using hypnosis in a practical way only requires response to expectancy, as with placebo responding, not the dramatic phenomena that may be limited to people with certain developmental histories.

The Story So Far ...

*In the first chapter, we saw that human beings evolved with a remarkable capacity to interpret a situation differently based on what they expect. We also saw that the concept of **suggestion** is a way of describing responses that are produced because we expect them to occur as outcomes rather than as voluntary actions. In the second chapter, we saw that even though virtually all people can alter their own experience and responses through expectancy, people also have different talents for accomplishing this feat, because they have different traits and developmental histories.*

Chapter 3

Hypnosis and Healing

Healing the Mind and Healing with the Mind

Illness and Healing

Coping with Different Kinds of Illness

In every culture there are people whose distress or disability brings them to someone designated as a healer. There are common elements to all forms of illness and healing, but also some important distinctions between different forms of illness and their healing processes.

All illness can comprehensively be seen as failure of our coping mechanisms to deal with our environment. The result is some combination of *distress* and *disability*. This definition helps to explain why we see such different kinds of illness today than our ancestors suffered. Similarly, **virtually all healing can be seen as something that facilitates our natural tendency to repair or improve ourselves.**

From an evolutionary perspective, there is no “normal” or “perfect” human body or human genome, only different compromises. Each compromise brings with it different capacities to adapt to different environments. If one component were to be “too good,” it could easily upset the functioning of the entire organism. We have the characteristics we have because of our evolutionary history and the tradeoffs that have been made over time.

The symptoms of illness generally represent one of two different things. Either they are our defenses against various environmental threats, or they are defects (maladaptive tradeoffs). Fever, vomiting, coughing, and sneezing are all examples of attempted defenses against foreign pathogens that our body considers a threat. In our natural environment,

we often come into direct conflict with other organisms that have not evolved with our health as a priority.

Just as important, or perhaps more so, are environmental threats that result from our living in an environment very different from the one we evolved in over millennia.

Let's take a common problem as an example: obesity.

The availability of dense caloric foods with relatively little nutrition; as well as labor saving devices and inactive lifestyles; has produced an epidemic of obesity and related disorders that were rare in earlier human history.

We have two notable defensive abilities: (1) to deposit body fat easily when dense foods are available, plus (2) to hoard body fat during starvation. These two evolutionary survival defenses, which made sense in our hunter-gatherer days, combine today to make it very easy to get fat and very difficult to go back to being lean in the modern environment. This is as much a disease as the flu. However in this case, our evolved desires lead us astray rather than any competition with other organisms.

Our increased lifespan due to medical advances has also brought out diseases that previously were unknown because people didn't live long enough to worry about them.

Diseases themselves do not result from natural selection, our vulnerabilities are shaped by the compromises made by evolution. **For every disease, there is an *evolutionary* explanation as to why human beings are vulnerable, as well as a *proximate* explanation as to why a particular person succumbs to the disease while others don't.**³⁰

Perhaps a foreign pathogen overwhelms our immune system. Or maybe we are overwhelmed by feelings of helplessness after a series of traumatic events. Both types of illness represent an evolved vulnerability and a proximate cause in an individual case. In each case, we experience symptoms that are distressing or disabling, and we may seek help from others.

In modern American culture, we make an important distinction between "physical" and "mental" illnesses.

³⁰ Nesse, Randolph M. & Williams, George C. (1998). "Evolution and the Origins of Disease," *Scientific American*, November, 1998, pp. 86-93.

Physical illnesses are things that seem to go wrong with the body. We generally entrust these problems to a medical doctor, and expect them to examine and manipulate our physical body to treat us.

Mental illnesses are a potpourri of commonly seen disturbances of communication, thinking, or feeling which cause people (or those around them) to become alarmed.

When we suspect a mental illness, beyond our ability to cope, we often instead entrust our care to a psychologist, psychiatrist, social worker, religious healer or counselor, Scientology group, hypnotherapist, or any number of different “alternative” healers. All of these approaches have the same goal. That is: **attempting to relieve suffering and disability by helping us change our attitudes and behavior, rather than (or in addition to) our body.**

Some problems, presumably those most rooted in common human biology, have virtually the same symptoms in every culture. In our culture, we consider this category to contain the physical illnesses, things like cancer, measles, and polio, as well as some of the most serious mental illnesses, such as Alzheimer’s disease, schizophrenia, and bipolar disorder.

Virtually all mental illnesses traditionally considered “psychoses” can fit into this category. These were originally seen as cases of demonic or saintly possession, and treated by torture, restraint, imprisonment, exorcism, death, or various truly bizarre treatments. Today, we typically think of this kind of illnesses as “brain disorders” and treat them commonly with biological interventions such drugs, shock, and surgery by a specialized medical doctor.

These illnesses are generally assumed to have a strong dependence on genetic or at least constitutional factors. However, attitude and behavior change can play a vital role in both helping the healing process and helping them to cope with whatever disability or distress cannot be healed.

Many persistent forms of distress and disability, certain of the mental illnesses, take different forms from one culture to another. There may be a general predisposition for this kind of problem, but it seems clear that the specific form it takes must be learned in some fashion, probably during early maturation, and perhaps as some sort of faulty coping mechanism.

In this category we find things like *somatoform* disorders, anxiety disorders, dissociative disorders, eating disorders, “hysterical” symptoms, and so on. Although we, as a culture, tend to seek physical

solutions (drugs) for these types of problems, they are often more effectively addressed by attitude and behavior change than by biological (medical) intervention. These are the conditions traditionally considered “neuroses.”

These problems fall into a difficult borderland between “normal” behavior and frank psychosis. They don’t readily respond to our willful attempts to “get better,” and often resist our attempts to “talk it out.” This is where the psychological techniques of mind healing are at their most influential. The history of hypnosis has been intimately tied to the discovery and study of neuroses.

There are also some forms of distress and disability that don’t quite fit into those two categories.

One example is the commonly seen problem of someone whose ability to cope has been **temporarily overwhelmed by circumstances**. They may show severe symptoms of a wide variety of types, but which can be relatively easily treated or even subside spontaneously over time. They are not nearly as persistent as the anxiety disorders or eating disorders for example.

Another example is situations where people don’t see any problem with their behavior, which fits their own consistent values, but their **behavior distresses others around them**. This is especially difficult to categorize if they are not showing the kind of severe disturbances seen in schizophrenia or other forms of delusion.

Yet another difficult category consists of **problems of alienation and identity**. This type of problem is most common in leisured or educated classes, and most common at certain ages as we pass through somewhat predictable crises of life.

Common to all of these kinds of problems is that **people seek help, not just because of symptoms, but because they feel unable to cope with the symptoms themselves.**

Although it might truly be said that most healing, both physical and psychological, is done by sick individual themselves and not “healers,” the designated healer often turns out to be an important catalyst in the process.

Hope and Healing

Just as our culture separates “physical” and “mental” illnesses, we also separate “medical” and “psychological” treatments. The “psychological” treatments involve emotional support and helping us change our attitudes and behavior.

This obviously does not always require a designated trained healer, although healers play an important part in every culture. In fact, it could sometimes take place by our own efforts or with the help of family and friends. Even when a trained professional is involved, it is for the most part the *clients healing themselves*.³¹ However **psychological healing** is provided, it potentially gives us several benefits.

First, psychological healing helps us gain some greater sense of control over the situation, which helps us take an active role on our own recovery. Second, it may in some cases alleviate specific psychological symptoms. Third, it may help produce a better psychological climate for physiological healing.

Modern research has consistently shown that **our ability to mobilize ourselves to meet challenges depends upon our psychological state**. This is true on both the *psychological* and *physiological* levels, from our motivation to act, to our immune response.

When we feel overwhelmed by our circumstances, when we simply give up, both our behavior and our physiological healing processes become relatively inactive, and we become particularly susceptible to both physical and mental illnesses. This is a natural result of a main theme of this book, the way the brain is organized to help us regulate ourselves at many levels.

The degree to which stressors in our environment cause us to feel helpless and overwhelmed is often called **demoralization**. This is an important part of what brings people to seek help, and is critical to address in all forms of healing.

Stressors that are perceived to be *externally caused, well-defined* and *time-limited* are usually relatively benign and do not demoralize us.

On the other hand, when we perceive that a stressor is going to be more permanent, to have pervasive negative consequences in our life, or to reflect negatively on us personally, it becomes much more demoralizing.

³¹ Among other places, the case for this view is made convincingly in: Bohart, Arthur C. & Tallman, Karen (1999). *How Clients Make Therapy Work: The Process of Active Self-Healing*. APA Press.

This is when we are said to have lost our faith, or even to have lost our hope. We stop working to change things, and our body also seems to stop fighting to maintain its integrity and vitality. This happens most clearly in **depression**, but there is an element of demoralization in most illness for most people.

One survey implied that about a quarter of the general population in the U.S. is largely demoralized at any given time, about half of that group seriously enough to be clinically impaired and require help. Another survey indicated that of the clinically impaired people seeking help, about 80% of them are also demoralized. Loss of hope is not a universal factor in illness, but it is clearly widespread and important.

How we interpret events depends upon our attitudes and beliefs, which arise from the model of the world we have constructed in our mind over our lifetime. This model in turn comes from a combination of our inborn predispositions for interpreting things (from both our inherited characteristics and our early experience) and our later extreme life experiences. It is composed of *a collection of stable attitudes with cognitive, emotional, and behavioral components that may or may not be consciously known to us.*

We all make certain assumptions about things that we are not aware of making. These **unconscious assumptions** are especially important in psychological healing because they profoundly influence our thoughts, behavior, and feelings, yet can be extremely resistant to change.

For various reasons, and by using various strategies, we often hold on tenaciously to our assumptions, including the *unconscious* ones. We often set up ways to confirm that these assumptions are true, but while biasing the test, or we might instead find ways to avoid testing the assumptions. **One of the main goals of psychological healing is to provide a safe environment for testing and disconfirming our erroneous assumptions.**

Some of the most damaging assumptions and attitudes we have are those that lead us to believe that we have failed to meet our own or someone else's expectations of us. Other damaging assumptions lead us to believe that we are completely unable to cope with our situation, and helpless to change it. The result is that we cling to some small set of habitual behaviors, we avoid novelty and challenges, and we fear making long-term plans. We feel **hopeless, helpless, and isolated**, and become preoccupied with basic survival.

This demoralized state reflects an underlying current of despair that can be the result of other symptoms, the cause of other symptoms, or both at

once. For any psychological healing to be effective, it must first address the despair. **Removing other symptoms without addressing the underlying despair often results in the appearance of new and sometimes even worse symptoms.** The point is that *psychological symptoms are often a way of protecting us in some way from worse distress.*

Core Components of Psychological Healing

There are two aspects of psychological healing, general and specific, which apply to all its many forms.

There is a general aspect: giving **hope** and combating demoralization to motivate us to improve our situation or adapt positively to it, as well as energizing our body's healing processes.³² The general aspect applies to all illnesses.

There is also a more specific aspect, the alleviation of specific psychological symptoms, or engaging specific healing processes in the body.

General Aspect of Mental Healing

The general aspect of mental healing makes use of elements common to all healing rituals in all cultures³³: a healing **myth**, a healing **ritual**, a healing **setting**, and a healing **relationship**. These four elements are found in all situations where one person is able to successfully give hope to others and engage their healing processes.

The healing **myth** is a rationale that provides a plausible explanation for the symptoms and a way of resolving them. This gives the healer and their patient confidence that the problem is understood and that there will be an end to it. The healing myth can come from a religious or magical worldview, or any of the myriad different theories used by therapists. It is mythical in the sense that it is always an imaginative view of recurrent and important human experience, and because it *needn't necessarily be* validated empirically in order to be helpful.

The healing **ritual** is something that both healer and patient actively do which they believe will resolve the problem. As far as the psychological

Mental healing involves four elements: **myth, ritual, setting, and relationship**

³² Snyder, C.R., Michael, Scott T., & Cheavens, Jennifer S. (1999). "Hope as a Psychotherapeutic Foundation of Common Factors, Placebos, and Expectancies." *In The Heart and Soul of Change: What Works in Therapy*, edited by Mark A. Hubble, Barry L. Duncan, Scott D. Miller. American Psychological Association.

³³ Frank, Jerome D. and Frank, Julia B., (1991). *Persuasion and Healing: A Comparative Study of Psychotherapy*. Johns Hopkins University Press, Third Edition, pp. 39-43.

part of healing, the belief in the ritual is more important than whether it actually works or not. The most powerful rituals are those which change the subjective state of the patient by invoking strong emotions, and demonstrate the unique power of the healer. Methods like hypnosis, relaxation, and emotional flooding are particularly effective as healing rituals. In modern medicine, drugs and surgery can also serve as powerful healing rituals, in addition to being useful active agents.

The healing **setting** is a time and place that carries an aura of power. It may be a doctor's office or a temple, or some more ordinary place that has been purified by special rituals. The purpose of this special setting psychologically is to strengthen our expectation of healing by emphasizing the unique powers of the healer, and to provide the safety to undergo the healing ritual (which often involves being physically or emotionally vulnerable).

The healing **relationship** is an emotionally charged, confiding relationship, often called a **therapeutic alliance**. Many theorists and researchers have emphasized this as an important aspect of all medical and psychological treatments. Psychotherapy in particular requires a good therapeutic alliance, but research has demonstrated that even drug therapies benefit from it. It is interesting to note that we can sometimes even form a therapeutic alliance in a symbolic way with the author of a self-help book, or with a supernatural entity through our religious beliefs.

The **myth** and **ritual** of a healing situation exert their effect on us in several ways:

1. A strong shared belief system helps to sustain mutual interest of healer and patient and strengthen the therapeutic relationship
2. An expectation that we will get help is created and maintained.
3. New learning experiences are provided to help demonstrate alternate ways of thinking about problems.
4. Strong emotions are aroused, providing motivation for change and helping to reorganize the way we think about problems in a deep way.
5. Being able to control how we feel and get a sense of hope through the myth and ritual gives us a new sense of self-mastery and self-efficacy. This occurs through a combination of plausible explanations about our situation and small success experiences that we can build upon.
6. Providing opportunities to practice and test new skills and insights.

In addition to fostering hope and mobilizing healing and active participation, psychological healing can sometimes also alleviate suffering in more specific ways.

Unfortunately, there are many almost insurmountable methodological problems in proving that psychological techniques are effective for particular symptoms. Most of what has been shown scientifically so far varies little from common sense. For example:

1. Most symptoms in most people benefit more from *any* kind of formal therapy than from being kept on a waiting list (although some people do improve while on a waiting list, seemingly due to the expectation of getting help). The elements provided by formal therapy are often useful for the psychological aspects of healing.
2. People who receive *any* sort of therapy report greater improvement than 80% of those who do not.
3. Specific cognitive and behavioral methods designed to alleviate phobias and other fear-related problems are more effective than open-ended exploratory or humanistic therapies. Fear conditioning and extinction appear to provide a reasonable model of problems having to do with fears and phobias,
4. Cognitive therapies (changing the way we think about situations) are often extremely effective in mild to moderate depression. The effectiveness is roughly equivalent to that of antidepressant drugs, but combining cognitive therapy and drugs does not necessarily result in greater improvement than either treatment alone. The case is similar for some anxiety disorders, such as panic disorder.
5. All therapies deal with the cognitive, emotional, and behavioral aspects of attitudes, but with differing emphasis.
6. *Expectation* or *placebo* effects are an important element in both psychotherapy and drug treatment. These are particularly effective in relieving depression and anxiety and instilling hope, but this tends to have a positive effect in turn on other aspects of healing. Therefore, **placebo response is an integral part of all forms of treatment.**
7. The placebo effect derives largely from four things. This includes the **expectations of the patient**, the **expectations of the healer**, how well the expectations of the patient **match those of the healer**, and how well the expectations of the patient **match what actually happens** in the treatment process.

8. A preliminary interview that helps establish expectations about treatment can often enhance the effect of treatment.

The *general* elements that make *hypnosis therapy* or **hypnotherapy** effective are mostly the same as the elements that make other forms of psychotherapy effective. They are the elements that combat demoralization through myth, ritual, setting, and relationship, and which promote and enhance the placebo effect by adjusting expectations.

Specific Aspects of Mental Healing

The *specific* elements that make the use of **hypnosis** in therapy particularly effective include:

- Evocation of strong emotion, which helps motivate change and reorganize thinking about a situation, because of *greater lability of emotions during hypnosis*.
- Rehearsal of new ways of thinking, feeling, and acting in vivid fantasy because of *reduced reliance on reality orientation* during hypnosis, and *temporary motivation to enact roles* suggested by the hypnotist.
- Flexible exploration and reinterpretation of past history because of both state-dependent recall and *reduced reliance on reality orientation* in hypnosis.
- Increased sense of the power of the hypnotist due to the *sense of involuntariness* in responding to suggestions.
- Paradoxically, an increased sense of self-control due to the ability to use self-suggestion tests effectively with a *sense of involuntariness*. We often feel as if we are indirectly gaining control of faculties that are normally outside of our sense of voluntary control.

These factors have historically made hypnosis and similar forms of influence seem extremely powerful, even dangerously so. They have been extremely important historically in demonstrating that many forms of distress and disability can be alleviated through psychological methods.

Note however that in spite of its mystique, hypnosis does not simply provide a way to “suggest” serious psychological symptoms away. It is often very effective in psychotherapy, but it works within the same kinds of framework as other therapies, adding some uniquely effective elements

in some cases. It does this partly by focusing specifically on our natural capacities for self-regulation and partly by taking advantage of the mystique of hypnotism to create *placebo* effects.³⁴

Review of Chapter 3

- Illness is the failure of our coping mechanisms to deal with the challenges of our environment.
- Illness consists of a combination of **distress** and **disability**.
- It is not just the disability of symptoms that brings us to a healer, it is also the distress caused by our inability to cope with the symptoms ourselves.
- Healing is anything that helps facilitate our natural ability to repair and improve ourselves, but it **must also address the perception of being unable to cope with the illness**.
- Psychological healing addresses elements of all illness, but is particularly associated with certain symptoms involving behavior and attitude.
- Psychological healing works in various ways, including giving us a greater sense of control or coping, helping to activate physiological healing mechanisms, and alleviating specific psychological symptoms.
- **Demoralization** limits our ability to be actively self-healing. Psychological healing must address the despair as well as the specific disability caused by particular symptoms, or new symptoms are likely to arise.
- We become demoralized when we perceive challenges as having no end, being poorly defined, and reflecting negatively on us personally.
- One of the goals of psychological healing is to help us reinterpret our current challenges as well-defined, externally caused, and being time-limited.
- This re-interpretation is accomplished by means of **myth, ritual, setting**, and healing **relationship**. The myth provides a plausible

³⁴ Kirsch, Irving (1999). "Clinical Hypnosis as a Nondeceptive Placebo," in *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*, edited by Irving Kirsch, Antonio Capafons, Etzel Cardena-Buelna, and Salvador Amigo. American Psychological Association.

explanation for the illness, making it better defined. The ritual helps establish that we are doing something active to address the illness. The setting and the relationship reinforce the myth and ritual elements.

- Part of what happens in psychological healing is that we question and test our maladaptive assumptions. We are sometimes unaware of assumptions that limit us and create or maintain our symptoms.
- There is a general aspect to psychological healing, the climate which helps us mobilize ourselves to be actively self-healing.
- There is also a more specific aspect to psychological healing, the alleviation of particular symptoms.
- Both the generalized *placebo effect* and specific *suggestion effects* are important in all healing, even when drugs, surgery, or other somatic treatments are involved.
- Hypnotherapy in particular is a healing art form where we manipulate expectancy in order to produce both generalized placebo effects and specific suggestion effects to aid in self-regulation and active self-healing.

Summary of Chapter 3

Psychotherapy can be an effective way to help us maximize our ability to heal ourselves. Hypnosis, via the manipulation of expectancy, can often significantly enhance the effects of psychotherapy. This works by helping us reinterpret the situation in a way that makes us feel more in control. This helps mobilize both our physical and psychological resources.

By bringing out our individual mental talents, hypnosis adds unique capabilities for evoking strong emotion, establishing a therapeutic alliance, flexibly exploring and interpreting personal history, rehearsing new ways of thinking, feeling, and acting, and altering our sense of self-efficacy. This allows us to create a more optimal psychological and physiological climate for healing ourselves by regulating our biological processes.

The Story So Far ...

Hypnosis provides us with an effective approach for altering our own experience, using subtle cues to change what we expect. This allows us to make use of our individual talents in various ways. This is particularly useful in altering our sense of self-efficacy, which is how we mobilize our biological processes for self-healing. By helping us reinterpret challenges as better defined and more controllable, hypnotherapy can help us make better use of our natural self-regulatory processes.

Chapter 4

Western Perspectives

Hypnosis in Western Culture

If the “hypnotic state” is so elusive even to trained observers, how do we know when hypnosis is happening, or whether it exists at all ?

The modern practice of hypnosis is highly varied. In order to get an understanding of what hypnosis is all about, we are going to take a brief survey of the various ways it has been practiced over the years. From that web of diverse views, some common themes will begin to emerge, and we will begin to see what hypnosis is about, and why experts sometimes hold such divergent views about it.

Hypnosis Wakes Up

For historical reasons, hypnosis was at first associated with sleep; a kind of partial sleep, or a state midway between sleeping and waking. This was the influential view promoted by the famous pioneering physiologist Ivan Pavlov. This also seems like a natural and even intuitively obvious way to look at *hypnotic trances*, but surprisingly it turns out to be wrong (or at least very misleading).

There are twilight states between sleep and waking, often called **hypnogogic** and **hypnopompic** states, but these have no important direct connection to hypnosis.

The prefix *hypno* in all of these cases simply refers to sleep. **Hypnopompic** and **hypnogogic** states are indeed linked to transitions between sleep and waking. However, **hypnosis** was misnamed by early students of the practice because it *appeared* to have something to do with sleep.

Research has shown decisively that the appearance of sleep is an illusion. We can theoretically perform the procedures of hypnosis to some extent with a person who is wide awake, partially asleep, or completely asleep, and result in them being wide awake, partially asleep, or completely asleep. There is very little dependence at all between hypnosis procedures and sleep, and no necessity for people to be either completely or partially asleep to participate in hypnosis.

“Hypnotic” suggestion operates under a wide variety of conditions.

Contrary to the popular view of hypnosis in the media, there are **wide awake and alert forms of hypnosis** (or at least forms of *suggestion*). These may have nothing to do with physically relaxing, staring at a monotonous stimulus, or obeying commands for sleep. There is no strict dependence on any outwardly recognizable kind of “trance” in order to have hypnotic influence.

One thing they all have in common is the peculiar sense of things we do “just happening” without our making them happen. There is an alert and awake form of suggestive therapy called “self-regulation,”³⁵ and even a reliable procedure for inducing hypnosis by riding a stationary bicycle. There is room for disagreement over whether the alert and awake forms of suggestive therapy should be called **hypnosis**. They are used for the same purposes, and seem very similar in many ways, but they don’t involve the traditional appearance of sleep.

Most classic hypnotic effects are based on ideas effortlessly producing actions.

Early psychology theorists going back to William James recognized that imagining things vividly sometimes caused them to come about. In particular, imagining a movement often causes the movement to occur. This is particularly true if there is no competing motivation present in our mind.³⁶ Even though we don’t have a conscious intention to move, the movement occurs in response to the mental image, or in response to a verbal suggestion. This effect is central to the concept of **suggestion**.

Far from a trivial effect, this observation reveals something very fundamental about the way the mind works. Our intuitive view is that we are consciously aware of most or all of the important influences on us. However, the very existence of **suggestion** shows that we are very

³⁵ Amigo, Salvador, (1999). “Self-Regulation Therapy: Suggestion Without Hypnosis,” in *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*, edited by Irving Kirsch, Antonio Capafons, Etzel Cardena-Buelna, and Salvador Amigo. American Psychological Association.

³⁶ The details are a bit more complicated than this simple description implies. An “idea” or even “image” in the mind are not well defined things but classes of constructs with a more complex underlying structure. For example, imagining an *end-result* can yield different effects than imagining *a way of producing that end-result*. Also, people can respond to suggestions even though they are *imagining something contradictory* at the time. For a brief review, see Gail Comey & Irving Kirsch, “Intentional and Spontaneous Imagery in Hypnosis: The Phenomenology of Hypnotic Responding,” *International Journal of Clinical and Experimental Hypnosis*, Vol. 47, No. 1, January, 1999, pp. 65-85.

capable of responding *in a more automatic way* to cues in our environment, or giving up our sense of control to another person.

This concept of **suggestion** was long associated solely with hypnosis, but more recent research has shown that *suggestion operates all the time*, not just during hypnosis. Remarkably, it turns out that people respond this way without doing any recognizable hypnosis, and hypnosis only has a slight to moderate influence on this effect for most people.

In other words, **suggestion** *is a much more general influence on us than just what happens during formal hypnosis, it is a factor in much of our everyday life*. The commonly used procedures of hypnosis seem to be just one particular way of making use of suggestion.

There is a widely known form of unaware movement where a swinging pendulum seems to answer questions, while the holder does not feel themselves moving it. This is sometimes known as **Chevreul's Pendulum** effect.

Chevreul's Pendulum, while not actually hypnotic in nature, is the classic and possibly the best-known example of this kind of effect of imagination. This has sometimes been called an **"ideodynamic" effect**, meaning that ideas *somehow* bring about action, seemingly without our conscious participation in helping to bring it about.

Exactly how this effect happens is not yet known. The original theory, proposed by William James³⁷, and elaborated by others³⁸, was that ideas in the mind that were not contradicted simply led to behaviors.

This led to a scientific consensus in the 1970's that hypnotic suggestion worked because imagining results would tend to produce them, the **ideodynamic** effect.³⁹

This idea was supported by the findings that the imagination-related constructs of **absorption**⁴⁰ and **fantasy proneness**⁴¹ seemed to be at least moderately correlated with hypnotizability.

³⁷ James, William (1890). *Principles of Psychology* (Vols 1 & 2). New York: Holt.

³⁸ Arnold, M.B. (1946). "On the mechanism of suggestion and hypnosis." *Journal of Abnormal Psychology*, 41: 107-128.

³⁹ Both the "state" and "non-state" theorists seemed to agree on this point. For the "non-state" perspective on this consensus, see T.X. Barber, N. P. Spanos, and J.F. Chaves, (1974). *Hypnosis, Imagination, and human potentialities*. New York: Pergamon. For the "state" perspective, see E.R. Hilgard, (1973). "The domain of hypnosis: With some comments on alternate paradigms." *American Psychologist*, 28: 972-982.

⁴⁰ Tellegen, A. & Atkinson, G. (1974). "Openness to absorbing and self-altering experiences ('absorption'), a trait related to hypnotic susceptibility." *Journal of Abnormal Psychology*, 83:268-277.

Although it is still apparent that imagination plays an important role in hypnosis, it also appears from several lines of evidence that the ideodynamic theory is too simplistic.

First, fantasy proneness and absorption only account for about 2% of the variance in how people respond to suggestion.⁴² They are found in the majority of the very most talented hypnotic responders, but those are relatively rare.

Second, it was found in a number of different experiments that many people can respond successfully to a suggestion while imagining the opposite of what was suggested.⁴³

Third, instructing people to imagine a situation where the desired response would normally be produced, does not reliably increase responsiveness.⁴⁴

Some kinds of imagining seem to lead to responses that feel involuntary, while others do not. The pattern seems to be that images of the end-result often improve responsiveness, while images of ways to produce the end-result are often either ineffective or even distracting. This has led to the theory that it is the **expectation of a result**, rather than imagery itself that is most crucial in responding to hypnotic suggestion.

A dramatic form of ideodynamic effect is demonstrated with the *planchette*, the device commonly called a **Ouija Board**. The device, first popularized during the Spiritualist movement (and later as a children's toy), seems to call upon disembodied intelligences to answer questions. Actually it uses subtle (and sometimes not so subtle) muscular movements we are not aware of making. In an atmosphere where we expect to get a response, it sometimes appears without our conscious intervention.

In **hypnosis**, the additional factor is that someone else, the hypnotist, is suggesting the ideas that turn effortlessly into action, giving the illusion that the hypnotist is controlling the mind of the subject. However, the 'hypnotized' person could just as well be imagining (expecting) things for themselves and producing actions. This would be *self-hypnosis*. As with

⁴¹ Wilson, S.C. & Barber, T.X. (1983). "The fantasy-prone personality: Implications for understanding imagery, hypnosis, and parapsychological phenomena." In A.A. Sheikh (Ed.) *Imagery: Current theory, research, and application* (pp. 340-387). New York: John Wiley.

⁴² Council, J.R., Kirsch, I., & Grant, D.L. (1996). "Imagination, Expectancy and Hypnotic Responding." In R.G. Kunzendorf, N.P. Spanos, & B.J. Wallace (Eds.), *Hypnosis and imagination* (pp. 41-65). Amityville, NY: Baywood.

⁴³ See Kirsch and Comey, 1999, p.66 for a list.

⁴⁴ Again, see Kirsch and Comey, 1999, p. 66 for a list.

many areas of human life, **an imagined other person can sometimes be as strong an influence as a physically present person.**

Fortunetellers have long gotten a lot of mileage from the pendulum effect because it is so easy to demonstrate and so convincing. The swinging pendulum seems to have a mind of its own even though the holder is actually controlling it, without a direct sense of doing so.

The pendulum is particularly interesting because it is one of the few types of ideodynamic effect that is demonstrable with nearly everyone, regardless of their specific talents for suggestibility or hypnosis. Some of the other well known suggestion effects, such as suggested hallucinations or suggested anesthesia, require additional talents that not everyone possesses to an equal degree.

Some experts consider hypnosis to be occurring whenever we use our imagination in a focused way, such as remembering a sequence of events.⁴⁵ Some students of hypnosis even believe that anytime our consciousness is altered even slightly (as in "spacing out" at various times during the day), this shift means we are in a *hypnotic trance*. If this were true, we would be in a hypnotic trance every time we read a moving poem or had a daydream. In some sense, this may well be true.

The moments described above (and many others) may well involve experience being altered in the way it is altered in hypnosis. However, viewing those brief moments as examples of *hypnotic trance* is probably taking things a bit too far. The "always in trance" view misses the point of the potential practical and clinical significance of *altered consciousness*, by trivializing it.⁴⁶

It is probably more accurate to say that our momentary lapses in alertness are small reminders of the kind of shift of awareness and attention involved in formal hypnosis. Skillfully done, hypnosis makes much more systematic and lasting use of such shifts. Hypnosis turns out to be quite a complex activity with many aspects to it.

While the psychological processes underlying hypnosis may be found in everyone and at many times during the day, the specific effects we study in the hypnosis laboratory and those we demonstrate in stage hypnosis are much more restrictively defined.

⁴⁵ Rossi, Ernest L. & Cheek, David B (1988). *Mind-Body Therapy: Ideodynamic Healing in Hypnosis*. New York: W.W. Norton & Co.

⁴⁶ Gilligan, Stephen, (1997). Living in a Post-Ericksonian World. In William Matthews and John Edgette (Eds.) *Current Thinking and Research in Brief Therapy*, Volume 1, Brunner/Mazel, pp. 15.

Some popular forms of psychological technology, such as *Neurolinguistic Programming*, use hypnotic techniques without formal induction of trance, simply by encouraging people to imagine specific things. Nevertheless, some theorists insist that there must be some **feeling of involuntary responding** to have hypnosis in any meaningful sense. It becomes largely a matter of perspective. Several different useful definitions of hypnosis could in principle be supported by the same clinical and laboratory observations.

The Forms that Hypnosis Takes Today

The Very Different Views of Hypnosis

“If a striking effect is to be produced by an apparatus calculated to affect the imagination powerfully, the faith-curer of the grotto has this advantage over the endormeur of the platform or the hospital. He does not intrude his own personality and train his patient to subject his mental ego to the ‘operator.’ The ‘mesmeriser’ seeks to dominate his subject; he weakens the will power, which it is desirable to strengthen, and aims at becoming the master of a slave. I do not need further to emphasize the dangers of this practice.”

A. E. Waite

A.E. Waite in the above quote captures the irony of the different forms of hypnosis.

The dramatic authoritarian methods of the traditional mesmerizer, many stage hypnotists, and some hypnotherapists, have the greatest effect on the imagination, but they are based largely on taking advantage of the client’s expectation (or desire) to be controlled. This is most often considered an unhealthy way to conduct psychotherapy, (helping the client relinquish their own control), even if it does result in cures in some fashion.

The dramatic methods of the faith-healer, while they also can easily lead to taking advantage of the client, at least do not directly require an attitude of submission to an “operator.” Rather, they require a degree of faith in the treatment itself, the healer, and a higher healing power.

In both of these cases, the hypnotist or faith-healer and their client both become caught up in *the power of imagination under the influence of suggestion*.

The more quiet and less dramatic forms of hypnosis used in research and by many doctors and psychologists tend to result in less dramatic kinds of cures. However, they can help build the client's sense of control and their ability to help themselves. This is closer to the way we generally think of the goals of psychotherapy today.

The Fundamental Problem

It should be obvious at this point that there is a significant tradeoff occurring here. In an encyclopedic review of hypnosis research that he co-edited, psychologist and hypnosis expert Ronald Shor describes this as "The Fundamental Problem" of hypnosis research.⁴⁷ By this he means:

"... taking the 'magic' out of hypnosis debilitates the phenomena but taking the 'magic' too seriously deludes the investigator."

Many of the most interesting phenomena associated with suggestion require a strong positive catalyst, powerful expectancies and beliefs and a supportive social environment, to make them happen.

At the same time, failure to apply sufficiently disciplined skepticism while observing the phenomena leads to erroneous conclusions.

This is a particularly nasty problem in hypnosis research because of the very nature of suggestion. The tendency to conform to expectations not only from the verbal communications of the hypnotist, but also cues implicit in the hypnotic situation, and beliefs existing prior to hypnosis is quite remarkable. This tendency extends far beyond any ordinary conception of rational compliance.

A hypnotic subject has a unique compulsion to help validate what the hypnotist expects to happen and what the client expects to happen based on his interpretation of the situation. This is in fact an important part of the "essence" of hypnotic suggestion, not just a side-effect !

⁴⁷ Shor, Ronald E. (1979). "The Fundamental Problem in Hypnosis Research as Viewed from Historic Perspectives." In Fromm, Erika & Shor, Ronald E., *Hypnosis: Developments in Research and New Perspectives*, Aldine, pp. 15-41.

This causes the hypnotist and their client to become caught up in a whirlpool of self-validating expectations and unstated speculations.

Even the most objective and disciplined investigators have a natural human tendency to prefer certain of their own hypotheses. It is therefore very difficult for any investigator to avoid becoming caught up with their client in a web of self-deception and self-validation when effectively using hypnosis and suggestion.

When we make full use of the dramatic imagination of the client, we gain access to the most powerful psychological effects of suggestion, but we also tend to delude ourselves about what is happening. Although Ronald Shor observed this in 1979, it has since then become even more evident in the body of clinical literature based on hypnotic regressions.

Suggestion: Explicit and Implicit

The subtle influence of hypnosis can be thought of in two different ways. Hypnotic influence may involve either **requesting responses from people**, or **motivating internal change in their mind and body**. The complex nature of communication makes it difficult to distinguish these cases in some situations.

The main difference is in how explicit we are in making suggestions.

When we directly request a response, we are usually very specific and very explicit. In entertainment hypnosis, the suggestion is something like: “your arm is rising by itself,” or “you will forget the number four.” There are generally a number of less explicit factors, but there is also an explicit request, which allows the audience to see a connection between the hypnotist’s “commands” and the client’s behavior.

On the other hand, motivating internal change usually involves making an **implication** of what should be done, and letting the ‘hypnotized’ person choose for themselves how to bring it about. Implicit suggestion takes many forms, some of them (such as the often hidden “demand characteristics” of the situation) are almost incredibly subtle.

One difference is in how much leeway is allowed the person responding to use their own unique talents and strategies for acting out the suggestion. Another difference is the degree to which they (and an audience) are aware that they are being given the suggestion.

Hypnosis for Entertainment

Most stage hypnosis provides classic examples of **requesting responses**. This is not necessarily because requesting direct responses is always more effective, but because it allows an audience to see the connection with the hypnotist's wishes.

A volunteer is selected from the audience, they are "hypnotized," and they then follow all sorts of amusing directives that they presumably wouldn't ordinarily do if they weren't "hypnotized."

The trick is that they have been selected as the people most likely to have the special talent to cooperate with dramatic imaginative instructions. They often do this with a sincere sense of involuntariness, but not because they can be "controlled" by hypnosis.

There is a very real limit to the "control" of the hypnotist in this situation, but it can be a very convincing illusion. That's the secret to why stage hypnosis can be so entertaining. A cooperative subject in a stage hypnosis show will go to great lengths to act out an expected role, and will **sometimes even be convinced of its reality while it is happening**.

Hypnosis for Healing

Clinical hypnosis (in contrast to stage hypnosis) is usually more focused on **creating inner change** for the purpose of healing or making a positive impact on someone's life, rather than simply getting people to do things on demand.

Clinical hypnotists augment various forms of psychotherapy with certain specific principles that are associated with "hypnotism." In particular, psychotherapists who integrate hypnosis principles into their work have strategies for gaining cooperation without encountering the willful resistance usually seen when someone is simply asked to stop exhibiting a psychological symptom.

Some hypnotists refer to this as "**bypassing the critical faculty of the mind.**"

This is a basic idea behind most forms of psychotherapy, but the principles of hypnotic suggestion add certain things to therapy that can potentially make it faster or more efficient.

In particular, hypnosis training teaches a therapist how to establish a more effective therapeutic relationship by building a strong rapport. It also teaches the therapist how to enhance a client's confidence in the therapy and in the therapist. In addition, hypnosis training teaches a therapist how to make their specific suggestions more effective in general, by:

1. building upon our expectations about the power of hypnosis, and
2. making use of the fluctuations of the normal sleep-wake cycle (and other kinds of changes in attention) to enhance the effect of specific suggestions. This helps create the conviction that we are "hypnotized," helping us build and play out the role of a responsive, cooperative hypnotized person.

These principles make use of natural psychological processes that are probably not unique to hypnosis, but have not been studied as extensively outside of the arts of hypnosis and the science of hypnosis research.

These things are accomplished after hypnosis training by learning to notice different things and to recruit different psychological resources than most therapists would ordinarily use without hypnosis.

Hypnosis particularly makes use of **compelling and vivid imagination**, emphasizes the use of **relevant and motivational metaphor**, and enhances the effects of suggestion by making use of a **sense of involuntariness** or giving up control temporarily. None of this necessarily requires hypnosis training, but that is where these skills have traditionally been made most explicit and developed to the highest degree.

For historical reasons, the "hypnotic" elements of psychotherapy were separated out because they seemed "mysterious" and had negative connotations. This has changed in recent years, as clinicians have learned to re-integrate principles into their work that were formerly considered "hypnosis."

The Distinct Cultures of Hypnotists

The term *hypnotherapist* is often used to describe clinical hypnotists who are trained exclusively or primarily in hypnosis, rather than being psychologists or doctors who have integrated hypnosis into their practice.

There has long been a deep rift between many of the **clinical hypnotists with general psychology or medical degrees** and many of the

hypnotherapists *without* psychology or medical degrees
(somewhat derisively called “lay hypnotists” by some psychologists).

The rift arose because the psychologists long ignored some of the most effective principles of human change by rejecting hypnosis in all of its recognizable forms, and the “lay” hypnotherapists were operating outside of the regulated professional health care professions. There has been great resentment on both sides.

The distinction is extremely important to the practitioners, but doesn't really have much significance to study of the theory. Except that “lay hypnotists” tend to have less interest in the psychological theory and the research than either psychologist-clinicians or researcher-practitioners.

Even beyond the different ways of approaching hypnosis theory, the psychologists and doctors often mistrust the less formally educated “lay hypnotists.” Many non-psychologist hypnotherapists in turn tend to see psychologists as not understanding the “true art” of hypnotherapy and trying to take away their livelihood by restricting the practice of clinical hypnosis to clinical psychologists and doctors. This of course touches on similar issues as the “alternative medicine” trend.

Most “lay hypnotists” indeed are probably as much in the dark about current progress in science as most of the population, and so are often guilty of promoting scientifically inaccurate or misleading views of hypnosis. This is at least in part a result of the compartmentalism of the various sciences, as well as mistrust and resentment of “outsiders” to academic culture presenting their ideas directly to the public.

Even among social and behavioral scientists, it is rare to find people trained in more than one discipline. This situation yields the partly accurate impression that the various sciences have entirely different views of what hypnosis is and does, and the inaccurate view that none of the sciences has valid information about hypnosis. Later, we will see in some detail that there is an emerging conceptual integration among the social and behavioral sciences in some areas that may help to produce a more unified conceptual model of hypnosis and suggestion.

The Evolution of the Concept

The distinctive notion of “hypnotizing” someone as a form of influence has been studied by scientists in Western culture for over 200 years. Our ideas about hypnosis have changed so much over these 200 years that

some scholars have concluded that hypnosis is *nothing but an arbitrary cultural construction*.⁴⁸ In addition, some authors have also concluded that *it doesn't exist*, except as a name that we have given to certain products of human **imagination**.⁴⁹

Procedures or “trances” that resemble hypnosis or self-hypnosis in some way are as old as humankind, but have long been associated with religious or magical rituals, or demonic possession. One traditional way of interpreting this is to consider all of these ancient forms of healing as primitive superstitions.

These practices, found in virtually every culture, do contain strong elements of superstition which vary from one culture to the next. Like most things found across all cultures, they also seem to refer to a biological core. Just as each culture has its own rituals and conventions around eating and around reproduction, each has its own beliefs and practices around healing. These are all essential biological functions, though achieved in diverse ways.

The ancient arts of healing, many of which are rooted in alterations of human consciousness, provide us with an important legacy of how the mind and body heal themselves. Pieces of this legacy survive in modern physical medicine, but other important pieces have been relegated to “lesser” fields such as psychotherapy and hypnotherapy.

When early modern psychotherapy emerged from its roots in faith healing and the treatment of demonic possession, hypnosis was one of the ways of explaining how psychotherapy worked. “Hypnosis therapy,” or *hypnotherapy*, is in some ways the historical root of virtually all forms of psychotherapy used today.⁵⁰

Roots in Faith Healing and Exorcism

The history of medicine from antiquity to the present contains many reliable accounts showing the profound effects of emotional and spiritual factors in health. Anxiety and despair damage us; hope and confidence

⁴⁸Jaynes, J., (1977), “The Origin of Consciousness in the Breakdown of the Bicameral Mind.” Boston: Houghton Mifflin

⁴⁹ Baker, Robert A., (1990). “They Call It Hypnosis,” Prometheus Books.

⁵⁰ This idea of hypnosis being the root of modern psychotherapy requires more historical background than we can provide here. For those interested in the details, it is discussed at greater length in Edmonston, W. (1986). *The Induction of Hypnosis*, New York, Wiley. It is also discussed in a well known history of early psychotherapy, Ellenberger, E. (1970). *The Discovery of the Unconscious*. New York: Basic Books. See also the discussion in Zilboorg, G. & Henry, G. (1941). *A History of Medical Psychology*. New York: Norton.

are life-giving and life-affirming. The factors of myth, ritual, setting, and relationship have been utilized for millennia by magical and religious healers, long before we had a science of medicine, and they are still important today, even with a science of medicine.

The principles of hypnosis itself, (as well as much of psychotherapy in general), were rooted in the remarkable faith healers of the 17th and 18th centuries, such as Father Johann Joseph Gassner. These people produced spectacular cures of both psychological and physical symptoms through dramatic rituals often involving exorcising the demons believed at fault for the illness. Some modern historians consider exorcism to have been a well-structured early form of psychotherapy.⁵¹

Although today most of us would reject the explanation of such healing as exorcism, this form of healing shared many basic concepts with modern hypnotherapy. It utilized the belief system of the client, it made use of an initial request for obedience, it took over some degree of control of the client's emotional state, and it used suggestion for the resolution of symptoms both directly and by implication. It often involved confession, followed by atonement and reacceptance into a group. The sense of belonging then becomes a significant additional source of relief from anxiety and despair.

All forms of religious and magical healing are based on conceptual schemes that must be consistent with the assumptions and expectations of the patient. The scheme prescribes a set of activities which help the sufferer make sense of their feelings and their life history, heightening their sense of self-mastery and hope.

We are often tempted today in scientific cultures to think of magical and religious healing as limited to primitive tribal medicine. However, the *principles* of religious and magical healing (though not their explanations) turn out to be the same as those found effective in psychotherapy by scientific standards as well.

First Attempts to Study Hypnotic Influence in Science

During the 18th century, we find arts and sciences of medicine beginning to establish a presence in popular culture. There was not yet a specialty dealing with "mental illness." Problems of the mind were considered *neurological* (of the nerves) and were the province of general physicians

⁵¹ Schneck, Jerome M., (1960). "A History of Psychiatry," Charles C. Thomas, pp. 7.

of the time.⁵² Treatment of the mentally ill was brutal and often bizarre by modern standards, often involving restraint and torture.

By the 17th century, philosophers such as **Spinoza** and **Leibnitz** had broached the topic of unconscious mental functioning. But it was not until the 18th and 19th centuries that the concept of a “dynamic unconscious” was clearly formulated, as a collection of changing perceptions and representations in conflict with each other. Most notable in this regard was **Johann Friedrich Herbart** (1776-1841).

The first modern (though flawed) theory of hypnosis is usually attributed to 18th century physician **Franz Anton Mesmer** (1734-1815), after whom the term *mesmerism* was coined. Mesmer studied faith healing and realized that the results were sometimes real, but he wanted to try to explain them more scientifically. He had a deep interest in the electromagnetic influences of the planets, and he came to mistakenly believe that the cures worked by some form of electromagnetic influence.

Like Gassner and other healers before him, Mesmer produced a number of verifiable cures of serious and difficult psychological symptoms, and even some cures of physical illnesses with psychological components. Mesmer recognized that the cures resulted from (or at least following) a series of dramatic emotional crises and sometimes convulsions. This is often considered the first “modern” application of psychotherapy.

Theorists disagree on the significance of convulsions and emotional crises in healing.

Later theorists have disagreed about the significance of these crises for healing. Some have considered them incidental and mere artifacts resulting from the belief of Mesmer’s patients that they were supposed to experience such events. Some theorists have argued that such crises and convulsions reflect **a kind of neurological instability that actually aids psychological healing**.⁵³ Various forms of this view are accepted by a number of different schools of psychotherapy, and rejected by others. The issue has yet to be resolved scientifically.

The first “skeptical” theory of hypnosis is attributed to **Benjamin Franklin** and others on a committee assigned to investigate Mesmer’s work in 1784. The committee’s findings were that Mesmer’s dramatic healing work was legitimate, but was the result of the imagination of the patients rather than physical energies.⁵⁴

⁵² Zilboorg, G. & Henry, G.W. (1941). *A History of Medical Psychology*. New York, W.W. Norton.

⁵³ Rossi, E.L., (1996). *The Symptom Path to Enlightenment*. Pallisades Gateway Publishing, pp. 13.

⁵⁴ A transcript of this report can be read in English in *The Nature of Hypnosis: Selected Basic Readings*, 1965, edited by Ronald E. Shor and Martin T. Orne, from Holt Rinehart & Winston. The first few chapters contain the report as well as responses by Mesmer and his student Charles d’Eslon.

Not that the healing was imaginary, for surely some of Mesmer's patients were truly recovering. The important thing for the committee was that it wasn't the result of newly discovered physical forces. Today, we would say, "it's psychological." Only now, we have better means to study the details of this psychological healing.

The 1784 committee recognized that healing often occurred spontaneously, but felt that Mesmer's rituals influenced the process by taking advantage of the faith and hope of Mesmer's patients. These they considered crucial elements of human life. They concluded that:

"It is a well-known adage that in psychic as well as religion, men are saved by faith. This faith is a product of the imagination. In these cases the imagination acts as a gentle means, and it acts diffusing tranquillity over the senses, by restoring the harmony of the functions, by recalling into play, every principle of the frame under the general influence of hope. Hope is an essential constituent of human life; the man that yields us one contributes to restore to us the other."⁵⁵

This may well be the first "official" recognition by a scientific source of the significance of human inner life in health.

The "Sleep" Method of Hypnotic Influence Emerges

Faith-healing obviously was not new with Anton Mesmer, but with Mesmer and the investigations of his "animal magnetism," the concept of faith-healing came under scientific scrutiny for the first time.

The person usually credited with the discovery of the "sleep" version of mesmerism was Mesmer's student, *Armand Chastenet*, the *Marquis de Puysegur*, who in 1784 described it as "**artificial somnambulism.**" This version caught on much more widely than Mesmer's convulsive crises, and garnered much more of both scientific and popular interest.

What the *Marquis de Puysegur* discovered was that when people were not familiar with the convulsions and dramatic crises of Mesmer and did not expect them, they did not usually exhibit them during treatment. Mesmer had noticed this, but did not attribute any great significance to it since it didn't seem to have anything in particular to do with his cures.

⁵⁵ Quoted in: Tinterow, M. (1970). *The Foundations of Hypnosis*. Springfield, Ill.: C.C. Thomas. Pp. 125.

Some historians have also suggested that Mesmer and others hid the discovery of **artificial somnambulism** because it was uncomfortably reminiscent of sorcery.

Puysegur soon recognized that the healing crises were not always necessary in order to produce cures, and the significance of those crises soon faded in comparison to the remarkable properties of artificial somnambulism. Puysegur's mesmerized clients could open their eyes and walk around and also speak lucidly while responding to his requests and commands. They then often forgot their mesmerized experiences when aroused. This discovery so fascinated most of the mesmerists that they began experimenting with Puysegur's method almost exclusively.

The result of all of this experimentation with Puysegur's artificial somnambulism by mesmerists was that virtually all of the phenomena of **suggestibility** were discovered. Students of mesmerism discovered **motor automatisms, catalepsy, amnesia, anesthesia, hallucinations**, and even what we today might call "**posthypnotic suggestions**," as well as differences in suggestibility between people.

The modern domain of hypnosis had been born from mesmerism, which was in turn born of faith-healing. The aroused state of early mesmerism was very different from the state of relaxed "somnambulism," yet both seemed to produce similar results. Puysegur recognized even in those early days of mesmerism that the **belief in the cure**, the **desire for a cure**, and the nature of the **relationship between healer and patient** were crucial factors in the healing process.

Biological activity and rest cycles are believed by some theorists to underlie the different forms of hypnosis and creative problem solving.

One interesting modern theory holds that *low arousal* and *high arousal* are just different phases of the natural biological activity cycle, the transitions between them being important in the healing processes. Thus, "low phase" (relaxed) hypnosis and "high phase" (aroused) hypnosis can both be utilized as applications of the art of giving effective suggestions, each contributing its own unique characteristics.

This is sometimes compared to the way different stages of the creative process each contribute something, active conscious problem solving often preceding a period of more relaxed "incubation" leading to new insights.⁵⁶

The mood of 19th century Romanticism was very supportive of credulous excesses. The "trances" of the hypnotists came to be associated with all

⁵⁶ Rossi, E.L., (1996). *The Symptom Path to Enlightenment*. Pallisades Gateway Publishing, pp. 176-178.

manner of supernatural and paranormal phenomena that many people at the time, including many scientists, wanted very much to believe.

The nature of the “trance” was that the mesmerized somnambulist was **strongly motivated to produce the effects expected of them.** The investigators with wilder ideas and desire to believe in the paranormal would tend to produce results, while the skeptics were much less likely to inspire their imagination and expectancy, and therefore less likely to get results.

The result was a kind of natural selection in the direction of extravagant results among mesmerists, and unimpressive results among skeptics.

Every bizarre theory of the various mesmerists became a self-fulfilling prophecy, as each of them was able to validate their own theories, while other investigators could not reproduce the same results. Spiritualistic mediumship, medical diagnosis from “trance,” prophesy, and other paranormal events were commonly considered credible by leading philosophers and even scientists of the time.

The sheer number of different contradictory theories that arose finally undermined the plausibility of any one of them. Out of all the nonsensical theories that were proposed, there were certain remarkable observations common to all of them that preserved interest in hypnosis, and more conservative theories began eventually to emerge.

Some investigators insisted on “debunking” these phenomena, in their zeal to disprove the paranormal phenomena that had become closely associated with them. It took a long time (well into the 20th century) for the psychological study of suggestion and hypnosis to become widely accepted independently of the investigation of the paranormal.

The term **hypnotism** itself was coined for the concept of mesmeric somnambulistic healing by Scottish physician **James Braid** in his 1846 book, *Power of the Mind over the Body*. This was an important turning point in seeing the phenomena of mesmerism as legitimate and worthy of study.

By then, most students of the healing arts derived from the faith healers had adopted Puysegur’s artificial somnambulism as a way of giving beneficial suggestions. They were commonly asking people to relax, and enter a kind of “sleep.”

Gradually, the “sleep” method of hypnotism came to be most closely associated with the art. There were still healers (as well as entertainers) who used suggestion equally well with people who were alert and emotionally very aroused rather than relaxed and “sleepy.” The “sleepy”

version was probably more palatable because there was less apparent emotional trauma, and generally no convulsions.

Braid at first tried to explain hypnosis as a neurological response to fixing attention on a single monotonous stimulus, in his 1843 book, *Neurypnology*.

By 1847, Braid realized that his previous observations were just a special case of a more fundamental principle of **exclusively focused attention**, a *psychological* process rather than a *physiological* one. He called this **monoideism** (or single idea-ism).

With this change in name from mesmerism to hypnosis, many of the former associations with disreputable theories could be broken and credible investigation was again possible. Not long afterward, in 1878, the eminent neurologist **Jean Martin Charcot** proposed a neurological theory of hypnosis. Charcot was able to reproduce hysterical symptoms such as mutism, amnesias, and anesthetics under hypnosis, and even paralysis. This led him to the reasonable conclusion that hypnosis had something to do with hysteria, and that both involved unconscious ideas that become fixed in the mind. This was an important influence on later students of hypnosis such as Janet and Freud.

Unfortunately, Charcot's theory became best known for several fundamentally unsound aspects, making it a scientific-sounding version of mesmeric theory in many ways. Charcot falsely attributed the process to three neurological stages, and also incorrectly concluded, based on work by some of his students, that it was influenced by magnets.

Charcot became a victim of the same powerful phenomenon that engulfed the mesmerizers and so many researchers, **the force of mutual expectations**.

A patient with dramatic and distinctive responses under hypnosis sets expectations by the hypnotist, who then, without realizing it, passes his expectations on to other patients. The other patient then begins unwittingly validating the hypnotist's expectations about these unique new hypnotic effects. This process is so reliable, it has even been demonstrated experimentally under more controlled conditions.

But the acceptance of the phenomena by such a respected doctor helped make the study of hypnosis more reputable.

This was important because between 1848 and 1875, magnetic healing also became increasingly associated with mediumistic spiritualism, an association that still haunts many hypnotists today.

Bernheim and Therapeutic Suggestion

The monoideism of Braid was a significant step toward a scientific understanding of hypnosis. The next major step was taken by a little known country doctor named **Ambroise Auguste Liébeault** who settled in the town of Nancy in France in 1864.

Liébeault proposed a sophisticated psychological explanation of hypnosis in 1866, though it was ignored for 20 years. He explained that concentration of attention on the idea of sleep induces hypnosis through suggestion, and that all hypnotic phenomena are actually suggestive phenomena.

In the 1880s, the professor of medicine at Strasbourg, **Hippolyte Marie Bernheim**, championed the cause and popularized the concept of mental therapy based on verbal suggestion. This became known as the “Nancy school,” in honor of M. Liébeault’s practice which formed its basis.

The concept of hypnotism as a way of making effective therapeutic suggestions was thus consolidated by **Bernheim** in the late 19th century. Bernheim documented not only the induction procedures of hypnotherapy of his time, but also ten thousand clinical case histories. He saw **hypnotism** as a kind of quiet beneficial condition that helped restore the equilibrium of the nervous system. Bernheim recognized a fact that was later proven empirically by researchers, that hypnosis was not actually sleep, but could often involve a process of transitions between stages that resembled both sleep and waking.

Unlike Mesmer or Braid, Bernheim and Liébeault were primarily clinicians, not researchers, and so were more interested in therapeutic benefit than in a rigorous theory of hypnosis. Their writings are a collection of practical principles of suggestion that are still influential today, and still largely unanalyzed by science. In some ways, the Nancy school of therapeutic suggestion is still the clinical “state of the art” in hypnotherapy !

At the time of Liébeault and Bernheim, the “psychology” of the time held that ideas were atomic structures that held their own intrinsic energy in the mind. Suggestibility was seen as a state of mind where one idea dominated the others. Hypnosis was then seen as a state of mind where the idea of sleep dominated all other ideas, while keeping the hypnotist in mind, and thus staying in rapport with the hypnotist. The ability to analyze critically consisted of a swarm of ideas that would compete with the dominant idea at the time. Since the competing analytical ideas were

held at bay by the dominant idea, the subject would respond to suggestions of the hypnotist in an automatic way.

This early psychological theory held many deep insights, but also had some deficiencies. The relation to sleep was later discovered to be an artifact, and hypnotic induction does not have to resemble sleep or have anything at all to do with it. This was clearly noted by Braid, but the theories of the time failed to incorporate that finding.

The theory of suggestion of this time also overlooked the active, assertive, alert, and productive capacities of the hypnotized person. It emphasized the passive responding of the subject almost entirely. Most of all the early theory of suggestion failed to recognize or shed any light on the enthusiastic credence of the subject, or the effect of their expectations.

The original lessons learned from Mesmer had been forgotten. Mesmer had enlisted the rational belief of his patients, he didn't attempt to slip suggestions "past their critical faculties." He engaged their rational mind (as well as their emotions), he didn't try to circumvent it.

The surgeon John Elliotson who had noticed the effectiveness of hypnotic anesthesia also noticed that the tide of skepticism about hypnosis seemed to cause hypnotic anesthesia to become less effective in many people.⁵⁷

Elliotson was not simply deceived about his earlier observations, he correctly and courageously observed that the legitimate effect he previously observed was itself not an invariant physiological effect, but greatly influenced by **expectant belief** on the part of patients. The "trance" itself was not enough to produce the interesting psychological effects, the expectant beliefs of the patients were an important factor.

"Suggestion" is not passive response to words. It is an active process where **emotionally charged beliefs give expression to active core elements of the personality.**

The connotations of modern terms such as *faith healing*, *charismatic personality*, and *enthusiastic credence* are much more descriptive of the effects of therapeutic suggestion than the simple term "suggestion." The passive connotations of that term have been partly responsible even today for the lack of appreciation of its nature as **emotionally charged beliefs giving expression to core active aspects of the personality.**

⁵⁷ Elliotson's observation is quoted in Rosen, G. (1948). From mesmerism to hypnotism. *Ciba Symposium*, 9: 838-844.

The Origins of the Concept of Hypnotic “Depth”

“... the ordinality inherent in the responses of presumably hypnotized individuals to suggestions was as self-evident as the fact that people can be ranked on the basis of their height!”

Andre Weitzenhoffer, 1997

The notion that hypnosis can be observed to occur in degrees of depth has seemed self-evident to many investigators, as Weitzenhoffer remarks above. Even before Braid identified hypnotism as such, the “magnetic sleep” of the mesmerists was described in terms of different degrees.

Among the insights Bernheim gained from his collaboration with Liébeault was a detailed concept of “**depth**.” Liébeault and Bernheim recognized that people seemed to be in “different states” during hypnosis, during different sessions. They identified both a **light** and **deep** hypnotic sleep, each having gradations of level. This measured the degree to which the hypnotized person could be influenced by the words of the hypnotist and only by the words of the hypnotist. There also seemed to be some significantly different subjective experiences, particularly between waking or light hypnosis and deep hypnosis.

What they actually noticed was that several things seemed to happen together with increasing talent and increasing experience in being hypnotized.

The degree of **cooperation** varied with **selectivity** about responding only to the suggestions of the hypnotist. These both varied with the degree to which people **remembered less** of the session spontaneously. And all of these things varied with the capacity to exhibit **more dramatic control over sensory experience** (according to their own individual talents).

However, even at this early point, Bernheim emphasized that **depth** wasn’t simply a matter of exhibiting *more* suggestive phenomena. To one detailed discussion of the successive degrees of hypnotic depth, he added the comment:

“Each sleeper has, so to speak, his own individuality, his own special personality. I only wish to emphasize that the aptitude for realizing suggestive phenomena is not always proportional to the depth of sleep.”⁵⁸

In spite of these admonitions, the concept of depth still inspired the early promoters of the scientific study of hypnosis to construct **depth scales** as a way of measuring more objectively “how hypnotized” a person was at any given time.⁵⁹

Eventually, these scales were validated as providing a rough indicator of stable hypnotic talent. But their use in measuring **depth** has always been controversial because of the extreme individuality even “highly hypnotizable” people exhibit in responding to suggestions. Leading researcher Ernest Hilgard, for example, said that:

“Our work with the profile scales show that among even quite susceptible subjects there are great differences in their profiles of susceptibility, some with quite specific gaps in an otherwise uniformly high level of hypnotizability.”⁶⁰

Hypnotic “depth” means becoming more absorbed in a specific fantasy line, more actively cooperative with suggestions, and less dependent on external reality to orient ourselves.

The trends shown by the scales are of great theoretical interest, even if the details are questionable in measuring specific degrees of depth. What the general trends show us is that several things happen at once with increasing involvement in hypnosis.

We not only become more **actively cooperative** with the hypnotist, and **more selectively responsive** to their suggestions, but at the same time **we remember less of the session spontaneously**. We also become more internally focused, and less reliant on our external senses to orient ourselves to reality.

Paradoxically, then, at extreme depth, sometimes called a somnambulistic state, we become so internally focused that even the hypnotist is excluded, a condition resembling a nocturnal dreaming state.

“Depth” and Involvement in Fantasy

Why is this important ? It shows that hypnotic **depth** is measuring not how much “asleep” we are, but our relative conviction that we are

⁵⁸ Bernheim, H.M. (1886). *Suggestive Therapeutics: A Treatise on the Nature and Uses of Hypnotism*. Westport: Associated Booksellers. (republished 1957).

⁵⁹ Davis, L. & Husband, R. (1931). A study of hypnotic susceptibility in relation to personality traits. *Journal of Abnormal and Social Psychology*, 26: 175-182.

⁶⁰ Hilgard, Ernest R. (1965). *Hypnotic Susceptibility*. Harcourt Brace Jovanovich, Inc., pp. 388-389.

hypnotized and our relative psychological commitment to respond to the hypnotist.

At the same time, it shows an increasing capacity to act out fantasy and to ignore external demands that conflict with suggested experience.

Putting these two trends together, we see that being “more deeply” hypnotized seems to really be about temporarily **relinquishing our dependence on reality and entering into a particular fantasy as if it were real, while allowing someone else’s voice and expectations to be our guide.**

At greatest “depths,” hypnosis becomes more like a nocturnal dream.

With the most extreme degrees of depth, which are very rare, we have such a complete withdrawal from external reality and separation of hypnotic and waking memory that even the hypnotist is shut out. The client remembers little or nothing of the session, and the session becomes in many ways indistinguishable from a nocturnal dream.

The spontaneous amnesia (which can be altered by suggestion) seems to tell us that this fantasy involvement is effectively a separate mode of cognition, like nocturnal dreaming, even though we are not actually asleep at the time. Thus, while we know that hypnosis is not physiologically a form of sleep, it is also likely that *hypnosis, particularly **deep hypnosis**, taps into some of the same brain mechanisms as we find in dreaming.*

Bernheim once remarked that “there is no such thing as hypnotism,” explaining that it was all a matter of suggestion, not a special state of consciousness. This view foreshadowed the later “skeptical” theories of hypnosis which also emphasized how people enter into cooperative arrangements rather than how hypnotism creates any unique state of responsiveness.

The skeptics are mostly right: hypnosis is a matter of natural psychological processes, not an exotic state of consciousness.

We have since discovered that the cynical views actually have a lot of truth to them. Hypnosis is not so much a matter of using esoteric or mysterious forces, but a matter of using natural psychological processes of our imagination in a particular way.

More importantly, however, the most cynical views also conceal some new information about the human mind that hypnosis potentially reveals to us. We will uncover this information in the pages to follow. The fact that we can find such powerful ways to use human imagination, to make use of the powerful human elements of faith and hope, is evidence that the scientific study and clinical use of hypnosis both hold great value.

When people discover that we are talking about the imagination, they often wrongly assume that there can't be any value in it, that the concepts of hypnosis and suggestion are themselves imaginary.

Nothing could be further from the truth; our *imagination* holds the key to many of the mysteries of the mind and body studied in psychology, as well as clues to how the body heals itself.

The skepticism about there being anything truly special about hypnosis has been surrounding it since its earliest uses. Although we can certainly identify a specific domain of psychological phenomena, call it hypnosis, and study it⁶¹, does it really merit a special name other than "imagination," or "fantasy?"

Put another way, is the unique *sense of involuntariness* in hypnosis really enough to make it a useful subject of study? Mainly, the scientific study of hypnosis shows us that we have long underestimated human imagination as a factor in adaptation and positive change.

Hypnotherapy is more than Laboratory Hypnosis

The modern scientific view of hypnosis research is based upon a great deal of excellent and useful laboratory research. This research is in turn based mostly upon observations of college students and normal populations given standardized "induction" speeches and tested according to standardized suggestibility scales.

In a sense, scientists have emerged from the nebulous world of the faith healers and effectively created their own **credible research domain of suggestion phenomena**. They have also **validated it in the laboratory**. Yet not only have we failed to understand much of the specific psychological processes underlying suggestion^{62, 63, 64}, but we have done all of this largely independently of the way psychotherapy is actually done !

⁶¹ Hilgard, E.R., (1991), "A Neodissociation Interpretation of Hypnosis," in Lynn and Rhue (eds.), *Theories of Hypnosis*, N.Y.: Guilford Press, pp. 83-104.

⁶² Naish, P. (1986). "*What is Hypnosis ? Current Theories and Research.*" Open University Press, Milton Keynes: Philadelphia. Pp. 165-166.

⁶³ Balthazard, C. & Woody, E. (1985). "The 'stuff' of hypnotic performance: A review of psychometric approaches." *Psychological Bulletin*, 98(2), 283-296.

⁶⁴ Balthazard, C. & Woody, E. (1992). "The spectral analysis of hypnotic performance with respect to 'absorption'." *International Journal of Clinical and Experimental Hypnosis*, 40(1), 21-43.

Psychotherapy Independent of Laboratory Hypnosis

The psychological state of a person is reflected in their verbal reports. This involves a story they tell regarding their symptoms, the origins of their symptoms, and the effect of their symptoms on their life.

There is an important difference between the story a patient tells a healer and a scientific explanation for their illness. The story a patient tells generally involves human beings as active agents. We have the intuitive sense that people have intentions and motivations behind their actions.

In terms of cognitive psychotherapy, the internal world we create contains **expectations, assumptions, rules, and schemata**, and some of these are outside of our awareness. That is, human agency extends beyond the conscious awareness of the agent.

Hysterical symptoms and other forms of “psychosomatic” illness are very difficult to explain without some version of psychodynamic theory of unconscious motives or intentions to give them some context. It is often the **meaning** of a situation to an individual, rather than its objective characteristics, that determines what psychological symptoms (if any) will arise.

People are often unaware of the meanings which act on them to maintain psychological symptoms. One of the things done in psychological healing is to attempt to challenge the assumptions underlying those meanings, to **transform the meanings by altering the stories that patients are telling about themselves.**

The dominant view of psychological healing in medicine comes from behavioral science. Objective scientific methods and statistics have helped us form insurance reimbursement policies, helped us to understand the effects of psychoactive drugs, and helped us understand certain aspects of psychotherapy.

On the other hand, the methods of behavioral science deal poorly with matters of personal meaning. Yet it is through the transformation of meanings in the individual that much of psychological healing takes place. **Therapy based on hypnosis makes powerful use of fantasy, emotion, suggestion, and an intimate healing relationship to help transform the meaning of symptoms.** How can hypnosis help make these kinds of changes ?

The Paris school emphasized passivity, while the Nancy school stressed arousal.

We can trace the different scientific views of hypnosis back to the two French schools of the late 19th century: the *Paris school* of Jean-Martin **Charcot** (and later Pierre **Janet**), and the *Nancy school* of **Bernheim**. Charcot believed that hypnosis involved a naturally occurring period of extreme passivity that made people vulnerable to hysterical neuroses.

Bernheim had the opposite view that hypnosis was a highly aroused state where the body responded to suggestions more quickly and completely. In fact, the Nancy School eventually gave up on hypnotic inductions entirely, to focus on waking suggestion, which they called “*Psychotherapeutics*.”

It was the legacy of history that the founder of *psychoanalysis*, **Sigmund Freud**, was to study the work of both **Janet** and **Bernheim**. Freud learned their findings that there were periods when people are more vulnerable to emotional trauma as well as to healing suggestions. Freud found the mechanisms of *hypnosis* too obscure to consider *hypnosis* an adequate explanation for what was going on in therapy. Hypnosis, as he understood and practiced it, also created complications in the therapeutic relationship. It suppressed symptoms without removing them permanently, and it too readily led to responses based on what the patient perceived the hypnotist expected.

Freud was so impressed by his observations at the clinic of Bernheim and Liébeault, however, that it changed the direction of his life’s work. He noticed that **suggestions given during hypnosis were sometimes not remembered after hypnosis, yet were carried out anyway**. This to Freud was dramatic proof of an unconscious mind at work that could be charted.

The influential views of Charcot and Janet led Freud to believe that hypnosis involved an exotic induced state of consciousness with special properties rather than a natural part of biological activity and rest cycles. As a result, he rejected it (or believed he was rejecting it) in favor of *free association*.

The irony is that *free association* turns out to be essentially a form of interpretive non-directive hypnotherapy. Or at least, it apparently makes use of the same underlying psychological processes, the natural human problem solving and healing processes.

Freud did not give commands to his *free associating* patients, he had them lie down and say whatever came to mind. The result was that he utilized both the “low phase” and the “high phase” of natural activity

cycles. For periods, patients would relinquish conscious attention on their thoughts and external perceptions, becoming more absorbed in fantasy, just as they would under formally induced hypnosis. Without realizing it, Freud was encountering some of the same problems that led him to reject hypnosis, but in a more subdued form. This led him to a number of erroneous conclusions.

The difference, which at the time was considered all-important, was that Freud was not explicitly or knowingly “inducing an altered state,” nor use it to “suggest away” symptoms. Rather, he was helping the patient’s own healing processes to resolve their psychological traumas.

Freud’s student, Carl **Jung**, found even Freud’s form of *free association* unsatisfactory, because it often led down fantasy paths that distracted the patient from their therapy. The emphasis on gaining *insight* into unconscious processes by analyzing dreams and associations led to many false notions. One of the main things avoided in the later revolutionary hypnotherapy of practitioners such as **Milton Erickson** was the attempt at gaining psychoanalytic *insight*.

The distraction created by fantasy narratives in free association was similar to one of the problems Freud had with hypnosis initially. Jung instead experimented with a method called *active imagination*. Active imagination involved vivid imagery and inner dialogue, and was used by patients on their own, rather than in an office with a therapist.

Many later forms of therapy, such as the *Gestalt therapy* of Fritz **Perls**, were based largely on Jung’s method of active imagination, but having clients enter into dramatic fantasy dialogues.

The general trend taken by Freud, Jung, and Perls is worth noting. The trend is from a “hypnotic trance” to more active and social forms of therapeutic communication. In each case, a ritual is used to help create expectations that shift the locus of control from the therapist to the natural problem solving abilities of the client.

All of these kinds of therapies are rooted in “hypnosis” in some way, because they all make use of **a mode of cognition which helps clients become more absorbed in vivid fantasy**, while setting the **expectation that we can access inner resources for healing.**

The arts of “bypassing the critical faculty” emphasized by some at the time of Bernheim was preserved by a few hypnotists, but they were largely in the background of psychotherapy innovation. Most clinicians from Freud to the present have recognized what even Mesmer

Common to all therapies rooted in “hypnosis” are (1) absorption in fantasy, and (2) the expectation that we can access inner resources for healing.

understood, the value of aligning with the motivations of the client rather than trying to “sneak” suggestions past their awareness.

It is in the effective methods for **setting client expectations for improvement and facilitating absorption in therapeutic fantasy** that we discover the power of hypnosis. Hence, all of the various methods that use these factors are using “hypnosis” in some form.

The legacy of the exorcists and faith healers was hypnosis. Hypnosis has in turn helped us understand the role of **fantasy** and **expectancy** in human health and in organizing human behavior. The thing that is unique about hypnosis, compared to cognitive therapy, behavioral therapy, and other methods derived from scientific psychology, is that hypnosis makes **more extensive use of the client’s own elaborate mental processes.** It does this by capitalizing on a **special cooperative connection that exists between the hypnotist and the client,** and also on their ability to **operate in fantasy independently of their usual ways of thinking.**

The arts of hypnosis recognize exquisitely that the *processes occurring in the mind of the client are of far greater importance than what the therapist is saying or doing.*

The emphasis in hypnotic methods is on the subjective experience of the client, rather than on objective reality, which is a direct result of making full use of the inner resources of the client in fantasy. By using these subjective and fantasy resources without trying to interpret them, as the psychoanalysts do, we can use hypnosis in therapy in a more scientific way.

While the arts of psychotherapy were evolving, scientific psychology was also coming of age, and trying to apply its own insights to the human mind. Scientists did study hypnosis, but found it puzzling and had to come up with their own definitions for the phenomena that began to diverge from what therapists were doing with real clients.

The *researchers* emphasized objective measurement of the effects of suggestion, while the *hypnotists* themselves emphasized fantasy processes in the client. The result was two fairly different perspectives on hypnosis.

So does hypnosis really exist ? Of course it does, but it isn’t very much like the popular media image. It’s a form of influence derived historically from exorcism and faith healing, and having much in common with the

various traditions of psychotherapy. The capacity for imagination and fantasy really exists, and so do procedures like hypnosis that make use of its qualities as a subtle form of influence.

Summary of Chapter 4

The concept of hypnosis had its origins in the idea of using our imagination more effectively for healing. It has ancient and cross-cultural roots. In the West, it was preserved within religion and learned at the feet of eighteenth and nineteenth century healers, who learned it from faith healers. At the same time, hypnosis has always been about altering our state of consciousness in order to change our sense of self-control. These two ideas are closely linked because our sense of control has a lot to do with the psychological conditions for healing.

Our attention varies significantly over time, seemingly varying with our sleep-wake activity cycles, and shifting modes of cognition. Much of what we call **hypnosis** involves taking advantage of shifts in attention and cognitive mode (as well as expectations about hypnosis itself !) to **help create the psychological conditions for greater cooperation and more vivid and realistic fantasy**.

The classic **suggestibility tests** used in hypnosis research are more closely measuring *our involuntary response to imaginative suggestion* than whether we are “hypnotized.” These tests can play a role in psychotherapy, but the role is tiny in relation to all the psychological factors involved in healing. They are isolated for research in order to show that there is something special about the psychological conditions under which hypnosis is practiced.

Using the suggestibility tests to show that a person is “not highly hypnotizable” is meaningful to the researcher, but the significance to psychotherapy is questionable. Although psychotherapy might be said to have its origins in hypnotic techniques, the psychotherapist necessarily has a much broader view of psychological healing than the domain of imaginative suggestion effects in hypnosis.

Since hypnotherapists are psychotherapists who base their practice on the principles of hypnosis, they are likely to see hypnosis in broader terms than the researchers, often to the point of using hypnosis as a synonym for psychotherapy. Along with political and historical differences and concerns, this conceptual difference often leads to distinctly different views of hypnosis between practicing hypnotherapists and hypnosis researchers. We need to be careful of this when discussing what hypnosis is or is not.

Throughout history, people who took on the role of healers have made use of traditional arts based on magic and faith-healing. Although these arts are obviously filled with what we would consider superstition, they also are remarkably effective at relieving distress and sometimes even facilitating physical healing.

We understand this today in terms of the way the mind mobilizes all of the body systems in service of our intentions and expectations. The same mechanisms that allow us to alter our own experience in hypnosis also allow suggestion to influence our state of health or disease. Since our state of health or disease is partly maintained by psychological factors, it can also be altered by psychological factors.

Hypnosis has been passed down as a Western cultural legacy of the ancient arts of psychological and spiritual healing.

The Story So Far ...

The many traditions of spiritual and psychological healing all have a common core in what we call **suggestion**. They use social context and belief to create the psychological conditions conducive for healing, by **manipulating expectancy**. As we have seen, this is the same mechanism that allows us to alter our own experience in response to hypnotic suggestions. Through the regulatory functions of the brain, suggestion is capable of helping us mobilize both the psychological and physiological resources of our mind and body for healing, just as it can be a factor in disease.

Chapter 5

Suggestion

Identifying “Hypnotic” Responses

What is Suggestion ?

The most striking thing about a hypnotized person is their “suggestibility,” so it seems fairly natural that observers would first come to see hypnosis primarily as enhanced suggestibility. Historically, such careful observers as Andre Weitzenhoffer, Hippolyte Bernheim, and Clark Hull all saw this as the most important aspect of hypnosis.

Some, as early as Bernheim in 1886, even suggested that hypnosis *does not exist*, and that all hypnotic phenomena are manifestations of **suggestion**.

One of the ideas behind the early theorists defining such a thing as hypnosis was to show that a trained operator could temporarily change the *suggestibility* of subjects under various conditions. That is, the reason for having an interest in such procedures as hypnosis is generally the idea that we can gain special influence on the mind and body of an individual through *suggestion*, especially following and *induction procedure*.

We now know that hypnotic procedures do not *necessarily* by themselves always greatly enhance responsiveness to suggestions, even for the classical depth tests.⁶⁵ There is usually an increase in suggestibility, especially for “highs,” but the change is sometimes quite modest. We also know that the hypnotized person remains in control, and does not

⁶⁵Spanos, Nicholas P., 1986, Hypnotic behavior: A social psychological interpretation of amnesia, analgesia and “trance logic.” *Behavioral and Brain Sciences*, 9:449-502.

entirely turn over control of their behavior to the hypnotist (although they may appear passive).

To the extent that we think of hypnotic suggestion as a form of persuasion, it is roughly equivalent to other indirect forms of social influence (indirect here meaning other than direct appeals to conscious reasoning). Far from being the ultimate in mind control, formal hypnosis is actually less reliable as a persuasive tool than fiery orators or well-crafted commercial advertisements.

As far as being an easy and reliable technique for controlling people's minds, hypnosis, as many skeptics will correctly tell you, does not exist.

As far as being a special state of consciousness, hypnosis exists so far only ambiguously. It turns out to be a bit of a problem to define what a "special state" is in precise scientific terms, when the phenomena in question are largely a matter of subjective experience.

As far as being a kind of concentration and a sensitivity to communication, hypnosis **does exist as a therapeutic art**. Calling it suggestion, however, can sometimes be misleading since the use of the term suggestion in hypnosis is *very different from the common use of the term*.

So what do we mean when we say "the power of suggestion?" And is that the same power as a "hypnotic suggestion?" What makes this use of words different from other ways of using words, and gives it additional power? We have defined suggestion as **response to expectancy**, but what does that really mean? And more importantly, how does suggestion alter expectancy to produce its effects?

A Special Kind of Communication

"The Power of Suggestion" is based upon the special relationship that language and expectation have with the kind of mind that has evolved in human beings. As such a force, hypnosis shares much with art forms such as poetry and music.

Words themselves do not "cause" hypnosis or suggestion, they are only language symbols. The primary function of words is to stimulate the nervous system to recall past experiences. Words have tremendous power, especially when used effectively with human biological rhythms, to evoke imagery and stir our emotions, by helping us relive our past experiences. People have many common experiences. This is why art forms like hypnosis, acting, and poetry have some standard structures

and methods, as well as methods that are tailored to the individual listener.

All of these forms of influence use rhythm, sound patterns, and imagery to evoke sensations and emotions, and lend power to ideas. Music is the most highly developed use of rhythm and sound patterns to evoke our feelings, and poetry is the most intense and concise use of words for the same purpose. Hypnosis is the art of capturing the attention and, like poetry, evoking sensations and emotions, but (unlike poetry) also of **inspiring specific action in response**.

What could be more essentially **hypnotic** than our timeless rituals where:

"... the first words are magical charms and talismans to ward off the evils of a hostile universe and assuage the helplessness of primitive man trying to live his life on a strange planet."⁶⁶

In one of our greatest works of literature, the Bible, and indeed nearly all stories of Creation across cultures:

"... there is the same magical incantatory use of words that are inextricably linked to the mysterious bloodstream rhythms of the earth."⁶⁷

In his attempt to describe how the language of poetry stirs the human heart, poet and scholar William Packard points out that:

"As civilization gradually evolved, language continued to maintain its mysterious relationship with the pure intuitive rhythms of the earth... Some believed there was a secret synchronicity between the poetry of words and the hidden mainsprings of the human mind."⁶⁸

Rhythm, sound patterns, and imagery tap into something very fundamental to the way the mind works.

It may at first seem somewhat artificial to compare hypnotic suggestion with poetry. But realize that poetry is a primal form of language for influencing our experience through words. In the literature of every

⁶⁶ Packard, William (1992). *The Art of Poetry Writing*. St. Martins Press., pp. xi

⁶⁷ Ibid, pp. xii

⁶⁸ Ibid, pp. xiii

country, poetry comes before prose. Poetry is, according to playwright William Congreve, "the eldest sister of all arts, and parent to most." And the poet John Frederick Nims said it most elegantly, "poetry is the way it is because we are the way we are."

Skillfully used rhythm, sound patterns, and imagery tap into something very fundamental to the way the human mind is 'designed' to communicate. Just as a poem makes particularly powerful use these effects to stir us, so hypnosis makes powerful use of them to inspire us to cooperative response.

Learning Through Rhythm

How *do* we think of our own brains ? The technology of our age gives us a distinct prejudice to think of ourselves as computers. The computer metaphor captures some aspects of our mental life, especially the ability to describe and execute clear plans held in mind. It falters when we try to describe other aspects of human life.

Although the sequence of actions in a plan are easy to represent in a computer-like way, **beliefs, intentions, and meaning** are awkward or even impossible.

One way of improving the computer metaphor has been **evolutionary psychology**, which makes reasonable guesses about the real functional architecture of the brain based on evolutionary theory. The problem for us here is that evolutionary psychology is still in its infancy and does not yet yield any great insights about what is going on in situations of hypnotic influence.

When we examine the brain closely, we see that in the process of generating human experience, the brain relies on **myriad complex rhythms of precisely timed events**. As much as a computer, the brain is really a *magnificent symphony of activity*!⁶⁹ It is this surprising musical, rhythmic aspect of the brain that gives us many of the insights we need to understand hypnosis and other subtle forms of human influence. The fundamental rhythmic nature of the brain helps us tie together such diverse aspects of human life as intimacy, love, influence, language, and imagination.

⁶⁹ With deep appreciation to neuroscientist William Calvin for shaping this metaphor and helping to express it in accessible terms founded in modern neuroscience. See Calvin, W.H., (1990). *The Cerebral Symphony: Seashore Reflections on the Structure of Consciousness*. New York: Bantam.

The rhythmic aspects of communication (known as **prosody**) are fundamental to spoken language. Our widespread use of written language today gives us a distorted view of the conditions of human evolutionary development. Through most of our history, we communicated primarily face to face, and rhythm played an important role in understanding each other. **The complex rhythmic multimodal nature of human face to face communication is what makes hypnotic influence possible.**

While still in the womb, we begin learning the rhythmic aspects of language. Newborns have been shown to prefer their mothers' voice, and to prefer stories read by their mothers while they were in the womb to unfamiliar stories. This demonstrates that they recognize familiar voice pitch, and the stress and intonation qualities of a particular language and speaker from the earliest times of their lives.⁷⁰ Even before we learn the meanings of individual words or phrases, we learn to recognize the general perceptual characteristics of sounds specific to our native language, having particular rhythmic qualities.

This is not a simple sensory memory of the sound patterns of language. It is a complex mapping in the brain where our perception of sounds is actually altered to create a customized recognition network for our native language. The brain is exquisitely tuned to recognize fine differences in the rhythms of speech and adapt to them at an early age.⁷¹

This is sometimes known as the **perceptual magnet effect**, and is believed to be an important mechanism helping us to reduce the effects of variability in speech patterns between different speakers. Many animals, including humans, perceive sounds in terms of distinct categories rather than a continuous range of stimuli. The perceptual magnet effect is above and beyond the normal perceptual categorization that many animals use. For example, it is not found in monkeys.

This is important to our understanding of language because monkeys also make very different use of vocalization. A monkey vocal sound is a complete message, it is not combined in novel ways to generate new messages, and it does not contain a *grammar*.

Monkey communication instead seems to utilize a combination of calls and hand gestures. The area of the brain corresponding to the human speech center (Broca's area) seem to be used in other primates to help

⁷⁰ DeCasper, AJ, & Spence, MJ, (1986). "Prenatal maternal speech influences newborns' perception of speech sounds." *Infant Behavioral Development*, 9:133-150.

⁷¹ Kuhl, PK & Meltzoff, AN, (1997). "Evolution, nativism, and learning in the development of language and speech." In *The Inheritance and Innateness of Grammars*, ed. M. Gopnik, pp. 7-44. New York: Oxford University Press.

them mirror each others' gestures. This may reflect an evolved mechanism for cooperating in sharing food, but it may also be the origin of the speech abilities in human beings. This would link the motor programming aspects of this region with that of mental representation of another person.

In the environment of the earliest hominids, gestural communication of the sort used by monkeys would have been particularly effective. It was silent, protecting us better from predators. It was also spatial, allowing us to efficiently point out the important location of things to each other, not unlike the dance done by honeybees.

The "body language" of our ancestors probably evolved a grammar of its own for more sophisticated communication. Grammatical elements can be observed today in our gestures in the way they are interwoven with our speech patterns. Even congenitally blind speakers use gestures when speaking to each other, showing the legacy of our gestural mode of communication.⁷²

Gestural "language" in humans is unlike spoken language, but it can still be very sophisticated, more than just a simple collection of signs. Human beings can and do develop elaborate generative grammars in gestures under certain conditions, and deaf people even use many of the same parts of the brain for signing as hearing people use for spoken language. They use their right hemisphere more heavily, however, showing the stronger spatial element to their communication.

It is possible that vocalization emerged as our dominant form of communication in order to free up our hands for other purposes. But gestures and speech have never been entirely decoupled. Gestures and "body language" are not haphazard, they convey information in a systematic way, *complementing* our use of verbal language. Language and gesture are planned and executed together as part of the same neural systems.

Communication involves an abstract, **syntactic** component and an **iconic**, or spatial component.

Syntax is a way of specifying rules for strings of arbitrary symbols to be used to convey meaning. **Syntax** emphasizes the generative nature of communication, generating a large or infinite number of novel patterns by combining a finite number of symbols.

⁷² McNeill, D. (1992). *Hand and Mind: What Gestures Reveal about Thought*. Chicago, Ill.: Chicago University Press.

Icons are a different form of communication, instead representing the actual shapes and of objects and their disposition in space. Some things are more efficiently expressed through syntax, and some things through icons.

In the scenario where both verbal and nonverbal motor behavior can share the burden of communication, it makes sense for the grammatical component to be conveyed verbally by syntax through words. It also makes sense for the body to convey the iconic (spatial) part of the message.

This seems to be how our face to face communication abilities evolved, our body does the iconic part and our voice does the syntactic part. Although our hand gestures could have evolved to express both parts, using our voice frees our hands to demonstrate while we are communicating meaning verbally. This was probably an important form of teaching and learning in our early environment.

At the relatively late point in our evolution where we developed speech, we had come to use precise programming of motor sequences to convey meaning, evolving specialized sequencing abilities in the left cerebral hemisphere. Speech requires extremely accurate timing in generating and interpreting intricate, detailed sequences of sounds, and this probably required us to develop a specialized capacity in one hemisphere. Using both hemispheres would make interpreting these detailed sequences much more difficult because it would require additional synchronization.⁷³

The right hemisphere seems to have developed the complementary capacity to follow spatial patterns and rhythms rather than detailed sequences. By specializing iconic communication in the right hemisphere and syntactic communication in the left, we evolved the ability to communicate both at once to send and receive complex patterns of meaning.

We also evolved the capacity to attend the details and the rhythms of communication separately, which is important to our understanding of hypnotic influence.

⁷³ Corballis, Michael C., (1999). "The Gestural Origins of Language," *American Scientist*, Vol. 87, pp. 138-145. (March-April).

Many observations have shown us that social interaction plays a crucial role in learning, not only learning about social interaction but also learning things as fundamental as language.⁷⁴

While we are engaged with other people, we are aroused and attentive, allowing us to react to each other and learn socially significant stimuli. These mechanisms appear to help us remember and even to change the perceptual mappings in the brain, at least in infants. Our attention and learning mechanisms are strongly linked to social interaction, which is in turn dependent on generating and interpreting complex rhythmic sensory patterns to and from each other.

Social learning of language appears to be distinct from other forms of learning, in that it does not require external reinforcement, and occurs much more rapidly. This kind of remarkable link between social behavior, language, and brain function may provide very valuable clues as to the neural mechanisms underlying the maintenance and loss of brain plasticity,⁷⁵ and appears to be central to understanding the special use of language in hypnotic influence.

Ideodynamic Processes and Induction

The concept of **suggestion** as used in hypnosis differs from the common usage of the term (“I suggest that ...”) in several ways:

1. It implies that we don't realize that we are cooperating in order to produce the suggestion. There is often a distinctive sense of involuntariness.
2. It sometimes implies responding to fantasized scenarios or roles as if they were real, including many autonomic responses.

Hypnotic suggestion sometimes appears to act independently of the individual's current volition and awareness. It appears to involve a unique relationship between the subject's *perception of volition* and their overt behaviors.

⁷⁴ Locke JL & Snow C. (1997). “Social Influences on vocal learning in human and nonhuman primates.” In Snowdon CT & Hausberger M (eds), *Social Influences on Vocal Development*, Cambridge University Press, pp. 274-292.

⁷⁵ This is discussed in more detail by comparing human speech with birdsong, showing the similarities in how sensory experience is internalized and how learning is enhanced during social exposure to vocalization. Doupe, Allison J. & Kuhl, Patricia K., (1999). “Birdsong and Human Speech: Common Themes and Mechanisms,” *Annual Review of Neuroscience*, 22:567-631.

Under hypnosis, our sense of self-awareness changes, and we do not require direct conscious awareness to direct our actions. In this sense, **placebo responding** could be considered a form of suggestion, as well as other situations where someone plants a conceptual seed which takes root in our mind, without us being aware that a suggestion was planted. *There is in some sense information processing occurring which is dissociated from our conscious awareness.*

Vividly fantasized imagery does *not always* accompany hypnotic suggestion, but effective hypnosis is often associated with involvement in suggested fantasy roles. Neither is vivid imagery *uniquely* facilitated by hypnosis, although the hypnotized person treats it as if it were real in some ways. Thus **imagery is important but not fundamental to suggestion**. The relationship between imagery and suggestion turns out to be somewhat difficult to discern.

We often fantasize with great realism under hypnosis. The true relationship between hypnotic suggestibility and vivid imagery itself is not yet entirely known, and is still a subject of research. It appears to be more expecting an outcome and involvement in a suggested role that are crucial, rather than just compellingly vivid sensory imagery that is crucial to hypnotic responses.

That is, we don't just believe what is suggested because it *seems so real*, but also because we **want it to seem real** (in order to play out our role and meet expectations). So we create the psychological conditions that make it seem real. This includes generating spontaneous imagery.

Some autonomic processes, such as immune system and circulatory responses seem to have a special relationship with hypnotic suggestion not found in other forms of relaxation or guided imagery. Hypnotized people show **measurable changes in their physiology as the result of suggestion** that is distinctly different from the way they normally respond, and also distinctly different from the generalized placebo effect.

The specific kind of motivation to cooperate in hypnosis extends beyond our imagination to our body functions as well. We not only mentally play the suggested role, but various of our body functions also play along.

This provides **two potentially different concepts of suggestion, one that *the body responds to the semantic content of a verbal suggestion*, and the other that *the body responds to vividly fantasized imagery*.**

That is, we may be responding to the **words** used, or we may be responding to the **imagery** invoked by the words. Both of these seem to

apply to hypnotic suggestion, depending on the test conditions and the individual. Separating out the imagery from the words used to invoke them is possible, but very tricky.

The role of *goal-directed fantasies* in suggestion is sometimes considered an epiphenomenon, something that occurs with hypnotic suggestion (either spontaneously or as an implied part of the suggestion) but is not an essential aspect of hypnotic suggestion.

Indeed, suggestions for motor activity have been found to sometimes be effective in spite of contradictory goal-directed fantasies.⁷⁶ Hypnotic responding is clearly **not** just a matter of responding to vivid images as if they were real. Experimenters have failed to find any consistent relationship between goal-directed fantasy images and positive reaction to hypnotic test suggestions.⁷⁷

Remarkably, the reverse seems to be true. Removing implied goal-directed fantasies from a hypnosis training program, and replacing them with passive suggestions, actually improves response to suggestions.⁷⁸

This is unexpected in terms of most existing hypnosis theories. All commonly used hypnosis scales use goal directed fantasies, which are assumed to help produce responses. Asking people to generate fantasies to help produce responses does not increase the effect, and may even distract from the effect. Although **fantasy prone** people may be able to use fantasies to help produce hypnotic responses, most people apparently do not need them, and their response may even be hindered by such fantasies.

The goal-directed fantasies often reported by highly hypnotizable people appear to be an *effect* rather than a *cause*. This is emphasized in at least two recent theoretical accounts: the dissociated control theory of Woody and Bowers⁷⁹, and the automated response set theory of Kirsch and Lynn⁸⁰. In these perspectives, responses and goal-directed

⁷⁶ Wagstaff, G.F., (1991). Suggestibility : A social psychological approach. In J.F. Schumaker (ed.) *Human suggestibility : Advances in Theory, Research, and Application*. New York : Routledge. Pp. 132-145.

⁷⁷ Spanos, N.P. Rivers, S.M., & Ross, S. (1977). Experienced involuntariness and response to hypnotic suggestions. *Annals of the New York Academy of Sciences*. 1977, 296, 208-221.

⁷⁸ Comey, Gail, & Kirsch, Irving, (1999). "Intentional Imagery and Spontaneous Imagery in Hypnosis: The Phenomenology of Hypnotic Responding." *International Journal of Clinical and Experimental Hypnosis*, Vol. 47, 1, pp. 5-85.

⁷⁹ Woody, E.Z., & Bowers, K.S. (1994). "A Frontal Assault on Dissociated Control," In S.J. Lynn J.W. Rhue (Eds.) *Dissociation: Clinical, Theoretical and Research Perspectives* (pp. 52-79). New York: Guilford.

fantasies are both directly generated from the suggestion in some manner, rather than responses being generated from goal-directed fantasies.

This leads us to question the role of imagination in hypnosis. It is clearly related in some fundamental way, but how? The obvious answer, that imagination produces hypnotic responses, does not seem to be true in any straightforward way.

The central question is **what we expect to happen**. Researchers often say that hypnotic responses are “mediated by expectancy,” meaning that we respond in the way we have been led to expect to respond, not in a way specific to hypnosis per se.

If our goal-directed fantasies don't produce hypnotic responses in most people, then what does? Part of the answer seems to lie in a useful distinction we can make between **goal-directed fantasies** and **goal imagery**. Goal-directed fantasies are actually not fantasies about a goal, but fantasies intended to lead to a goal. The difference turns out to be quite important.

Imagery can either be **about the goal** itself, or **about a way of achieving the goal**. The former is **goal imagery**, and the latter, which is often called goal-directed imagery, is probably better called **means imagery**.⁸¹

Means imagery sometimes occurs spontaneously, but does not seem to improve responses to suggestion. **Goal imagery**, on the other hand, is very common and creates stronger experiences and responses in hypnosis.⁸²

Expectations are established in some very subtle, almost invisible ways, such as by the rhythm of the words and the intonation of voice. They are also established by our constellation of beliefs and attitudes at a given time, and expectations are strongly influenced by whatever we are paying attention to at the moment. This is one of the most important reasons why a hypnotist needs to have their client's attention. **They need to establish the proper climate of expectancy for what is about to happen.**

⁸⁰ Kirsch, I. & Lynn, S.J. (1997). “Hypnotic involuntariness and the automaticity of everyday life.” *American Journal of Clinical Hypnosis*, 40, 329-348.

⁸¹ Ludwig, P.H. (1993). “Changes in performance and performance expectation through mental imagery.” In C. Tarnai (Ed.) *Contributions to empirical educational research*, pp. 80-100. Waxmann [German]

⁸² Comey & Kirsch, (1999), pp. 80

Simply vocalizing the "magical phrases" of hypnotic suggestion has no more intrinsic effectiveness than more politely asking a pig to sing. It's the receptive state of the listener's mind that brings about response to suggestion, and so the effectiveness lies within the preparation and talents of the listener more than the vagaries of how suggestion is delivered.

That is not to say that technique and delivery are unimportant, only that they are solely for the benefit of the particular listener at hand. The search for universal "sure-fire" techniques for conducting hypnosis is misguided for this reason.

There are a number of diverse hypnotic phenomena used by hypnotherapists. These include "ideomotor signals" used by some hypnotists to "communicate with the unconscious mind," and also the "hidden observer" believed to know things that we aren't directly aware of during hypnosis.

Most of these phenomena appear, disappear, and change based on what we are led to expect will happen, and on the specific talents of the individual.

The easiest suggestions to produce are **ideomotor suggestions**, followed by **challenge suggestions**, with the most difficult being **cognitive suggestions**. These probably require different talents, strategies, and interpretations to enact successfully, and different people may enact them in different ways, but all can be convincing.

Ideomotor suggestions involve automatic movements such as: "your arm is getting lighter and lifting by itself." **Challenge suggestions** request you to be unable to do something that you would normally be able to do, such as: "you are unable to open your eyes, no matter how hard you try." **Cognitive suggestions** involve changes in perception or memory, such as: "you will forget the number 4."

Is there anything in common to all of these different sorts of hypnotic experiences ?

The romantic poet Wordsworth said that poets needed to induce a first-person trance state that "yields the mind to some higher power from some other realm." His contemporary, Samuel Taylor Coleridge, instead emphasized the importance of our suspension of disbelief, *poetic faith*.

Our "automatic" responses to language involve in some fundamental way **a weakening of our grip on the reality of the moment, and being temporarily transported elsewhere**. It isn't coincidentally that actors

often describe their best performances in terms of entering a trance state or entering into an alternate reality in order to become their character.

The art of the poet, that of the hypnotist, the art of the actor, and that of the ritual magician are nearly identical in their general goal: to create compelling changes in the experience of the listener.

Whatever we choose to call it, suggestibility (or susceptibility), is responsiveness to ideas. Suggestion is the presentation of ideas to a responsive person.

Thus suggestibility is really the *degree to which the individual will tend to act out communicated ideas*. Acting out means either with skeletal muscle movement or with other kinds of mechanism such as cognitive or affective responses, or autonomic regulatory processes. The collective term for processes whereby communicated ideas are translated into action is *ideodynamic processes*.

Why should a hypnotic induction change the way in which suggestions are processed ?

There are many different kinds of induction, with two themes in common. Virtually all hypnotic inductions involve an **expectation of hypnosis, an "implicit contract"** of some sort for entering into a cooperative engagement. The person being "hypnotized" has expectations about their experience changing.

These expectations are combined with a **withdrawal from our usual contact with reality** through either relaxation, reference to sleep, free play of imagination, or focus on a particular sensation along with the sound of the hypnotist's voice. The combination of relaxing our reality monitoring and expecting our experience to change leads to the condition we call hypnosis.

The characteristics of "highly hypnotizable" people allow them to experience more dramatic changes than other people following a hypnotic induction (and also at other times !). Both psychological tests and brain imaging studies have shown differences between "highly hypnotizable" people and others under a variety of different conditions.

For one thing, highly hypnotizable people process language differently than people who are not highly hypnotizable. In particular, highly hypnotizable people process language with **greater automaticity**.⁸³

⁸³ Dixon, M., Brunet, A., and Laurence, J.R., (1990). Hypnotizability and automaticity: Towards a PDP model of hypnotic responding. *Journal of Abnormal Psychology*, 99, 336-343.

This allows them to keep responding to the voice of another person while focusing their attention elsewhere.

Typically, automaticity of language processing is measured by methods such as the Stroop color naming task, where the reaction time for naming labeled colors is measured. People who process language with greater automaticity tend to have greater interference with the task when the color is given a wrong label (e.g. a blue patch is labeled RED).

Highly hypnotizable people respond in a more automatic way to language, *requiring less attention on the task*. However, this is only a small part of the processes that make highly hypnotizable people different from others.

We might speculate that when the brain of a highly hypnotizable person becomes desynchronized (as immediately following an orienting response or de-habituation), that their more automatic language processing permits them to respond to suggestion while attending to something else. This is reflected in the enhanced hypnotic response to non-salient cues.

In responding to suggestion, they then use their brain in a very flexible manner, bringing their own individual talents to bear.

There are actually a number of things that work together to create the experience of hypnotic response to suggestion. In particular, this includes altering our perceptions, especially our perception of our self, while entering into a psychologically intimate connection with the hypnotist.

The resulting complex web of expectations and sensations, combined with parallel processing marked by desynchronized low voltage gamma frequency activity in the brain, characterizes the initial *hypnotic trance*. A particular form of socially oriented attention mechanism keeps our attention focused on cues and communications from the hypnotist, independently of the task we are performing at the time.

This permits the hypnotist to help structure our subjective experience while we are acting out their instructions and responding to what we interpret them to be asking us to do.

The classical method of creating these conditions is to use immobilization, sensory withdrawal, and monotony to alter help invoke an orienting response, and then habituate part of our attention.

The past emphasis on the qualities of the stimulus used in an induction should be put into perspective. As early as the 19th century, James Braid observed that an induction technique he had previously discovered (eye fixation) was *not effective unless the subject **expected** to be hypnotized.*

That is, the **orienting response** itself is not sufficient for hypnosis. It must also be extended by our willingness to shift our mind into a "scanning" mode, a longer lasting **experiential mindset**. Also, it must be extended via *rapport* into a **cooperative mindset**, invoking our evolved capacity to attend selectively and sensitively to social cues.

Proceeding from **orienting response** to an **experiential mindset** to **cooperative mindset** is probably a natural process, but not necessarily an automatic one. There has to be some cooperation, or at least the expectation that each shift will occur, because at each point, it can be overridden by our self-monitoring and self-control abilities.

This is what "*unhypnotizable*" people are so talented at doing. They do not allow themselves to let go of their self-control following an orienting response or sensory habituation. Because of their particular expectations about hypnosis, they have a consistent habit of seizing their usual operational mindset back when they feel themselves losing control. These people are difficult to use hypnosis with, although that does not mean they will not respond to suggestion or form hysterical symptoms on their own. It only means that they do not have a talent for influencing or allowing the process consciously in the manner of hypnosis.

Some people *do* allow themselves to enter an **experiential** mindset, withdrawing from reality, but then feel uncomfortable at allowing the **cooperative** mindset to develop from it. It may make them feel as if they are losing further control to someone else. These people may be better able to make use of meditative or self-hypnotic techniques, rather than hypnosis with another person.

None of these individual aspects of brain function by itself is sufficient for *hypnosis*. The orienting response and experiential mindset reflect *trance* in some sense, but without the special attention to social cues, the cooperative mindset, we do not have the motivated cooperation that characterizes *hypnosis*.

This was more carefully tested in 1959 at the Stanford laboratory. Two groups were given an eye fixation procedure, one expected hypnosis and the other did not. The group that expected to be hypnotized responded successfully to conventional depth tests as if hypnotized, and the other group did not. Not only was expectation of hypnosis required for

The **expectation of hypnosis** is among the most important elements of *induction*.

induction, but when it was present, no further formal induction was required.⁸⁴

This is why a hypnotic induction is more than just producing the shift of attention that characterizes "everyday trance." It also means bridging between "everyday trance" and the cooperative mindset. This can be done simply in one step, but only by making use of a previously learned association between cues and the desired shift of mindset.

Placebos and simple cues believed by subjects to be "hypnotic" are sufficient to serve as rapid induction procedures.⁸⁵ This tells us that the "hypnotized" person is making a simple shift of mindset that doesn't actually require any formal induction procedure, **only the expectation and readiness to "enter hypnosis."** *What this means and what kind of experience results from it depends upon the talents, expectations, and beliefs of the person being "hypnotized."*

There are several kinds of suggestion commonly used. The traditional divisions of ideodynamic processes are **ideoaffective** (emotional), **ideomotor** (muscular), and **ideosensory** (perceptual).

The phenomena of suggestion may be seen either in response to verbal suggestions from a hypnotist, or in response to guided imagery or self-initiated mental suggestions (**autosuggestion**). One older but particularly useful psychological description of hypnosis⁸⁶ is comprised of four key factors :

1. **Diverted attention** (away from hypnosis itself and also focused on a narrow range of stimuli)
2. **Belief** (in the competence and integrity of the hypnotist, in the usefulness of hypnosis, in the inevitability of relaxation and surrender. Sometimes engendered by the charismatic and confident qualities of the hypnotist)
3. **Expectation** (that suggestions will take effect, building larger successes on smaller ones, as well as building on prior conceptions of how hypnotized subjects behave)
4. **Imagination** (the integrating factor which combines belief and expectation)

The social psychological term **compliance** also describes aspects of this process. The compliance idea in social psychology does not make a

⁸⁴ Weitzenhoffer, A.M., Gough, P.B. & Landes, J. (1959). "A study of the Braid effect: Hypnosis by visual fixation." *J. Psychol.*, 47:67-80

⁸⁵ Glass, L.B. & Barber, T.X. (1961). "A note on hypnotic behavior, the definition of the situation and the placebo effect." *Journal of Nervous and Mental Disease*, 132:539-541.

⁸⁶ Taken from Gindes, Bernard C. (1951). *New Concepts of Hypnosis: Theories, Techniques, and Practical Applications*, Wilshire Book Co., pp. 77

distinction between complying consciously and complying in some autonomous manner (initiated or controlled from outside of awareness). Compliance simply refers to exhibiting behavior expected by others but which runs counter to private convictions.⁸⁷

The **experience (or lack thereof) of direct control of compliant behavior** is not important in social psychological theory, but it is central to dissociation-based theories of hypnosis. In social psychology theory we are primarily interested in whether the person responds to a cue with a behavior. *In hypnosis, we are more interested in how the process is **experienced**.*

Review of Chapter 5

- The most characteristic thing about hypnotic influence is **suggestion**.
- **Suggestion** occurs under a wide variety of conditions. It does not at all require hypnosis or any other special procedure.
- **Hypnosis** involves a particular kind of **expectancy**, rather than a unique enhancement of suggestibility as measured by the standardized scales. Most people's performance in and out of hypnosis is roughly equivalent. "Highly hypnotizable" people experience the greatest difference in suggestibility during hypnosis.
- The kind of **expectancy** produced in hypnosis enhances suggestibility only modestly, and mostly for *highly hypnotizable* people.
- The suggestibility of an individual is largely a result of their developmental history, and is relatively stable.
- Our current state of mind influences suggestibility, but in a modest way, and combines with a variety of situational and dispositional factors. In other words, **trait**, **state**, and **situation** are all factors in how we respond to suggestion.
- There are a number of specific factors that have been identified which influence how we respond to suggestion.

⁸⁷Wagstaff, Graham F., 1991, "Compliance, Belief, and Semantics in Hypnosis: A Nonstate, Sociocognitive Perspective," in Lynn and Rhue, *Theories of Hypnosis*, Guilford Press. pp. 370.

- These factors include the **demand characteristics** of the situation, **personal characteristics** of the hypnotist, the **relationship** between the hypnotist and the person being hypnotized, and variations in the **wording and delivery** of suggestions.
- These factors all interact with existing talents of the hypnotized person.
- Individual suggestions are not as important as the overall structure of the experience, the expectancy created by the situation, the hypnotist's presence, and the induction process.
- The expectancy created by hypnosis usually involves the **intention to actively produce requested responses**, plus the **expectation to experience them as involuntary**.
- The qualities of effective suggestion make use of **biological, visual, and acoustic rhythms** to help build on face to face attentional processes for intimate communication.
- At its best, suggestion builds on many of the same principles that make **music** uniquely effective at stirring our emotions, and makes **poetry** a uniquely effective way of using language, the capacity of rhythms to help convey the meaning of language.
- The effect of suggestion relies on subjective experience and on expectation, but surprisingly **not specifically on goal-related imagery**.
- Our involvement in a suggestion involves more than just the sensory images we create. A goal-directed fantasy is not sufficient by itself to create an expectancy.
- Our motivation to experience a suggestion, our willingness to actively seek the evidence of experiencing the suggestion, and our absorption in the role of a hypnotized person are often important factors, in addition to sensory imagery.
- Hypnotic induction requires that we **relax our reality monitoring** and that we **expect our experience to change**.
- Relaxing our reality monitoring is done in a variety of ways, many of them involving the **habituation of visual attention** while following along with the voice of the hypnotist.
- Hypnotic induction facilitates our absorption into role playing, especially into the role of a "hypnotized person." The "hypnotized

person" expects their responses to suggestion to be involuntary, and so uses their own talents to create that experience as closely as possible.

- The "highly hypnotizable" person is more motivated to enact the role of a hypnotized person and capable of becoming more thoroughly absorbed in that role.
- The ability of a "highly hypnotizable" person to become more absorbed in the hypnotic role comes from several related qualities, such as automaticity of language processing, more rapid sensory habituation, and greater attentional absorption in general.
- Once we relax our reality monitoring, and shift to an **experiential mindset**, we are able to experience things differently. We also need to be connected to the hypnotist, through a **cooperative mindset**, to respond to their suggestions.
- People who are "unhypnotizable" generally have negative expectations about hypnosis that cause them to fear it, or fear losing control. So they either habitually seize control back through an **operational mindset**, or make the shift to an **experiential mindset** but do not form a **cooperative mindset** with the hypnotist.

Summary of Chapter 5

Suggestion is a particular deep way of communicating. It means using a combination of language patterns, rhythms, and multi-sensory communication to inspire emotions and create the expectation that something specific will happen.

Suggestion is distinguished from other kinds of responses by our perception that it is an *outcome* rather than an *action* we perform ourselves.

The effect of suggestion is traditionally measured as involuntary-feeling responses to specific kinds of requests, under standardized conditions. This responsiveness is determined largely by our early developmental history, and only modestly altered by a hypnotic induction.

The association of suggestion with hypnosis is because we have greater control over the effects of suggestion under conditions of hypnosis, so it is easier to demonstrate, especially with certain ("highly hypnotizable") people.

The Story So Far ...

*It's useful to make a distinction between the responses we feel responsible for generating, and those that our mind and body produce as involuntary outcomes. Involuntary outcomes are produced in response to **expectancies**, which are created through the use of biological rhythms, influential language patterns, and social context, interacting with our individual talents. Many people are able to gain some degree of control over expectancies by using procedures such as hypnosis which help us relax our reality monitoring and become absorbed in a particular role, with specific expectations associated.*

Chapter 6

The Unconscious Mind

What Lies Beneath: Great Storehouse or Self-Deception ?

Popular authors writing about hypnosis often refer to it as a way of gaining better or even direct access to the “unconscious mind.” If we think of hypnosis as a way of influencing someone through his or her imagination, through evolved social communication processes, then what is it that is supposed to be “unconscious?” This turns out to be a rich and revealing question because it forces us to probe the depths of our understanding of how the mind works.

How much of our normal face to face communication is outside of our awareness ? Do we have wishes or desires we are not aware of having ? How much of our thoughts, feelings, or actions comes from parts of our mind we aren't aware of ? These are difficult questions that we will try to address because they are very relevant to the kind of influence we use in hypnosis.

The most fundamental thing to understand is that there are **different levels of awareness** to explain, whichever model we might use. We are **consciously aware** of a number of things at each moment, such as the words on this page.

Then there are things we **are capable of perceiving**, but which fade out of consciousness because they are not immediately relevant. This might include the sensations you are experiencing at the back of your left leg. These are “not conscious” but we immediately become aware of them if something happens to direct our conscious attention there. Much of what we experience in hypnosis shows our tremendous **flexibility** and **selectivity** in perceiving some things and not others in our environment.

Research also shows that we often *register* things in our environment that we don't remember ever being aware of. Therefore, we have to be careful to make a distinction between **consciously perceiving**

something (being aware of it) and **simply perceiving** it (revealing under careful questioning that we perceived it).

The difference between non-conscious and conscious here is simply that we have a broad field of awareness and then an ability to selectively attend specific details in that field. This is analogous in hypnosis to the observation that people can focus very narrowly their **conscious awareness**, while still being “aware” of (in some more vague sense of *detecting* things) a larger set of sensations.

The difference might also be thought of as one of **subjective** or **phenomenal perception**, vs. **objective perception**. The former is tested by asking people if they were aware of something. The latter is tested by asking questions based on what was perceived but without requiring direct awareness.

One example comes from a famous experiment in the effects of body language (*kinesics*) in communication. We can ask someone whether they were aware of any changes in another person’s eyes during a conversation, and have them answer that they noticed blinking or tearing or shifting of the direction of gaze. We can also use various controls to test whether they can perceive the relative size of the other person’s pupils. This tests their **subjective perception** in two ways. First, it tests whether they were distinctly conscious of the other person’s pupils. Second, it tests whether they were capable of perceiving differences in the other person’s pupils. Both of these are important questions in perception.

We could also use careful experimental controls to determine whether subjects respond behaviorally differently to different size pupils in the other person. This tests their **objective perception** of pupil size, independently of awareness. In the actual experiment, it was determined that people responded more favorably to someone of the opposite sex who had larger pupils than the same person with smaller pupils. This was true even though they were **not aware of seeing** the other person’s pupils. In addition, they were also **relatively poor at distinguishing** different pupil sizes when deliberately attempting to do so. This is important because it tells us that perception can occur independently of awareness.

This is a considerable conceptual leap to make, to recognize these two different kinds of awareness, but it is very central to understanding many of the phenomena of hypnosis.

Two basic types of perception: Aware (explicit), and unaware (implicit).

There are things we are directly “aware of being aware of,” and others that seem to be in the periphery of our awareness. One of the most

dramatic effects of hypnosis is to create a precise control of, and sharp contrast between, these two kinds of awareness. For example, we may be focusing on something, while other suggestions influence us from outside our immediate awareness. One of the most common techniques in hypnosis is to distract conscious awareness while using implication to suggest things more indirectly.

In addition, there are all the various contents of the mind that become conscious only when we specifically try to retrieve or reconstruct them from memory. These are traditionally called **preconscious**.

There are certain processes that never come (directly) into awareness, such as autonomic regulation, and these are **nonconscious**.

Finally, there are the controversial processes and contents that some theorists claim we conceal from ourselves, as if blocked by some ongoing memory barrier, and these constitute the psychodynamic (Freudian) **unconscious**. These are the ones that are the most difficult to validate scientifically and the most commonly criticized.

Into the Realm of the Unconscious

As human beings, conscious awareness seems very important to us. It is so important, in fact, that we often find it hard to believe when someone first tells us that some of our mind is "subconscious" or "unconscious." How could something in our own mind be hidden from our view? Even stranger, how could things hidden from our view be influencing our thoughts, feelings, or actions?

These are not trivial questions in the study of human nature. *Introspection* tends to inform us that we think rationally, in between storms of emotion. Even during these storms, we often feel that we are acting rationally. We *rationalize* our behavior given the extreme circumstances in which we find ourselves. We *appear* to be ruled alternately by reason and passion, head and heart, and we usually feel justified in calling our behavior rational. Yet, the real story goes far deeper than that.

We generally find mental illness like chronic depression or schizophrenia confusing and frightening, largely because it is so hard to understand how someone can seem to be so totally in the grip of such irrational forces. These are forces that aren't simply misinformed reason or momentary passion, they are often both lasting and overwhelming.

Sometimes it seems to us as if the mentally ill are somehow faking or simply not trying hard enough to behave sanely. How can anorexics starve themselves to death with such ease, in spite of the enormous challenges it causes them and their loved ones, when so many others find it a nearly impossible act of willpower simply to skip dessert?

The human brain is nearly impenetrably complex. The questions of how we control our own behavior and how we interpret our own experience seem enormous when we try to plumb their depths. The serious explorer of human nature must constantly keep this in mind, and resist the urge to think of the human mind simply as the "reasoning machine with passions" that our limited self-conscious thinking tells us it is.

Our observation of human nature must go well beyond introspection and superficial surveys of behavior in order to explain the complexities of our behavior and experience. Throughout human history, many poorly understood influences on our behavior were attributed to **supernatural** forces. Toward the end of the nineteenth century, intellectuals began serious formal attempts to define the principles that govern the workings of the human mind. Over the course of the twentieth century, a number of different schools of thought have evolved which attempt to understand these mysteries.

The Dynamic Unconscious

At the dawn of the 20th century, some of the most clever insights into the mind were those of philosopher William James. James was primarily interested in explaining conscious mental life, such as our will, the experience of emotion, our stream of thought, and our stable concept of who we are.

Long before modern learning theory would demonstrate it, William James recognized that we have a strictly finite capacity for paying conscious attention to things. This concept of attention is one of the central organizing principles in modern psychology, and has an even greater importance in the study of that which is "unconscious."

Basing much of his theorizing on introspection, James had the same difficulty understanding unconscious mental processes that most of us have. He attributed things outside our awareness to strictly unintelligent mechanisms that could perform simple tasks for us without our attention. Even today, some theorists still adhere to this point of view that all sophisticated forms of mental process must be conscious.

A very intuitive way to think of the mind, very much akin to James' view, is that we have our conscious experience, and then we have the remaining miscellaneous items that we don't think about very much.

Some things, like deliberately raising your arm from the table, represent things that earn our attention. Other things, like the sequence of individual muscular movements we make when we are walking, are generally outside of our immediate awareness.

This elegant intuitive model carries the implication that unconscious processing consists of simple "low-level" things like perceptual feature analysis, various details of well-learned skills, and perhaps a certain amount of analysis of language, short of actually understanding it consciously.

Elaborate processing and even interaction with the environment can occur without our explicit awareness.

When the brilliant William James discovered far more complex, even vastly intelligent processes that appeared to be independent of the person's primary consciousness, he tended to attribute them to supernatural forces. William James was also a pioneer in **psychic research** (today known as **parapsychology**). He had a deep and abiding interest in matters of mortality, mysticism, and the human soul, in addition to mundane matters of behavior and conscious experience. It was easier for him (and many of us even today) to believe that an external entity could enter a human mind than to believe that human unconscious processes could be extremely sophisticated and intelligent.

A different perspective was offered by Morton Prince, who in 1906 wrote a classic case study of multiple personality disorder. Prince discovered that within the complex of unconscious processes, we could seemingly form "independent systems of integrated dispositions, i.e. subconscious processes." Prince offered this as an explanation for some of the things that James had explained either as trivial motor subsystems, or as disembodied souls. The idea persists today in various forms as "dissociation theories." A seemingly very reasonable compromise to help steer clear of supernaturalism, by attributing **unconscious intelligence** to the mind by means of *mental systems that function independently of each other*.

Although others had long studied unconscious mental processes, it was not until the ingenious maverick Sigmund Freud addressed the topic in his own way, that the depths of unconscious mental life began to be recognized by the public.

A 19th century philosopher named Johann Herbart had proposed that ideas did not have to be conscious to affect our mental life, and that

ideas varied in intensity and energy. This became the cornerstone of Freudian theory.

Some aspects of the mind are outside our awareness, but what aspects exactly ?

Today, the concept of unconscious ideas remains in modern cognitive science, but in very different forms, such as **schemata** and **unconscious response sets**. These aren't simply "conscious ideas made unconscious," they are a different kind of structure altogether. But in the days of Herbart and Freud, the most natural way to think of these influences was as "unconscious ideas" or "unconscious energy."

Freud tried for many years to fashion himself into a hard scientist of the brain. Ironically, due to the events of his tumultuous professional life, he came instead to develop an extraordinary introspective model of the human mind. Unlike the principles of William James, Freud's model explained mental processes that were outside of awareness as well as those we consider conscious. Freud's concept of the **dynamic unconscious mind** was undoubtedly one of the most influential and remarkable contributions ever made to psychological science.

The evidence upon which the construct of the **unconscious mind** is based includes:

- wishes and impulses being expressed in dreams, though we were previously unaware of them,
- mannerisms and slips of speech which reveal hidden motives
- symptoms of illness appear to serve the unconscious needs of the person

These things, which are reliable observations for the most part, appear to demonstrate that we are often unaware of emotional associations that nonetheless can influence our behavior in **symbolic** ways.

Yet there is an enormous gap between demonstrating that symbolic cognitive processes are a part of the modern human mind, and showing that these reflect an "unconscious mind." As we shall see, there are scientifically more interesting ways today of explaining the things that led Freud to his psychodynamic theories. These will also have direct relevance to our understanding of hypnosis and suggestion.

Very limited aspects of Freud's theory even today are verified by experimental science, although other aspects have not been validated. In one of the most rigorous and comprehensive scientific reviews, *Fact and Fantasy in Freudian Theory*, Paul Kline concludes that 16 of the basic Freudian concepts of mind have been verified experimentally.

The division of mind into a conscious *Ego* and more emotion and wish-laden *Id* appears to be supported, although both function together in most situations.

Interpreting Freudian components of mind in terms of evolutionary specialization.

In modern versions of this theory, the human and primate nervous system is discernibly organized into two different ways of organizing our behavior. These two modes are tightly integrated to produce a single course of action. One mode is **instrumental**, or externally oriented on assessing the external consequences of our actions and manipulating things in our environment. The instrumental mode of cognition would be clearly useful for understanding objects and their characteristics and relationships in the external world. The instrumental mode of cognition is likely to have evolved in human beings to solve the survival problem of being better able to build and use tools and understand the workings of the natural world.

The other mode is **experiential**, or oriented toward recognizing and acting on internal states rather than things happening in the environment.⁸⁸ This mode would be of immense value in promoting social relationships by allowing us to understand and predict both our own behavior and that of others. The experiential mode would have likely evolved to solve the survival problem of living with other people and sharing common goals, while also competing for resources.

The **experiential** mode appears to be intimately linked to our **innate social intelligence** in a way that the **instrumental** mode is not, even though we are capable of manipulating people in an instrumental fashion as if they were objects. That's something we learn to do at a later time in life. Initially, we tend to deal with people according to an innate social intelligence specifically suited for interpersonal relations.

It is particularly useful for our study of hypnosis that *the experiential mode of the nervous system is the one more specifically suited to social communication*. We understand each other in social situations at least as much by empathizing and understanding how someone else feels as by treating them as an object to be manipulated (although we are capable of doing both).

There is an evolutionary link between our sophisticated capacity for social communication and our capacity to interpret our own internal states.

⁸⁸ Reynolds, P.C. (1981). *On the evolution of human behavior: The argument from animals to man*. Berkeley: University of California Press.

An important clue lies in **social intelligence**: the relationship between experiencing our own internal states, and understanding the states of others.

This much may seem reasonable, but the psychodynamic model of the unconscious mind goes farther. If we were to find that deceit and “cheating” turn out to be adaptive features of the human mind, part of our evolved social intelligence, then we must also have highly evolved abilities for detecting cheating in other people.

If this is the case, then the case can be made that **deceiving ourselves** is also an adaptive specialization, since we have to deceive ourselves in order to deceive another person who has a sensitive ability to detect deception. Psychodynamic theory is to a large extent a theory of self-deception. If evolutionary mechanisms evolved with useful abilities to distort our perception of reality, these might even bear some resemblance to the outmoded theories of Freud !

Unconscious processes do sometimes appear in symbolic form in dreams. In the modern interpretation of this finding, dreams are seen as *active maintenance or rehearsal periods for various instinctual behaviors*. The frequent appearance of sex, fear, aggression, defense, attack, and approach-avoidance themes in our dreams seems to reflect the role of important instinctual programs in our nervous system. Dream consciousness, like our waking consciousness, appears to cross between various instinctual domains of behavior in symbolic form.

The problem-solving themes often found in dreams seem to be a kind of preparation our mind uses for the challenges expected in the coming day. Things that are important to us but which we are not consciously aware of being concerned about often appear as themes in our dreams.⁸⁹

The dynamic unconscious mind involves changes in the active construction of awareness, rather than passive barriers to awareness.

Some form of a mechanism resembling Freud's repression defense does also appear to exist, according to Kline's review of the data. Again, however, Freud's explanation is not sufficient. Today we look at this kind of *goal-oriented forgetting* more in terms of the active construction of consciousness than in terms of a passive mental barrier. A similar change has occurred in the way scientists view suggested amnesia. It appears to be a way of actively constructing our awareness differently in order to appear unable to remember something, rather than a literal barrier that prevents recall.

Things that we don't want to think about are not blocked by some magical barrier, they simply don't make it to the final stages of the attention processes when our brain constructs our consciousness.⁹⁰ *We have various ways of preventing ourselves from remembering things that are*

⁸⁹ Hobson, J.A. (1988). *The dreaming brain*. New York: Basic Books.

⁹⁰ Kissin, B. (1986). *Psychobiology of human behavior: Vol. 1. Conscious and unconscious programs in the brain*. New York: Plenum Medical Book.

unpleasant; or otherwise *avoiding being aware of things* that our mind chooses to remain out of awareness.

The “dynamic unconscious mind” represents active, intelligent processes that influence us from outside our awareness. It is not difficult to see the point made by William James that routine activities that do not require our direct attention could be somehow shunted off to a simplistic unconscious mind. Do these unconscious processes really have their own motives? Are they really a *mind* in any meaningful sense?

Some situations call for using our awareness, while some are best met by letting our “unconscious” skills operate without interference.

We experience the transition from conscious to unconscious whenever we learn a new skill. At first, we have to pay attention to all kinds of details, but we quickly require less conscious attention as the skill is learned through practice. Indeed, attempting to pay conscious attention to the mechanics of a well-learned skill often causes it to break down. This fact was emphasized frequently in the proliferation of self-help books in the 1970's and 1980's about applying the Zen philosophy of mindlessness to all sorts of activities.

The remarkable leap made in the theory of the dynamic unconscious is that **unconscious processes can actually be intelligent and goal-oriented in some way**. That is, Freud's Unconscious model was not just a hidden storage area, but an active mental area. It would process information and make decisions that affected our thought and behavior. In other words, it was part of our mind, not a collection of primitive odds and ends of lower neurological function.

For example, the mind would somehow decide on specific experiences that were to be avoided because they were too painful. Painful experience would be relegated to the recesses of an unseen corner of the mind, in a process Freud called repression. According to this model, we maintain a stable concept of ourselves, our conscious ego, but often are unaware of the functioning of our various defense mechanisms, such as repression. Under certain conditions, we could become aware indirectly of the processes carried out unconsciously. Freud and his followers called this unconscious mental processing "primary process."

Using techniques like free association, hypnosis, and dream analysis, Freud believed that the unconscious processes could be discerned. Not directly, but indirectly by their effects on our consciousness. He later gave up on hypnosis, saying that it seemed to distort recollection and that it could create undesirable and inappropriate feelings between therapist and patient. These problems with hypnosis (actually, they are potentially problems inherent in psychotherapy in general) still haunt us today, especially among those unaware of the seemingly active nature of the “unconscious mind.”

What Freud didn't realize at the time was that hypnosis itself was not causing these problems, but the active and reconstructive nature of the mind he was observing. His method of free association was just as prone to errors of interpretation. They were just a different set of errors because the expectations and psychological conditions were different between *free association* and *formal hypnosis*.

The popularity of the concept that the mind processes information and experience in an intelligent way outside of awareness owes a large debt to Freud's ideas. But he went far beyond that concept, to characterize the unconscious processes as a seething cauldron of sexual energies trying to get to the surface. He also believed that intellectualizing the therapeutic relationship ("analyzing transference") was a key to effective psychotherapy. Both of these concepts are now considered archaic (or at least incomplete).

The importance of the **therapeutic alliance** in both medicine and psychotherapy has been very well validated scientifically, but not Freud's notion of distancing himself emotionally from his client. There was an overwhelming overemphasis on the sexual aspect of the relationship, an obsession that was probably largely responsible for Freud falsely seeing hypnosis as "an eroticized dependency relationship."

The Freudian model has been attacked in many places⁹¹, sometimes very effectively. It seems as if new books debunking Freud come out every year. Yet, for all of their apparent potential, the pure information processing descriptions of "unconscious" mental activity are not yet really any significant improvement over the Freudian model for practical understanding of the mind. In fact, in the counter-movement against Freud in current cognitive and social psychology, we often find many of his most valuable lessons being forgotten.

There is incontrovertible evidence in psychological research that many influences on us come from outside of awareness. In fact, it is hard to imagine how we could have survived the long process of evolution without a wide array of powerful factors influencing us as they do all other animals. It seems inevitable that we should have developed a wide variety of different "cognitive tricks" that could save us in various survival situations where **general problem solving intelligence** would be too slow. This is the "Swiss army knife" view of the mind now promoted by the evolutionary psychologists.

⁹¹ Two representative examples include : B. A. Farrell, *The Standing of Psychoanalysis* (Oxford : Oxford University Press, 1981), S. Fisher and R. P. Greenberg, *The Scientific Credibility of Freud's Theories and Therapy* (New York : Basic Books, 1977),

Our capacity for **conscious** reasoning holds a very special place in our own explanations of our behavior; since we like to think of human beings as “the rational animal.” Yet, we can easily find a multitude of examples on our daily life where something other than reasoning predisposed us to act in a particular way. There is a great deal of strong evidence of the different **mental specialist functions** that remain with us in addition to our **general problem solving intelligence**.

It is our desire to understand these non-rational, or at least unaware influences that leads us to postulate such odd concepts as the “unconscious mind,” not to mention “hypnosis.” Are there better ways to describe these influences than the creation of separate mind inside our own mind?

It is not clear that the more elaborate or “deep” psychodynamic models that deal more eloquently and more intuitively satisfyingly with higher mental functions; are any more *scientifically accurate* for being less awkward. In the end, we must admit that Freud, despite his best efforts, was not a great scientist. He was not a scientist at all, but more a clever myth maker and storyteller. His ideas are sometimes useful, but very often misleading, in the process of psychotherapy, as we tend to attribute special significance to things that appear “from out of the unconscious.”

Three areas in particular reflect the concept of **unconscious mind** and its limitations in hypnosis⁹²:

1. Using hypnotic suggestion to “reprogram” the subconscious. The mind is not a computer (in the sense of a simple digital computer), and hypnosis does not permit us to simply reprogram it. Hypnosis can (sometimes) help prevent a suggestion from being analyzed critically and consciously. However, hypnotic response is by no means always automatic, even if it is “unconscious.” The intention of the hypnotist is processed and interpreted intelligently, even if outside of awareness, before being carried out. Nor is it a foregone conclusion that uncritically accepted ideas are effective in influencing us in useful or meaningful ways. It appears that when we use our own reasoning about a subject to examine it, and find it worthwhile, we give it much more importance than if it were accepted uncritically. It is also true that being unaware of the source of an emotional reaction can cause our reaction to be stronger. In reality, our conscious and unconscious mental processes operate closely together. Skillful hypnotherapy doesn’t get its effectiveness (solely) from bypassing our

⁹² This discussion is based on chapter 6, “Hypnosis & psychodynamic therapy,” subsection called “The Concept of the Unconscious Mind,” in Gibson, H.B. and Heap, M., (1991). *Hypnosis in Therapy*. Laurence Erlbaum Associates. Pp. 90-93.

conscious mind, but from helping us better coordinate our conscious and unconscious mental processes.

2. Assuming that the subconscious is an unlimited repository of knowledge, wisdom, and potentials. This often becomes an excuse for not using reason and problem solving ability, relying on our “unconscious problem solving ability.” We know today that **unconscious processes are useful for some things and very weak for others.** They carry less discrimination, they don’t have to make sense, and they are expressed mostly in symbolic ways. We have to apply our conscious reasoning abilities to interpret and make full use of unconscious processes, applying our full intelligence to what they are telling us.
3. Assuming that symptoms are linked to particular events in personal history and that bringing that event to awareness will help manage the symptom. History may well have a bearing on a symptom, but it is actually relatively rare to find a particular single event that created a psychological symptom. One event may come to symbolically represent a symptom, however, just as the symptom comes to symbolically represent an unresolved problem. The search for the “root cause” of a problem, with hypnosis or otherwise, appears to be a misguided endeavor in therapy for the most part.

OK, so the old concept of an unconscious mind that stores everything, hides specific memories that “caused” each symptom, and can be reprogrammed with hypnotic suggestions, is not really accurate.

Fears, implicit response sets, expectancies, and other factors that govern emotions and behaviors are organized, though we are not necessarily aware of them or of their organization. It surely isn’t as simple as most pop psychology models lead people to believe.

In the process of therapy or self-improvement, we often find great value in becoming aware of what kinds of things trigger our emotional responses and response sets. The question is whether it is also useful to think of such things in terms of a separate “mind.” Simple, and intuitively attractive, yes, but not necessarily useful. The more we rely on “the unconscious,” as a source of guidance, the less we are motivated to use our own conscious intelligence. Both are needed.

The cognitive models don’t explain very much of our *everyday behavior* yet, nor do they help us account for how the psyche is structured overall, or how it develops over time. While much of Freudian theory is either

unfalsifiable or outright false, a few of those old ideas do have merit⁹³, and may still have valuable lessons for us today.⁹⁴ Debunkers of Freud's entire scheme, while working toward a more scientific psychology, also have frequently been guilty of “throwing the baby out with the bath water,” by not replacing the archaic psychodynamic unconscious with an equally useful conception explaining the same empirical data.

It has often been claimed that the success of new drugs and other biological treatments, and the effectiveness of cognitive-behavioral therapies has rendered psychoanalytic insights archaic, but this is not entirely true. Upon close examination, neither modern cognitive-behavioral therapies, nor psychiatric drugs have produced the miraculous mind cures expected and often claimed of them. Much of their effectiveness, including that of drugs, is attributable to the power of our own expectations to produce a cure.⁹⁵ This is why methods such as hypnosis continue to have such potential value in enhancing other kinds of treatment. Hypnosis gives us more flexible control over the mental processes underlying our expectations.

The trick is that we don't know how to reliably make use of the imagination to help produce cures. We have a multitude of completely different methods based on completely different schools of thought, and with only a couple of exceptions, **they all seem to be about equally effective for most problems⁹⁶ even when compared with drug treatments.**⁹⁷ Some critics go even farther, and claim that therapist training and mode of therapy have no correlation with patient outcome.⁹⁸

Many theorists have explained this as demonstrating that most mind cures are really based upon some form of the **placebo effect**, or our capacity to respond to expectations.⁹⁹ *However, we haven't been able to pinpoint or measure the qualities that enable a particular therapist or*

⁹³ Fisher, Seymour, and Greenberg, Roger P., (1996). *Freud Scientifically Reappraised*. John Wiley and Sons.

⁹⁴ Gay, Peter, (1988). *Freud: A Life for Our Time*. W.W. Norton.

⁹⁵ Fisher, Seymour, and Greenberg, Roger P., (1989). *The Limits of Biological Treatments for Psychological Distress*. Lawrence Erlbaum.

⁹⁶ The “Dodo Hypothesis,” popularized by Lester B. Luborsky and colleagues in a 1975 *Archives of General Psychiatry* issue, quoted in the December, 1996 *Scientific American* article by John Horgan, “Why Freud Isn't Dead,” pp. 109.

⁹⁷ Martin Seligman is a noted authority on outcome research, and commented in the December, 1995 *American Psychologist* that a November, 1995 *Consumer Reports* survey was empirical validation that psychotherapy was effective as compared to drugs.

⁹⁸ Dawes, Robyn M., (1994). *House of Cards: Psychology and Psychotherapy Built on Myth*. Free Press.

doctor to induce the placebo effect for a particular problem in a particular client. This is the very art that the hypnotherapists attempt to master.

Sometimes it is claimed that hypnosis acts essentially as a placebo, that we respond to general expectations of the hypnotist. Expectancy is indeed an important part of hypnotic responding, but it is far more specific, and (surprisingly!) we can't identify it completely with the more general placebo effect.

*The placebo effect is technically activated by our beliefs about the therapy, but is outside of our control. Hypnotic responses are under our more direct control, and good placebo responders do not seem to be the same people as good hypnotic responders.*¹⁰⁰ Placebo response appears to make use of similar but distinct psychological processes from hypnosis. More specifically, **the way we measure hypnotic ability tells us about different talents than the ones needed for effective placebo responding.**

Some of the most interesting attempts to find the common factors behind successful mind cures were made by associates and students of Carl Rogers. Eugene Gendlin, for example, emphasized the **therapeutic alliance** and an **experiential mindset** (which he called *focusing*) in fostering therapeutic change in people during all forms of therapy. These factors have been borne out by a variety of research over the years. Even drug therapy is strongly influenced by the therapeutic alliance.

The Cognitive Unconscious

Although some of the basic concepts appear to be sound, much of Freud's notion of the dynamic unconscious was in effect a Freudian fantasy, like the many varied theories of the early mesmerists. Freudian psychoanalysts became a subculture unto themselves far removed from the emerging trends in the early psychology of behaviorism, and later social psychology and cognitive science. Our current understanding of the mind is a combination of what we have learned in all of these fields and more.

Behaviorists denied the significance of mental processes in favor of outward behaviors and how they relate to stimuli. It was not until the

⁹⁹ One of the earliest forms of this hypothesis is seen in Jerome Frank's 1961 book, *Persuasion and Healing*.

¹⁰⁰ Rossi, Ernest Lawrence, (1986). *The Psychobiology of Mind-Body Healing*. New York: W.W. Norton & Co. pp. 19.

computer age and the information processing models of the mind that the concept of mental processes again came into academic psychology study. At the same time as the study of thinking came back into psychology in the form of **cognitive science**, clever observations of social situations provided us with much information about how we interact with other people. Thus, **social psychology** helped illuminate the often-unconscious nature of social influence. The modern concept of the **unconscious mind** is to a great extent a **social interaction mind**.

Much of the evidence of “unconscious” influence on our cognitive processes comes from social psychology.

The combination of our knowledge about social interactions and our knowledge about information processing in the brain provides us with the foundation for the modern scientific concept of **unconscious mental processes**. The modern conception is sometimes called the *Cognitive Unconscious*, to distinguish it from the *Freudian* or *Psychodynamic Unconscious*.

In a 1995 article called "The rediscovery of the unconscious," researcher John Kihlstrom commented that

"we now have good evidence, from a wide variety of research paradigms, that our experience, thought, and action is influenced by mental structures and processes of which we are not aware."

Continuing,

"... [the unconscious] is an empirical fact of mind, and can be studied by conventional techniques of psychological science."

Conscious experience is neither trivial nor simply an epiphenomenon. It is an important part of our ability to regulate our own behavior and body processes. Conscious experience in human beings serves two crucial roles: *monitoring our environment* and *controlling ourselves*. This is done through the construction of an identity, our view of ourselves as an active agent.

The notion of a **sense of self** experiencing something is just as important as what they experience. Without it, we simply don't have consciousness as we think of it. This is part of the reason why we can have perception in some sense without conscious awareness.

Attention and Preconscious Processing

Although William James underestimated the sophistication of our unconscious mental processes, he did recognize the central importance of attention. We can only process a certain amount of information in a given time period. This was pointed out by early cognitive psychologists. Most famous was George Miller's famous 1956 *Psychological Review*

article "The magic number seven, plus or minus two: Some limits on our capacity for processing information."

Explicit awareness has a very limited capacity.

Miller was pointing out that we apparently only have the capacity to hold between five and nine "chunks" of information for conscious rehearsal at once. This is true whether the information comes from our environment or from our internal thoughts and sensations, or both. This is a crucial understanding to have before the student of human nature can decipher the apparent mysteries of unconscious mental processes.

In a day, we process a vast amount of information. A group was shown 2,560 pictures for ten seconds each. They were able to **recognize** 90% of them, even after several days.¹⁰¹ This vast information is clearly available to us to some sense, since we can **recognize** having seen it. However, that doesn't mean we could **recall** much of it.

We process much more information than ever reaches conscious awareness.

Our capacity for recognition is much greater than our capacity for recall. Being able to recall something requires it to be processed further than being able to recognize it. This difference is crucial when we talk about subtle forms of influence, since subtle influences often fall somewhere between recognition and recall, just as they fall between perception and awareness. Much of what happens in hypnosis involves our flexibility in bringing things into or out of conscious awareness.

This realization is important, because for much of the early history of cognitive science, it went unrecognized. The original theories of attention from the 1950's described attention as a filter which screened out information at a low level. The screening was based on criteria set by higher level mental processes.^{102, 103} Gradually, careful experiments in perception revealed that this early filter model was wrong.

What was found is that there is actually a great deal of processing going on even for information that we are not aware of. Attention does not filter out what we perceive, it reflects those aspects that are pertinent to the task at hand.

Active processing of perceptions that we are not aware of has been called **preconscious**.¹⁰⁴ The question is whether all this preconscious activity has any influence on us, or is simply a temporary storage of unattended sensory data.

¹⁰¹ Haber, R. & Standig, L.G., (1966). Direct measures of short-term visual storage. *Quarterly Journal of Experimental Psychology*, 21, 43-54.

¹⁰² Cherry, E.C. (1953). "Some experiments on the recognition of speech, with one and with two ears." *Journal of the Acoustical Society of America*. 25:975-979.

¹⁰³ Broadbent, D.E. (1958). *Perception and communication*. London. Pergamon.

Perceptual research has gradually revealed that we are indeed influenced by preconscious processing. Information that has never reached consciousness can have important influences on cognition and action. Preconscious representations can bias our conscious perception and influence our thoughts, feelings, and choices. This is demonstrated clearly in modern **subliminal priming** experiments, as well as various other experiments in social and cognitive psychology.

By structuring our cognition in terms of previously learned information, we organize conscious information differently to reduce the amount of new information that we have to keep in mind. Using *general rules* to structure our knowledge of the world permits us to access large amounts of information rapidly. This kind of organizational information is often called **representational memory**. The details are outside of our awareness, although we can often infer them from our behavior.

Types of Knowledge and Memory

Cognitive scientists find it useful to think of memory in terms of several different types. Two distinctions in particular are often used:

1. Declarative vs. Procedural Knowledge
2. Episodic vs. Semantic Memory

The first distinction is the most intuitive. It concerns things we know vs. things we can do. Both are represented in memory, because both are learned and later reproduced. **Declarative knowledge** is facts we know about the world, while **procedural knowledge** is the skills used to manipulate and transform those facts. This distinction comes from the computer metaphor, where a distinction is made between *data* (information) and *code* (instructions).¹⁰⁵

In human memory, the distinction between declarative and procedural is useful because it refers to information that may be available for us to remember consciously (declarative) vs. that which never has to become conscious (procedural). Note that this is slightly different from "conscious" and "unconscious." Although procedural knowledge is "unconscious," declarative knowledge can either be conscious or unconscious.

¹⁰⁴ Dixon, Norman F., (1981). *Preconscious processing*. Chichester: Wiley.

¹⁰⁵ Winograd, T. (1975). "Computer memories: A metaphor for memory organization." In C.N. Cofer (ed.) *The structure of human memory*. San Francisco: Freeman.

Unconscious Procedures

Through practice, we reduce the amount of an activity that must be monitored and controlled consciously. We learn new procedures or *action templates* that do not necessarily require conscious attention to activate and carry out. In this way, skills we practice consciously can become unconscious **procedural knowledge**.

Procedural knowledge helps us reduce the amount of attention needed in daily life through our ability to internalize useful patterns of movement, as we do when we learn motor skills. The well known and often quoted concept of going from **unconscious incompetence** to **conscious incompetence** to **conscious competence** to **unconscious competence** reflects this process of building procedural knowledge.

We first become aware that we don't know something. Then we apply explicit attention to learn it to the point of competence. That is, we are aware of trying to accomplish something and what skills we are trying to bring to bear. In this sense, our skills often start out as declarative structures, or facts about procedures rather than as procedures themselves.

Finally with sufficient practice we learn a skill well enough that it no longer requires conscious attention to perform the component skills. We compile the declarative knowledge into procedural knowledge, which can be applied with greater skill, becoming unconscious.¹⁰⁶

In the end, we can devote our attention to high level planning and we can trust that our body will respond with the proper skills at the right time. This is just one example of how we coordinate conscious and unconscious processes when we learn something new.

Remembered Experiences vs. Known Facts

A more sophisticated distinction which applies specifically to human beings concerns **episodic** and **semantic** memory. **Episodic memory** is personal experiences marked by self-reference and the context in which an event occurred. Episodic memory generally contains declarative knowledge (data), it is memories about things rather than how to do things. When we think of a "remembrance" of a past event, we are thinking of an episodic memory.

Although episodic memory is declarative, declarative memory is not always episodic. That is, we have a huge network of information about the world, and not all of it involves self-reference or is clearly associated

¹⁰⁶ Anderson, J.R. (1982). "Acquisition of cognitive skill." *Psychological Review*, 89:369-406.

with a particular context. We also have abstract facts and concepts that have no specific association with particular events in our life. This non-episodic declarative knowledge is used in our thinking, but we are not directly aware of it as an experience.

Most non-episodic memory is called **semantic memory**. This is our mental catalog of abstract categorical information, like an internal encyclopedia of facts and skills. We have an enormous capacity for words, word meanings, and concepts. Semantic memory can be either declarative (data) or procedural (code).

Semantic memory permits us to handle language efficiently without conscious effort. We are capable of some degree of semantic processing from even a very brief exposure to words. However, additional exposure permits us to process more of the words we are exposed to more deeply or more relevantly to the task at hand.

The more deeply processed or more relevant a word is, the more accessible it will be to explicit recall later.¹⁰⁷ This is why skimming or reading a page in order to type it usually results in less comprehension than reading it carefully for comprehension.

We can process surprisingly massive amounts of information superficially, but deeper processing is slower.

The techniques of speed reading and skimming are so effective because they teach us to make use of our “unconscious” ability to recognize vast amounts of information. **We can process large amounts of information without conscious awareness, if it is relevant enough to the task we are focusing on.**

Normally, we attempt to process the information much more deeply, and this slows down our maximum reading speed considerably. Since relevance rather than conscious attention is the key to whether **preconscious** information is processed in our existing long term memory network, there is not always a specific need for conscious awareness in processing information.

How is relevance established ? One of the main ways is through conscious **focus of attention** on a goal. Although we can absorb some amount of information just by hearing or reading it, we learn much more by asking questions and thinking about the meaning of the content, applying our conscious attention and effort to the process.

Another way is through **expectation**. Our expectations activate some existing representations in the network of declarative knowledge.

¹⁰⁷ Craik, F. & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology: General*, 104, 268-294.

A third way is from the **analysis of features** of the preconscious material itself. The physical and semantic attributes produced by low level feature analysis can themselves trigger representations in our memory. This represents what information scientists call "bottom-up" processing, to reflect that it is qualities of the data itself that is driving the process.

*Our mental processes (both conscious and unconscious) thus result from an **interaction between concept-driven ("top-down") and data-driven ("bottom-up") processing.***

Applying and coordinating both our conscious and unconscious abilities is more effective than trying to rely upon conscious resources or unconscious ones alone. However, our capacity to process a great deal of information without explicit awareness is sometimes remarkable. This is the factual capacity behind many of the extraordinary claims made about the capacity of the unconscious mind.

The Social-Emotional Unconscious

Human memory is associative, and meaningfulness is directly related to richness of associations.

Processing something more deeply or with greater relevance means in practical terms that there **are more associations with it in memory.** Associations can be *conceptual* or by *value* or *emotional tone*. Association by value or emotional tone is much more fundamental and powerful than abstract conceptual association, at least for conscious memories or episodic memories. This is borne out by the emphasis on emotional tone in memory courses.

Even superficially perceived material can trigger significant cognitive processing under conditions where the material has many associations of great personal significance. **Remember that "bottom-up" feature analysis can reveal personal relevance of preconscious material.**

The more images, stories, and similar events associated with an idea, the more personally meaningful it is, and vice versa.

Deeper processing of words means that they trigger associations such as images, stories, and recall of similar events.¹⁰⁸ There are several ways we process information more deeply, or associate it with more information in memory. One is to relate the information to you personally. Our richest associations in memory relate to ourselves. Information related to an event in your own life is remembered better and longer than information not related to your life.¹⁰⁹

¹⁰⁸ Craik, F. & Lockhart, R.R., (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, 12, 599-607.

¹⁰⁹ Bower, G.H., Gilligan, S.G., & Monteiro, K.P., (1981). Selectivity of learning caused by affective states. *Journal of Experimental Psychology: General*, 110 (4), 451-473.

Meaning is conveyed by richness of associations. The more interwoven into our memories something is, the more meaningful it is to us, and vice versa. Our deepest values are linked in some way to vast amounts of information in our memory, and provide a general organization for our memory. Similarly, our core beliefs about the world have much richer associations than our more superficial or tentative beliefs.

Suggestion works by activating meaningful networks of associations.

This knowledge of how the mind works can help us understand how **suggestion** actually operates. ***When we process something in our mind, we activate its network of associations as well.*** Most importantly, this process of triggering a network of associations does not have to be conscious.

A common popular non-scientific view of hypnotic suggestion holds that words simply command the “unconscious mind” to respond if we are in the right “hypnotic state.” Hypnosis practitioners who are not trained in psychological science often quote various traditional rules of how the unconscious mind supposedly processes language differently.

The most common example is asking someone not to think of a purple elephant for one minute. They explain our inability to do this as the unconscious mind being unable to understand negatives for some reason.

An alternative cognitive explanation is that *we create a link between our mental understanding of what we are trying to do and the concept of a purple elephant.* Whenever we activate the goal, we activate the association with purple elephants. So we can't remember the goal without thinking of a purple elephant, unless we are somehow able to either construct a barrier in our mind, or create an autonomous subsystem that doesn't require attention. The autonomous subsystem is what seems to happen with certain kinds of hypnotic response.

This explanation not only helps understand why suggestion does not require hypnotic induction to be effective, but also why **suggestion operates more analogously to a seed planted in an active memory network than to a command to an unconscious mind.**

Contrary to our intuition about our own memory, simple intention to remember has little effect on memory. Establishing more associations is necessary for remembering something.¹¹⁰ Creating and making use of these meaningful associations is the key to making effective use of hypnosis, as well as to memorizing things effectively in general.

¹¹⁰ Nelson, T.O. (1976). Reinforcement and human memory. In W.K. Estes (Ed.), Handbook of learning and cognitive processes (Vol. 3). Hillsdale, NJ: Erlbaum.

This also helps take some of the mystery out of “posthypnotic suggestion.” The idea that a suggestion can still influence us long after hypnosis has ended is difficult to reconcile with the notion of a special state of enhanced suggestibility. If you believe that hypnosis is such a state, it is difficult to understand why someone would still respond to a suggestion at some time minutes, hours, days, or even longer after the hypnosis session has ended.

The existence of posthypnotic phenomena along with posthypnotic amnesia (we don't remember agreeing to carry out the posthypnotic suggestion) demonstrates three important things about suggestion:

1. that we can establish and also activate goals, where the **source** of the goals is itself outside of awareness (especially in connection with a social contract with another person),
2. that activating things associated with the goal also activates the goal itself, and
3. that associations influenced by suggestion can be complex intentions as well as simple procedures.

What about the human mind makes it possible to process information without using any conscious attention? We've already seen that rehearsing a skill consciously can eventually create a procedural memory outside of consciousness. But there are other possibilities as well.

It is clear from the evidence of a number of different fields of study that we have different domains of mental processing, each with its own memory, cognitive strategies, and reasoning. **We process information differently in different contexts.**

Some of this is due to having different kinds of brain specialization for different purposes (such as spatial reasoning vs. language or logical-mathematical thinking).¹¹¹ Some of it may also be due to learning skills at different developmental levels¹¹² or under different emotional conditions¹¹³, causing the skills to be separated in the mind. **Our emotional state and our current level of development are both very powerful organizers of learned skills as well as memories.**

¹¹¹ Gardner, Howard, (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.

¹¹² Fischer, K.W. & Pipp, S.L. (1984). “Processes of cognitive development: Optimal level and skill acquisition.” In R.J. Sternberg (ed.) *Mechanisms of Cognitive Development*, San Francisco, Freeman.

¹¹³ Bower, G.H. (1981). “Mood and memory.” *American Psychologist*, 36:129-148.

We are able to think or apply our skills across different mental contexts, but it has to be done deliberately and with effort, it is not automatic. We do this through the processes of **generalization** (making something learned in one context available to multiple contexts). We also do this through the process of **integration** (combining different skills or memories across contexts).

Because skills are divided up in this manner in the mind, we cannot always apply the best skill for the job at hand, even though we may have learned it already. We sometimes find that the situation is different enough that we are unable to apply a learned skill when we try. This is sometimes known as the problem of *transfer* of skills.

The various domains are capable of communicating seamlessly with each other, or of functioning independently of each other. This partial independence of the domains of intelligent behavior and perception is a reasonable basis for the appearance of an “unconscious mind.”

Normally, when we try to apply a skill to a situation, we adopt the proper mindset for the skill. This forms much of the basis for the applied science of sports psychology, creating the proper mindset for using our learned skills. This means both a state where we can perform at our best, and where our learned skills can be brought to the situation where we need them.

When the required skills or procedures aren't available for this situation at hand, we resort to various primitive strategies for crossing between cognitive domains.

One common strategy for simplifying an overly complex task is **shifting our focus**. Lacking a complex skill, we might perform multiple simpler skills in sequence. That is, we juxtapose two skills rather than integrating them.

Another common strategy is to **use a similar skill from another domain**. This is part of what we often call "creativity," because it reflects our ability to come up with novel patterns.

For example, we might *combine* or *confuse* two skills or ideas from different domains because they have similar attributes. We might also *substitute* an idea or skill from one domain for another one. In some cases, we use *wishful* or *magical* thinking, in the form of fantasies which may have symbolic components. These built-in unconscious strategies reflect what psychoanalysts call **primary process thought**.

Freud thought that primary process thought was the original form of thinking in infancy, and later developed into secondary process or rational thinking. It appears instead that primary process thinking occurs under various conditions throughout our lives. We use it when our situation demands more complex skills than we have. We also use it when we relinquish our usual sense of control over our thoughts (as in dreams or during hypnosis). **Whenever the situation calls for or encourages something novel, primary process thinking often shows up.**

This is the basis of the idea that symbols and images are the language of the "unconscious mind." Symbols and images are the common way we perceive the inter-communication between different cognitive domains when there is no explicit integration between them.

When we are able to distinguish the various components of a task and control them in relation to each other to deal effectively with a goal, we have a **conscious** control process. When we cannot distinguish and integrate the different components of the task, it is **unconscious**. This is either because the skill has become an unconscious procedure, or because we don't have the skill to apply to the task.

We routinely utilize unconscious mental processes, because we frequently use well-established procedures and we frequently face situations where novelty is called for. Skills are context-specific and they are organized by emotional tone, so **they tend to remain specific to one cognitive domain until we actively integrate or transfer them across domains**. At the level where we integrate the skills, they are conscious, but at lower levels the component skills are unconscious, or *automated*. One of the major things done in psychotherapy is to recognize when we have *automated* negative patterns and to try to change them.

Skills and memories are naturally separated into different cognitive domains until we integrate and generalize them across domains. The most dramatic examples of this separation come from emotionally charged memories.

The best scientific evidence at this time for unconscious processes involves the mechanisms we associate with emotion. For example, messages and images flashed so briefly that we don't report seeing them can still create a measurable effect in terms of emotional arousal responses. For a review of this thorough and convincing experimental work, see Robert Bornstein and T.S. Pittman's 1992 edited collection "Perception without awareness: Cognitive, clinical, and social perspectives," from Guilford Press, especially Bornstein's chapter on the "mere exposure effect."

Exposure to a stimulus that we don't remember seeing or processing consciously can in fact change our emotional associations with that stimulus, changing our preferences unconsciously. In any case, it is a proven fact that we can respond emotionally without being conscious of why. These are examples of data-driven processing. Some emotional responses, such as the mere exposure effect referred to above, are actually more powerful when we are not aware of them than when we are.

Data-driven processing is an example of the *adaptation* function of the mind, as opposed to *information storage*. It is difficult to understand if you think of the brain as a general purpose information processor. It makes much more sense if you think of the brain as an collection of specialized domains capable of both independent and coordinated action.

Emotional triggers in general seem to be more potent if we are not aware of their effect, and our interpretation of our own emotional arousal can often be manipulated by prior expectations (concept-driven processing).

This means that **unconscious stimulation combined with expectations about how the stimulation should be interpreted can have a particularly powerful influence on us**. This is a kind of effect that masters of seduction sometimes exploit. They use subtle means of stimulating their quarry's sympathetic nervous system, then helping them interpret this sensation as sexual attraction, and this is sometimes convincing enough to work. We are particularly vulnerable to this kind of strategy because it exploits both "top down" and "bottom up" processing at the same time.

The same process is used more subtly by masterful persuaders of all types. They help incite emotions in the listener, while guiding them to interpret their own emotional response in desired ways. This has a lot to do with the way we use hypnosis in practice as well.

In real life, we are continually bombarded with a massive amount of complex stimuli, some elements of which we notice, and others we do not. Of those we notice, some can be recalled at will, while others can not. In laboratory experiments, as well as real life, some of the material that we don't recall can later be recalled with the help of methods such as free association, fantasy, and dreaming, as well as with hypnosis.

We are aware in some secondary way of much more than we are directly "aware of being aware of." The ability to recall increasingly more over time is sometimes known as *hypermnnesia*, just as the inability to remember over time is *amnesia*. For interesting details about one type of laboratory demonstration of hypermnnesia, see Erdelyi and Ionescu's

chapter: "The direct recovery of subliminal stimuli" in the Bornstein and Pittman book mentioned above. This is one type of evidence that we process more information than we are aware of, and that it can later influence us or sometimes even be recalled under special conditions.

In hypnosis, the contrast between these two types of awareness becomes particularly strong. However, as in dreaming, the material we recall is mixed with fantasy. The **experiential mode** of mental processing closely linked to **social intelligence** is also specialized for **constructing imaginative scenarios** that simulate reality.

This specialized intelligence for constructing fantasy simulations is very likely the biological basis for the *primary process* identified in psychoanalysis. We already saw that this mode of cognitive processing is invoked in situations where our skills are insufficient for the task, or where we relinquish conscious control. Now we see that it is also important for social interaction. We perceive and interpret each others' intentions largely intuitively, through skills that are "unconscious."

Why should this be so ?

There may be good reasons for it, but it may also partly be an accident of evolution. Basic social communication was needed long before sophisticated symbolic language skills.

It is likely that social intelligence evolved early, in an independent adaptive module of the mind from those used for other kinds of mental processing, closely linked to processing emotional associations. The machinery for processing abstract cognitive strategies probably came much later.

The appearance of meaningful symbols in dreams and intuitions may well be the manner in which "mute" modules communicate with the cognitive modules responsible for more of our conscious cognition.

Psychoanalyst Howard Shevrin demonstrated through EEG readings that we respond to subliminal stimuli related to "unconscious" memories (such as the cause of a phobia), whereas we don't respond as strongly if the same stimulus is made conscious. This goes along with the notion that the processing of emotional associations and cognition about social exchanges can not only take place outside of awareness, but that the processing is somehow different. Usually our emotional response is muted if we are made conscious of it, and therefore able to regulate it. Once again, we observe the general principle that **cognitive processes commonly serve to regulate emotional response.**

Emotions, attitudes, goals, and intentions have all been shown to be activated by perceptions we make outside of awareness. Even when we are aware of the stimulus itself, we are most often unaware of the automatic effect it is having on our thoughts, feelings, and behavior.

We trust our unconscious social perceptions as if they were facts. In other words, when we are unaware of its effect, a social perception is as good as a fact in its effect on our thinking and behavior. This is a natural result of the idea that cognitive processing about social exchanges can occur independently of cognitive processing for general problem solving.

Some of the most dramatic demonstrations of this kind of influence are those shown in experiments by social psychologist John Bargh. For a discussion of Bargh's experiments, see his chapter: "Auto-motives: Preconscious determinants of social interaction," in the 1990 *Handbook of Motivation and Cognition* by Higgins and Sorrentino from Guilford Press.

These effects are a direct result of the modular architecture of the mind. Perceptual modules evolved to solve survival problems in our distant past by presenting things in particular ways to higher functional modules of the mind and also to our conscious awareness. We rarely think to doubt the evidence of our senses. Rather we interpret them and act on them.

When hypnosis is used to create perceptual illusions, we don't stop to wonder if they're real, we act on them. The lower level modules of the mind simply respond in the way they are specified by natural selection to respond under conditions where our evolutionary heritage found it adaptive to rely on these modules. It makes sense that under certain conditions it would have been adaptive to fool our own senses, especially in social exchanges, in order to more effectively enact a delicate deception, or take on an exceptional temporary role.

Although we often respond to perceptual illusions as if they were real during hypnosis, we don't necessarily **believe** that they are real. Some illusions are more convincing than others, and different people have different ways of interpreting them.

The tricky part about hypnosis is that we often simultaneously perceive the illusion and also know that it is an illusion. This makes it possible for us to override the effects of the illusion with our mind if we feel we need to do so. This is what we mean when we say that someone is able to resist inappropriate hypnotic suggestions, or "come out of hypnosis" in case of an emergency. It's like our ability to suspend disbelief to watch a movie

Even when we act on hypnotic illusions, we don't necessarily also believe they are real.

and get caught up in the action on the screen, while still realizing intellectually that it's just actors and simulated action.

It might be argued that the functions of the cognitive unconscious mind are experimentally demonstrated but not an important factor in real life, or that they are too simplistic to be of much interest. However, as we shall later see, there are many phenomena in real life which are difficult or impossible to explain without either assuming supernatural forces at work or allowing for sophisticated and active unconscious processes underlying cognition.

The modern view of the unconscious mind relies on specialized processes that have specific evolutionary adaptive functions, usually social functions, and which are often outside of conscious awareness for good reason.

A number of experimenters (including Kihlstrom and Zajonc, among others) have shown that not only physical features, but also *conceptual meanings*, are processed unconsciously. Our mind would likely be more sophisticated in processing non-verbal than verbal material outside of awareness, which explains why many verbally oriented experiments do not show as much sophisticated information processing as we would expect for an active unconscious process.

The traditional way of explaining this is that the "unconscious mind" is primarily non-verbal. We might instead think of it as demonstrating that verbal interpretations are the responsibility of a separate and independent module from the ones generating various responses.

The need for effective social communication probably predated our sophisticated language capacity, even though they are clearly linked. We are the only animal with our particular type of symbolic communication, but not the only animal with elaborate mechanisms for social cooperation and intra-species communication.

Much of the processing that occurs outside of awareness is organized by emotional tone and personal value rather than semantic content.

Perhaps most importantly, much of the nature of unconscious mental processing appears to involve emotionally significant information. The *cognitive unconscious* might be even better described, at least in part, as the *emotional unconscious*, a term used by New York University Neuroscientist Joseph LeDoux in his 1996 book "The Emotional Brain," from Simon and Schuster. This probably reflects the basic organization of the brain around personal value, rather than a separate unconscious mind. It's just that much of it's operation happens to be outside of our awareness.

It makes evolutionary sense that the earlier functions of primitive social communication and emotional associations in the brain should have developed closely together. Also that later symbolic language intelligence should have been built on top of those earlier functions and have been recruited more for general problem solving than social communication.

In conclusion, it appears that there truly are unconscious mental processes, which are different from but share some of the most interesting features of the Freudian dynamic unconscious.

As we will explore in later chapters, this cognitive or emotional “unconscious mind,” or perhaps more accurately, these **many intelligent mental modules that can function independently and outside of awareness**, appear to be the source of many of our most mysterious and remarkable experiences and mental powers.

Dissociated Mental Processes

One of the most consistent themes underlying the history of the concept of an unconscious mind is that of **dissociation**. This means the notion that a single mind can have multiple streams of thought going on at the same time, either influencing each other or independent of each other. We often talk about dissociated cognition as involving an unconscious stream and a conscious one, but it could just as well mean multiple conscious streams or multiple unconscious streams.

In the 19th century, a French psychiatrist and contemporary of Freud named Pierre Janet proposed that the mind was organized into distinct “*psychological automatisms*” which were composed of a combinations of thoughts, skills, and feelings. These *automatisms* were thought to be normally integrated into a continuous stream of consciousness, but could sometimes function independently of awareness or independently of voluntary control.

This idea was developed further by American psychiatrist and psychologist Morton Prince, who called it “co-consciousness” to emphasize that parallel streams of thought could be either conscious or unconscious.

Some cognitive theorists¹¹⁴ have since noted that Janet's concept of automatism seems to be a forerunner of the modern concept of a cognitive **schema**, which combines declarative and procedural knowledge.¹¹⁵ Recent attempts to understand the phenomena of hypnosis, hysteria, fugue states, and dissociated identity disorder have led to a revival of the ideas of Janet and Prince in the form of theories of separate cognitive modules in the mind.

One of the weaknesses of the original theory of cognitive dissociation was that it seemed to imply that dissociated cognitive streams were independent of each other. Yet careful observation showed that the streams interfere with each other.¹¹⁶ This was taken as evidence against the theory of dissociation. However, modern dissociation theorists such as E.R. Hilgard have argued persuasively that *non-interference is not essential for a useful concept of dissociated mental structures*. What interests modern dissociation theorists most is **awareness** and **voluntary control**, rather than *interference*.

If we can have multiple streams going on at once, what makes one *conscious* and another one *unconscious*? One answer seems to be **whether the stream is linked to our sense of self at a particular time and place** and thus interpreted as an experience (episodic memory).

Once the parts of our memory network associated with our own view of ourselves as an *experiencing agent* are activated, and we have some sense of experiencing at a particular place and time, we become conscious of that stream of thought.

Thus, preconscious processing can go on for a while activating memories without our awareness, until it activates memories containing our sense of ourselves as a conscious agent and a time and place where we perceive and experience to have occurred. **We have to recall or construct an episodic memory in order to have full conscious experience of an event.**

¹¹⁴ Such as in Kihlstrom, John F., (1984). "Conscious, Subconscious, Unconscious: A Cognitive Perspective," in *The Unconscious Reconsidered*, by Kenneth S. Bowers and Donald Meichenbaum (eds.), John Wiley and Sons, pp. 158.

¹¹⁵ Neisser, U. (1976). *Cognition and reality: Principles and implications of cognitive psychology*. San Francisco: Freeman.

Processing that does not have the critical associative pathways for time, place, and self will not be accessible to our explicit conscious awareness. It may still influence, organize, and execute actions, but we are not aware of the influence.

This implies that mental contents can become dissociated from awareness by somehow breaking the links between its **semantic representation** and its **contextual features**. The contextual features (time, place, and self) are what link a memory to our episodic representation of our self, the center of our conscious associative network.

A certain degree of dissociative ability seems to be common to all of us, as seen in dreams and other aspects of sleep. A certain percentage of the population has a greater capacity for dissociation, manifesting in fugue states, multiple personalities, hysteria, obsessions, and compulsions. Some of those with additional dissociative tendencies also have remarkable **control** over their ability to dissociate. Those people, with the ability to regulate their own dissociative processes, seem to be the most remarkable of the hypnosis virtuosos.

Review of Chapter 6

- Hypnosis has long been referred to *unscientifically* as **a way to better access the “Unconscious Mind.”**
- Many modern social and cognitive scientists tend to **reject the concept of an Unconscious Mind**, at least in the Freudian sense of a source of hidden drives, or the Ericksonian sense of a largely untapped source of wisdom and resourcefulness.
- The danger inherent in the concept of an unconscious mind, according to some modern cognitive theorists, has to do with **our tendency to attribute too much significance to experiences and behaviors that appear “unconscious.”** Just because an influence has its origins outside of awareness doesn't mean it is “true” or especially meaningful.

¹¹⁶ White, R.W. & Shevach, B.J. (1942). “Hypnosis and the concept of dissociation.” *Journal of Abnormal and Social Psychology*, 37:309-328.

- The Freudian view of the Unconscious Mind seems to contain more fantasy than reality, but it addresses a number of legitimate phenomena that merit our study.
- For a number of good reasons, many scientists today are very reluctant to lend any credence to the Freudian psychodynamic theory.
- Empirical data is accumulating to support the concept of unconscious processes that can be studied more scientifically today.
- The nature of unconscious processes and their relation to conscious awareness has the potential to reveal the underlying architecture of the human mind.
- Some theorists have postulated dissociated mental processes as an explanation for elaborate processing outside of awareness. However, it appears **that some “dissociated” processes are not truly independent, but consume attentional resources even though we are not aware of them. Other processes are more truly dissociated.** Awareness and voluntary control are more important criteria for dissociated processes than whether they can interfere with each other or not.
- A modernized version of the unconscious mind model is a hierarchical collection of modules that don't necessarily communicate directly with each other, but share a central selection system (believed to rely largely on the frontal lobes of the brain).¹¹⁷
- **“Dissociated” mental processes still appear to be organized hierarchically, even if some of them are outside of awareness. There is no single separate and independent “unconscious mind,” but likely multiple modules that do not require awareness.**
- **These multiple cognitive modules appear to be organized in a *task-driven* manner.**
- Careful experiments with posthypnotic amnesia and posthypnotic suggestion demonstrate **the existence of unconscious processes that are non-trivial, non-automatic, may or may not consume attentional resources, and can include deep semantic processing, especially about social exchanges** and other meaningful contexts.

¹¹⁷ Nauta, W.J.H. (1973). Connections of the frontal lobe with the limbic system. In L.V. Laitinen & R.E. Livingston (Eds.), *Surgical approaches in psychiatry*. Baltimore: University Park Press.

- There are processes that are outside our awareness, but are organized by some higher central processing according to a specific evolutionary adaptive purpose. Some may require attentional resources while operating outside awareness.
- The existence of deep semantic processing outside of awareness reflects **that the concept of subconscious mental contents is a valid scientific one**. These subconscious contents are not simply unattended or weakly encoded, yet are not accessible to conscious awareness. This reflects that our semantic processing module can function without awareness, though it does require attentional resources. This points to a **central selection mechanism**, as well as independent mental modules.
- We tend to **regulate our emotional responses by means of cognitive processes**. When we know what is causing an emotional response, or believe that we know what is causing it, it is usually easier to regulate it. **When we are not consciously aware of a provocative stimulus, it has a greater emotional effect on us**. That is, our emotional response provides a kind of alarm until we understand what is going on.
- Much of the “unconscious” material is actually symbolic communication between non-conscious modules. It appears to be **organized by similar emotional tone rather than by abstract logical connections**. Emotions and other psychological adaptation modules reveal their operation through nonverbal means because they are separate from (and generally earlier than) the language mechanisms in the brain. This means that these nonverbal modules can provide useful insights at times, but the “wisdom” of unconscious cognition is not to be taken for granted. Nor is the assumption that an “involuntary” response comes from some larger source of wisdom.
- We are capable of multiple streams of mental processing at once. These can be either conscious or unconscious. One main difference between a conscious and an unconscious stream is whether it activates our episodic memories representing ourselves as an experiencing agent.
- **If the links to time, place, and self are severed, an idea becomes dissociated from consciousness**. This is something that everyone can do to some extent, but some people do much more easily than others, and some people control much better than others. This appears to be **much easier to accomplish from an experiential mindset than from an operational mindset for most people**.

- One of the talents allowing the most dramatic phenomena of hypnosis is the ability to **deliberately dissociate mental contents into conscious and unconscious streams**, by separating the semantic and episodic components of memory. This allows talented hypnotic subjects to construct elaborate imagery without realizing that they are doing it, to keep something out of awareness, (although they still act as if they know it) or to follow elaborate verbal instructions without realizing why.
- Some of the phenomena of hypnosis indicate **multiple conscious streams** rather than a conscious and an unconscious stream. This is illustrated by the "hidden observer" for example, which knows that we are in pain during hypnotic analgesia. This is also illustrated by "Trance Logic," in which we have a simultaneous awareness of two mutually contradictory things, without attempting to resolve the contradiction. This experience is usually brief, relatively rare, and difficult to pin down, but it illustrates **dissociation as a general skill rather than a distinction between a conscious and unconscious mind**.

Summary of Chapter 6

We register and also process much more sensory experience than we are consciously aware of doing. Some of this information has the potential to influence our cognitive processes and our behavior without our being aware that it is happening. This includes the "click-whirr" automatic responses studied in social psychology as well as the subtle temporary influences studied in subliminal perception experiments. Much of this falls under the category of **unconscious priming**, a temporary influence of meaningful unaware stimuli on our mental state and on subsequent thoughts, feelings, and behavior.

The concept of the Freudian psychodynamic unconscious mind is too filled with pitfalls and erroneous ideas to be used in science, but some of its most abstract concepts are helpful. Our mindset is an important factor in our thinking, feeling, and behavior. Our mindset in turn can be influenced by a wide variety of subtleties in our social context. In addition, we are capable of more lasting influences outside of our awareness, such as **unconscious plans and strategies** as well as emotional associations. Many of these relate to our highly developed social intelligence, or cognition about social exchanges, much of which is pre-verbal.

In the upcoming chapters, we will examine an alternate way of describing unconscious influences on behavior that has a more scientific foundation than the psychodynamic unconscious.

The Story So Far ...

*Hypnosis involves suggestion. Suggestion involves responses that we don't feel responsible for generating. We tend to identify most strongly with the thoughts and feelings we are most conscious of, and feel most responsible for creating. If the you that you most strongly feel yourself to be is not responsible for generating these responses, then who is? This is where we invent the **unconscious mind**, to have something that can be responsible for the behaviors we don't feel responsible for producing ourselves.*

*When someone says that hypnosis commands the unconscious or subconscious mind, they are saying in essence that hypnosis creates conditions where we act **in ways that we feel are outside our direct control**. The concept of the unconscious mind also carries a lot of historical baggage, most of which has a shaky foundation, if any, in psychological science.*

Chapter 7

Trance

The Experiential Mindset and The Elusive Mental State of Hypnosis

Trance is the dimension of hypnotic influence that refers to our *mental state*. The term **trance** is widely considered anathema to scientific study of hypnosis, not only for its spiritualist connotations but also because it implies a “special state” view of hypnosis that is often considered archaic today among scientists. However, the term is often used by practitioners of the art, is immediately recognizable by most people, and as we will now see, does describe real aspects of hypnosis that are not adequately covered by any other commonly used term.

The term trance has long been used to refer to a number of observed conditions (sometimes loosely called "altered states of consciousness") which have certain apparent characteristics in common.

The conditions known as trances resemble sleep in some superficial ways but differ from it in more definite ways; phenomenologically, behaviorally, and physiologically. Examples of names for such conditions include hypnotic trance, ecstasy, catalepsy, somnambulism, forms of hysteria, mediumistic trance, and dissociative states.

The various trance conditions share a common outward appearance of sleep, stupor, extreme fatigue, or profound apathy, while the individual exhibits evidence of intelligence and conscious awareness, or apparent foreign intelligence or altered identity sense. Trances of various sorts may result either from hypnosis, spontaneously, or by a number of other means.

In modern writings, the term **trance** is used to represent a wide variety of different mental states, from cataleptic coma to simple daydreaming. The factor that trances have in common is a partial or total unawareness of the immediate physical environment. In other words, **trance is a particular way of paying selective attention to our environment.**

Consciousness in general seems to have two essential functions:

1. To **monitor** ourselves and our environment, representing perceptions, memories, and thoughts in phenomenal awareness.
2. To **control** ourselves and our environment, initiating and terminating behavior and cognitive activity by acts of volition.

The most important element to have conscious awareness as we think of it is that there be an *agent* experiencing something. Through consciousness, we become aware of events, interpret them, and plan and execute strategies for dealing with them.

Under various kinds of conditions, what we are aware of and the way we interpret our experience can change radically. Various drugs experiences, meditation, hypnosis, sleep, and various other things are in this category of "altered states."

The problem with all of these states is that we don't have any definitive way to define which states are "altered," and how they are altered from our "normal" consciousness. There is no obvious single defining feature or consistent set of features that is necessary and sufficient to have in an "altered state." Therefore there are no clear boundaries between the different states of consciousness. However there is at least one useful approach to defining states of consciousness.

We can think of states of consciousness as *hypothetical constructs, inferred from a network of relationships among observable variables.*

We can observe **induction procedures, overt behavior, physiological responses**, and reports of **subjective experience**. None of these things by itself would be sufficient to give us confidence that we have an "altered state," but our confidence in an "altered state" increases to the extent that we have a convergence between the four variables.¹¹⁸

The use of an **induction procedure** is not sufficient to define an altered state because people respond to the same induction procedure differently, and even the same person can respond differently at different times and places. Also, induction may be completely unnecessary in some cases.

¹¹⁸ Kihlstrom, John F. (1984). "Conscious, Subconscious, Unconscious: A Cognitive Perspective," in Kenneth S. Bowers and Donald Meichenbaum (eds.) *The Unconscious Reconsidered*, John Wiley and Sons, pp. 152.

Reports of subjective experience are extremely useful indicators of altered states, and in contrast to the view held by the behaviorists, they are considered a valid aspect of cognitive science.¹¹⁹ However, subjective reports have certain intrinsic limitations.¹²⁰

Among these limitations are the fact that people sometimes lie, that experimental subjects are often motivated to tell experimenters what they think the experimenters want to hear, and there are reliability problems arising from leading questions. In addition, it may sometimes not be possible to recognize or report a state as "altered" until after the state has terminated, and then sometimes only by inference.

Overt behavior was once considered a more reliable indicator of altered states than subjective reports because, it was reasoned, objective evidence is less prone to errors of interpretation. However, subjects can generally fake behavior just as easily as they can fake a verbal report, so it is probably just as unreliable by itself.

Physiological measures are the obvious alternative, especially measures of body processes that are "involuntary," or considered beyond the control or awareness of the subject. One problem with relying on these measures is that they are usually capable of being manipulated indirectly by the subject. A second problem is that they still require psychological referents to have any meaning, so we end up relying on verbal reports or observable behavior anyway.

When we have reliable reports of an altered sense of monitoring and control, observably different behavior patterns, altered physiology, and clear evidence of an induction procedure, we are relatively confident that an altered state of consciousness is involved.

In describing altered consciousness from subjective reports, we commonly observe such dimensions as:

- the width of attention focus (broadly taking in much of the surroundings, or narrowly focused on a select subset),
- whether attention is focused inward (on imagination) or outward (on something external to us),
- how awake or aroused we are (activation of the sympathetic nervous system and readiness for concerted effort),

¹¹⁹ Ericsson, K.A. & Simon, H.A. (1980). "Verbal reports as data." *Psychological Review*, 87:215-251.

¹²⁰ Nisbett, R.E. & Wilson, T.D. (1977). "Telling more than we can know: Verbal reports on mental processes." *Psychological Review*, 84:231-259.

- and whether we are consciously influencing our experience, or following along with it passively (as in dreams).

The "trance" we most commonly talk about occurring during hypnosis is usually very narrowly focused on a particular aspect our environment or our imagination, focused inward, low sympathetic arousal, and following along with the voice of the hypnotist.

This makes hypnosis very similar to the state of consciousness we call dreaming, or even daydreaming, in most parameters. The main difference is that in hypnosis we are following along closely with an external guide or an imagined guide rather than just experiencing a spontaneous fantasy. Also, there is a sense of compulsion in hypnosis that is not found in dreaming.

Perhaps the most interesting commonly observed aspect of trance states is the appearance of **automatisms**. Automatisms are actions performed without a sense that we are consciously controlling them. They can be simple movements, or they can be complex behaviors such as communicating through speaking or writing. Some people during trances will even act out a role, as if they were another person.

This kind of experience is particularly common in states where we are also at least partly unaware of our immediate physical environment, so the two experiences are often linked. The weakness of this view of trance is that automatisms can also occur when we are given instructions for alertness and when we are engaged in vigorous muscular activity. This is the paradox of the "alert/awake trance" which we will return to later.

Many of the phenomena associated with hypnotic suggestion have a truly "involuntary" aspect to them, at least for some talented subjects, functioning as automatisms.

Similarly, hypnotic amnesia is *dissociative* in nature, we cannot retrieve memories that would be available under normal conditions. This appears to involve a split between episodic and semantic components of memory.

The information from the unavailable memory still influences our ongoing behavior, but we cannot explicitly recall it. This and other phenomena of hypnosis seem to involve a **splitting of information processing into multiple parallel streams, which may either be conscious or unconscious**. The fact that these parallel streams can influence each

other does not negate the usefulness of the concept of dissociated awareness.¹²¹

The origins of the idea of **trance** are lost in the mists of time. The idea probably comes from the ancient tribal practices of religious healing sometimes known today as **shamanism**. That term came from Mircea Eliade's study of the practices of certain Siberian tribal cultures. Shaman were frequently chosen for their demonstrated capacity to slip in and out of trances. Shaman were believed to leave their bodies during these trances, and to commune with the spirit world.

Trances are thus associated in spiritualist practices with the soul leaving the body, which is how stupor and automatism are explained. Modern occultists and writers who appear in the "New Age" section of bookstores often also identify with the tribal shaman.

Shamanic trances commonly involved *convulsions* and various erratic behaviors resembling a dramatic spirit possession. Over time, this kind of unusual behavior was given three different explanations; *epilepsy*, *hysteria*, and *possession*.

The ancient Greek physician Hippocrates identified the convulsive disorder of *epilepsy*, partly in an attempt to de-mystify the previously sacred condition that produced the shamanic convulsions which were the mark of an ancient tribal medicine man.

People who were not suffering from epilepsy but rather emotional fits were assumed to be suffering from something identified as *hysteria*, then considered a disease of the uterus in women (such as a uterus wandering through the woman's body in search of a baby). The persistence of apparent foreign personalities or identity senses in trance caused the additional idea of *spirit possession* to remain as well.

A relationship between what was known as *hysteria*, the human imagination, excitement, isolation, and unusual responsiveness to suggestion was known from very early times. It was called by various names such as 'sympathy' and 'contagion.' Various epidemics were blamed on *mass hysteria*, where large numbers of people behaved in ways that were suggested to them.

Early hypnosis theorist Pierre Janet believed that a *pathological hysteria* was responsible for hypnotic suggestibility. The notion of suggestibility

¹²¹ Kihlstrom, John F. (1984). "Conscious, Subconscious, Unconscious: A Cognitive Perspective," in Kenneth S. Bowers and Donald Meichenbaum (eds.) *The Unconscious Reconsidered*, John Wiley and Sons, pp. 185-197

eventually overshadowed the epileptoid aspect. Epilepsy came to be considered just one of a number of conditions that could be mimicked by means of hypnotic suggestion.

There may be reason to believe that there is yet some indirect relationship between the nerve cell sensitivity in epilepsy (the theory of **kindling**) and the conversion symptoms of hysteria, and therefore possibly the psychosomatic responses in hypnosis. This is highly speculative and may not be needed to explain *pseudo-epileptic* (psychogenic, rather than neurologic) convulsions occurring as the result of suggestion.

In some people, particularly after repeated hypnotic inductions, *hypnotic trance* behavior may begin to occur spontaneously or can be reproduced rapidly at will. **Spontaneous hypnotic trances** bear some resemblance to *mediumistic trances*, and there are indications that some of the famous trance mediums, such as Edgar Cayce, used procedures resembling hypnosis at times to help produce their trances, until they began to occur spontaneously. Trance behavior may give the appearance of a *foreign identity sense* or *foreign intelligence*. This is the peculiar **trance** referred to by *spiritualists*.

Trance behavior in the spiritualist sense may sometimes impersonate living or deceased personalities, and this is a large part of the structure on which the doctrines of spiritualism (and earlier religious and magical beliefs about spirit possession) depend. Most **trance personalities** are indistinct and possess little or no knowledge or attitudes that are unfamiliar to the subject.

Sometimes, not infrequently, the trance personality is very distinctive and seems to be a foreign intelligence to the subject. There does not appear to be any reason to assume that all trance personalities necessarily involve an intentional deception or conscious play acting on the part of the subject. Neither does there appear to be good reason to believe that trance personalities involve any kind of discarnate intelligence. The modern concept of **dissociation** is commonly cited in the description of trance personalities and similar phenomena. This phenomena also lends credence to the dramatic role playing theories of hypnosis.

Traditionally, we know trances in general by two aspects of behavior:

1. **By subjective state reports.** Hypnotized people report a unique sense of not consciously controlling their own movements, and they report amnesia for events that took place during hypnosis, especially if asked to forget the events. This definition is preferred for research purposes because it better distinguishes hypnosis from other things.

2. By a distinctive **outward appearance** and subtle responses. Hypnotized people look "entranced," such as a defocused gaze and vacant facial expression. By this definition, people are "in trance" periodically during the day whenever their attention shifts inward and they have a momentary daydream. The basis for this definition is traditional, going back to the way hypnosis has long been practiced as an art.

How does trance feel ?

As with the external appearance of trance, we face individual differences in subjective state reports. Some people find hypnotic trance an unremarkable condition, some consider it a condition of focused awareness, and others find it a very pleasant, mildly euphoric relaxed condition. One common misconception is that hypnosis automatically leads to a form of sleep, or makes people feel as if they were sleeping. People typically remain awake and fully conscious during hypnosis.

There is a certain consistency in some observations. Subjects consistently report a distinct qualitative shift in the focus of their attention. The individual is focused inwardly (in most cases, at least for part of the induction), and is highly focused on a narrow range of pertinent cues. The narrow focus of attention on our own sensations seems to be the most important aspect of induction, since it is common to both relaxed and alert hypnosis.

There are other commonalities as well, which are sometimes collectively called **trance logic**. These relate to our willingness to accept seeming logical inconsistencies in our experience that would otherwise not be acceptable. In particular, reality and suggestion are frequently opposed during hypnosis, while we are aware of both at the same time. This discrepancy is sometimes referred to as **incongruence**.¹²²

The manner in which we resolve incongruence is highly individual, depending upon the particular schemata in effect at the time, but all hypnotized subjects show certain similarities.

The **depth** of our hypnotic trance is a measure of our subjective involvement in the suggested events, vs. our perception of reality. This in turn depends not only on the level of hypnotic talent we possess, but also on the time taken to induce hypnosis, the match between suggestions and the specific skills of the individual, the level of motivation, the degree

¹²² Tellegen, Auke, (1978-1979). On measures and conceptions of hypnosis. *American Journal of Clinical Hypnosis*, 1978-1979., 21, 219-237.

of rapport with the hypnotist, and various other social aspects of the situation.¹²³

What does a Hypnotic Trance look like ?

In general, we have as yet a very unsophisticated understanding of altered states of consciousness, relying mostly upon such crude measures as CNS arousal, muscular tension, heart rate, and respiratory rate. An examination of consciousness medically involves a series of neurological tests and tests for grossly distorted cognition, perception, or memory processes. By these types of measures, hypnotic induction procedures result in very subtly (if at all) altered consciousness.

The outward physical appearance of unusual responsiveness to suggestion is not always consistent, or is recognizable only with a great deal of skill at observing subtleties. Trance behavior apparently varies, but common factors include¹²⁴ :

- *A general stillness or catalepsy*, along with muscular relaxation and verbal inhibition, and a time lag in responding to suggestions,
- *Pupil dilation*, diminishing of blink reflex, eyelid fluttering, eye fixation, lessening of eye tracking movements, and spontaneous eye closure,
- Respiratory changes suggestive of *relaxation and parasympathetic activity*, breathing from the stomach with a slower and more regular rhythm,
- Slowing of the cardiac rate and pulse,
- Smoothing and flattening of the facial muscles around the cheeks,
- Diminishing of orienting responses to external noises,
- Changes in facial coloration, either lighter or redder,
- Spontaneous behavior in response to suggested ideas.

In other words, the 'trance' subject is most often **still and relaxed, with pupils dilated**, especially during 'deep trance' phenomena, but otherwise *manifests highly individual response*. The subject can be

¹²³ Hilgard, E.R. (1981). Hypnotic susceptibility scales under attack: An examination of Weitzenhoffer's criticisms. *International Journal of Clinical and Experimental Hypnosis*, 1981, 29, pp. 24-41.

¹²⁴ Gilligan, Stephen G., (1987). *Therapeutic Trances : The Cooperation Principle in Ericksonian Hypnotherapy*, pp. 125, Brunner/Mazel Inc.

relatively active and have EMG (muscle tension) readings representative of waking arousal, yet show other physiological signs of relaxation and CNS depression.

Another generalization we can make is that the hypnotized subject does not quite resemble the fully awake subject in all behaviors, and cannot quite simulate normal wakefulness.¹²⁵

In medical terms, the alterations of consciousness seen in hypnosis fall into the quagmire of "dissociative processes." In general, these processes interest the neurologist not at all, and the psychiatrist has only a very sketchy understanding of them, based entirely upon their clinical experience. A theoretical foundation for dissociative processes barely exists today, unless we include the questionable foundation provided by Freudian psychoanalytic theory.

The Paradox of Alert Trance

There is also the theoretical enigma of **alert trance**, which refers to hypnosis procedures performed without a classical passive relaxation process. These produce the same kind of sense of involuntariness and the capacity for amnesia, but they are very different in other ways.

The "alert trance" very likely involves an entirely different physiological mechanism, though leading to the same or similar end result^{126, 127}.

One theory is that this enigma results from the multi-part nature of relaxation, having both cognitive and physical components, which are often practically inseparable. Thus, '**cognitive relaxation**'¹²⁸ may coincide with somatic non-relaxation, in the **alert trance** subject, permitting very different appearances for equally "cognitively relaxed" subjects.

The person in an "alert trance" shares the defocused gaze and vacant facial expression of the relaxed hypnotized person, but their muscle

¹²⁵Reyher, (1973), "Can hypnotized subjects simulate waking behavior?" *American Journal of Clinical Hypnosis*, 16, 31-36.

¹²⁶Edmonston, "Anesis." (1991), In Lynn and Rhue (eds) *Theories of Hypnosis*, Guilford Press

¹²⁷Hilgard, J.R., (1974), "Sequelae to hypnosis," *International Journal of Clinical and Experimental Hypnosis*, 22, 281-298.

tension is very different, and the instructions they are given emphasize alertness and attention rather than relaxation and sleepiness.

Physiologically, this distinction refers to relaxation of the muscles (e.g., EMG, electromyogram) versus other measures of generalized arousal, such as skin conduction and spontaneous fluctuations in the electrodermal response (EDR). There can be muscular activity without a corresponding generalized CNS arousal, and this situation occurs during some hypnotic procedures.

The converse also occurs during hypnotic procedures, muscular flaccidity accompanying generalized CNS arousal. This is one of the most well known **dissociations** found in hypnosis, that between muscle control and alert attention. This also illustrates why we cannot consider **trance** to simply reflect our overall level of arousal.

More specifically, all forms of hypnosis, both relaxed and alert, involve a modification of selective attention, even though they obtain this modification differently.¹²⁹ During all forms of hypnosis, talented hypnotic subjects are able to switch their attention toward and away from either internal or external cues as requested by the hypnotist. Less talented subjects are not as flexible in redirecting their attention in hypnosis.

The capacity for the hypnotic subject to narrow their attention to cues selected by the hypnotist enables them to attribute special status temporarily to the hypnotist, who can guide their thoughts and actions to some extent, and regulate their emotions. **What is special about all of the forms of hypnotic trance are not relaxation instructions or a sleep-like appearance, but a narrowly focused attention guided by the signals and implications of the hypnotist.**

In summary, the outward appearance of hypnotic trance is unremarkable and highly variable, sometimes taking on a passive nature and sometimes an active or alert nature. There appear to be subtle clues much of the time that someone is “in trance,” even when active and alert, but there is no reason to believe that these are entirely reliable.

As we shall see, the key to the distinctiveness of the hypnotic state, if there is such a thing, is in subjective experience, not externally

¹²⁸Davidson and Schwartz, (1976), "The psychobiology of relaxation and related states : A multi-process theory." in D.I. Mostofsky (Ed.), *Behavior control and modification of physiological activity*, (pp. 399-442). Englewood Cliffs, NJ: Prentice-Hall

¹²⁹ Meszaros, I, & Banyai, E.I. & Greguss, A.C. (1981). "Evoked potential, reflecting hypnotically altered state of consciousness." In G. Adam, I. Meszaros, & E.I. Banyai (Eds.), *Advances in physiological sciences: Vol 17. Brain and behavior* (pp. 474). Budapest: Pergamon Press/Akademiai Kiado.

measurable or observable markers. Both active/alert and relaxed forms of hypnosis are characterized by a subtle synchronization of the hypnotized person with the verbal and nonverbal communications of the hypnotist.

The degree to which the defocused gaze and vacant expression are an essential part of trance is difficult to determine. That kind of "trance" seems to involve an attentional and cognitive shift that is often attributed to hypnosis. It may more usefully be considered a naturally occurring periodic fluctuation of brain function instead.

The aspect of "trance" that is more unique to hypnosis as we normally think of it is the way we selectively attend to and follow along with the cues of the hypnotist. This does not necessarily require the vacant expression or defocused gaze, or a sleep-like appearance.

Different Kinds of Trances ?

Trance is not only a term used for a certain kind of physical appearance and a particular kind of focus of attention, but also to describe the condition of subjects undergoing various mediumistic experiences, automatism, and other phenomena that some psychologists refer to as 'dissociative.' The term **dissociative** means that something about the individual's personality (or awareness) appears split off from the usual response patterns to the environment. In common usage, however, 'trance' tends to have connotations of somnambulistic stupor, or even evokes a distinctly supernatural atmosphere.

Considered in this light, trance can be a very misleading term for what is going on in hypnosis, since it is not necessarily a sleep or stupor, nor do the happenings under hypnosis necessarily require supernatural explanations. However 'trance' is so ubiquitous in even scientific literature that it serves us to be familiar with it.

Alternatives to "trance" that have been used or suggested have included **dissociative state** (although that is probably too generic and refers to several different kinds of things), and **anesis** (relaxation, although this is far from theory-neutral).

Of course some theorists feel that there is no need for a label to describe the condition of enhanced suggestibility and dissociative phenomena, because they believe that these things result from situational demands, not anything unique to hypnotic procedures.

One common tendency is to assume that our condition is a “trance” whenever the experience of non-volition happens. Examples would include being absorbed in watching television, driving along a monotonous stretch of road, or performing some habitual task absentmindedly. This would also apply to people with “hysterical” or “conversion” disorders.

It is not far from this to extrapolate that we are always “in a trance” of some sort, and some theorists actually claim that this is true. Along these lines, many hypnotists insist that we ‘slip in and out of hypnosis all day long.’ This odd notion, combined with the highly pluralistic nature of hypnotic phenomena, would require us to define different “trances” in different people at different times, with different characteristics.

Perhaps some theorists can build a workable psychological theory from the idea of “trances people live” but at the moment it appears to violate the principle of parsimony and to add more confusion than clarity. This idea requires a better developed scheme for uniquely describing a “state of consciousness” than is presently available.

The more compelling commonality between the various “trances” is that we do not understand much about any of them. We can not yet describe them in detailed neurobiological terms, nor do we know much about their role in human life. In most cultures, people deliberately alter their consciousness as part of social or religious rituals, and these are sometimes called “trances” and even compared to hypnosis.

Obviously, our ‘state’ in some sense varies from moment to moment, since our personal experience and behavior change from moment to moment. To what extent is it useful scientifically to define such changes in a particular case (such as hypnosis) as a unique state of consciousness or even a trance? This is far from a trivial or even adequately phrased (much less solved) problem.

To simplify the discussion for now, we might think of the old notion of trance (as a somnambulistic condition necessary for hypnosis) as being archaic. Instead, we should think of trance as experienced hypnosis practitioners use the term today. The subjective experience of trance is considered to have the following dimensions, although generally only a subset of them are observable at any one time, and different people may have different combinations of talents for these various dimensions¹³⁰ :

1. **Experiential absorption of attention** : The normally momentary experience of being absorbed and fully immersed in an experience

¹³⁰ Gilligan, Stephen G., (1987). *Therapeutic Trances : The Cooperation Principle in Ericksonian Hypnotherapy*, pp. 46-59, Brunner/Mazel Inc.

becomes extended and amplified such that the experience can resist external distractions. Highly hypnotizable people are more resistant to distractions during nonanalytic attention tasks such as meditation¹³¹. Although this correlation is replicable, it does also require meditation practice to exhibit.¹³² Highly hypnotizable people are also capable of redistributing their attention more easily and flexibly than less hypnotizable people.

2. **Effortless expression** : Actions and thoughts seem to flow in and out of awareness without conscious effort to direct the flow. Actions and thoughts may be in accordance with suggestions, or may be spontaneous, depending on the circumstances.
3. **Experiential, non-conceptual involvement** : “Primary process” thought predominates, with little critical thinking, verbalizing, or abstract conceptualizing, and more concrete and sensory-based imagery.
4. **Willingness to experiment** : This is sometimes referred to as a dimension of compliance, or secondary suggestibility and implies a willingness to cooperate with unusual suggestions or ideas, or to take on unusual roles.
5. **Flexibility in time and space relations** : The sense of time can be very different, people can imagine themselves going forward or backward in time, or having time expand or compress. They may also hallucinate significant changes in spatial relationships.
6. **Alteration of sensory experience** : This is sometimes considered an aspect of primary suggestibility, the ability of a person in trance to experience significant distortions in sensory perception, especially visual and auditory.
7. **Fluctuation in involvement** : The so-called “depth” of a trance state is observed to vary frequently.
8. **Motoric/verbal inhibition** : People in trance can move or speak if they want to, but they generally do not want to, as they consider such activities irrelevant to the more interesting mental experience they are having.
9. **Trance Logic** : People in trance often do not find anything unacceptable about being in two places at one time or vividly exploring fantasy

¹³¹ Van Nuys, D. (1973). “Meditation, Attention, and Hypnotic Susceptibility: A Correlational Study.” *International Journal of Clinical and Experimental Hypnosis*, 21: 56-69.

¹³² Spanos, N.P., Stam, H.J., Rivers, S.M., & Radtke, H.L., (1980). “Meditation, expectation and performance on indices of nonanalytic attending.” *International Journal of Clinical and Experimental Hypnosis*, 28: 244-251.

situations which violate real world constraints. This reflects the degree to which we are willing to play along with imagined experiences during hypnosis.

10. **Metaphorical processing** : This refers to the tendency to relate communication in a self-referential manner, such that things happening to other people are also happening to them.
11. **Amnesia** : There is a common experience of forgetting some or all of what happened during trance once the trance ends. This is strongly linked to suggestion and to expectations of what the person believes they should remember or forget.

These characteristics of “trance” are contained in what I call the **experiential focus mindset**. They provide a unique context for exploring consciousness and promoting new experiences.

Attentional Focus and the Flow State

One of the primary variables used to describe our state of consciousness is **attention**. At any given moment, we focus our attention on some things, and let other things fade into obscurity. We are usually aware of some things internally and some things externally. Our attention is generally extremely mobile, shifting from one object to another with great ease. The main thing that makes one subjective experience of consciousness different from another is how we are focusing our attention.

One interesting and potentially useful theory emphasizes that this use of attention is more than just a momentary selection of stimuli to which we are attending. We not only focus attention differently from time to time, but we also bring different sets of cognitive resources to bear, or perhaps different brain modules.

The more we narrow our focus at any given moment, the more we tend to identify with a particular set of memories, values, and beliefs. This is part of why our thoughts and behaviors are so rigid under extreme emotion, and part of how we get locked into stereotyped patterns of thought that hamper creativity. The most elaborate version of this theory calls this kind of attentional shift a “**trance**,” and sees it as representing the basic

psychological processes by which experience is generated and maintained.¹³³

This view of attention comes very close to what most people mean by the even more vague term, **consciousness**. This refers to the dynamic process of picking what we are perceiving most clearly from the variety of stimuli bombarding our senses and arising from our inner thoughts and imagery. Add to this selection of what we are perceiving a sense of being part what we perceive (**identification**), and we have the basic processes for generating subjective experience.

For example, one of the main differences between the ongoing subjective experience of a person engaged in light conversation and that of a person engaged in hypnosis is that in hypnosis, their attention can be more easily brought to bear on a more narrowly specified object. In other words, hypnosis can be compared to a game where we learn to alter our attention in specific ways. This same sort of shift in the way we pay attention is at the heart of why we can solve specific kinds of problems better under some conditions than others.

Since hypnosis involves learning to focus attention more specifically, it is sometimes theorized that hypnosis can help improve creativity. The problem with this theoretical possibility is that most hypnosis is not used to teach us to use our attention more effectively, but to focus on external ideas.

Hypnosis uses relaxation and suggestion to help make best use of our imagination, but it uses an external stimulus, the voice of the hypnotist, to help structure our experience. This is why other, more self-directed (inner-directed) practices, such as meditation and cognitive centering techniques, are more likely to help develop the skills required to improve creativity. Effective use of hypnotic techniques for problem solving requires two creative problem solvers, rather than one.

An attentional condition in which each of us is highly inventive and extremely efficient at applying our existing practiced skills is the “*flow*” or “optimal performance” state. Under these conditions, we are aware of both our situation and our own body sensations, although in a detached sense.

In the “flow” state, we are best able to respond with intelligent decisions without the perils of “analysis paralysis” or hypervigilant panic. The idea is to cultivate an ability to become a detached observer of both ourself and the external cues of the situation. *Flowstate* also helps reinforce

¹³³ Gilligan, S.G., (1987). *Therapeutic Trances: Cooperative Principles in Ericksonian Psychotherapy*. New York: Brunner/Mazel.

itself, providing an intrinsic reward for performing well, because it is mildly euphoric. This notion comes from decades of careful research by University of Chicago psychologist Mihaly Csikszentmihalyi.¹³⁴

There are some things we do very well under conditions of *flow*, but others that we don't do as well. We are able to apply skills we have already mastered in an inventive way during flow, but we are less able to critique new ideas or decide between similar alternative courses or to make realistic judgments that require some careful thought.

Most descriptions of flow render it largely indistinguishable from the conditions that some hypnotherapists call **therapeutic trance**, and which has been meaningfully compared to various states described in Eastern meditative practices.

The point of the flow state in problem solving is *not that it is more creative by itself, but that it can be used as part of an extremely powerful problem solving process*. The unique qualities of flow encourage us to be more willing to experiment with new ideas, to think without censoring our thoughts through internal dialog, and to make new associations between things we would otherwise not think to associate.

These conditions make it easier for us to cross between different cognitive domains, but they make it more difficult to apply a single cognitive domain in a focused way.

Since the experience of *flow* is cross-cultural, there is much of a mystical nature that has been said about this particular state. However the fundamental idea is valid, that both our intellectual and physical performance vary in different mental and emotional states, and that this can either work to our benefit or to our detriment.

The flow state encourages a kind of spontaneous thinking that is not usually present to a great extent when we are focused on goal-oriented tasks. Ideas are transformed in a spontaneous way into images, sensations, cognitions, behaviors, and so on, independently or even unknown to our conscious awareness. Content is ignored, and **associations are made freely based on similarity relations**, in the same manner we find in dreams.

A lot of the mystique around hypnotic suggestion is simply a reflection of this **ideodynamic** or "automatic" quality of the flow state. Ideodynamicism or automatism occurs under many conditions, but

¹³⁴ Csikszentmihalyi, Mihaly, (1990). "Flow : The Psychology of Optimal Experience," New York: Harper & Row.

appears to be most intense and most consistent in the flow state (which is a waking condition), and during dreaming and daydreaming.

The advantage of flow over dreaming is that we have a better opportunity to influence the process and to record it during flow than when we are asleep.

To use flow most effectively in problem solving, it should be cultivated for the phase of problem solving where we need to generate new ideas, or break existing mental sets to create new breakthroughs. There must be a way of capturing the insights gained during the flow state, and a process of understanding, evaluating, and refining the new ideas. The content-free associations arising during flow need to be brought under the abstracting powers of our conscious awareness to make use of them in a real solution.

The best known qualities of *flow* make it clear that it shares a great deal in common with *awake/aware* trance, and may even be the same state in some sense:

- The apparent suspension of supervisory attention, permitting “automatic” (well-practiced) movements to be performed with minimal interference,
- Self-regulation of emotional arousal, permitting ongoing tuning of emotional state and tension level,
- Intense attentional focus, able to alter subjective experience and ignore distractions,
- Positive preoccupation with the situation or event,
- Sensation of effortlessness,
- Sense of determination and commitment

Flow requires an adequate challenge level to push us to do our best, without inducing fear of failure. It also requires us to have perfected our skills. This state permits us to make best use of the skills we have already mastered, it does not provide us with skills we have never acquired !

Flow is facilitated by intentionally focusing sharply on the task at hand, while the mind is calm (cortical arousal is low). This is initially difficult, because we are usually so concerned about performance that our mind is not calm. Or, if our mind is calm, we tend to have difficulty focusing

sharply on the task at hand. *Flow* occurs in the delicate and narrow zone between boredom and anxiety.

The essence of *flow* lies in what psychologists call **imaginative absorption**. Note that the capacity for imaginative absorption varies from person to person, but it can be developed somewhat by activities which encourage open-mindedness to new experiences, adventurousness, and fantasy. Most of our capacity for imaginative absorption seems determined largely by our early childhood experiences, however.

Absorption technically may be defined as the proclivity for episodes of *full commitment of available perceptual, motoric, imaginative, and ideational resources to a unified representation of the attentional object*.¹³⁵ Absorption is different from the normal state of concentration where we are fairly resistant to distractions. Imaginal absorption of the type that some believe is central (or at least useful) to hypnosis, and possibly to the *flow* state, is so intense and so narrow that the rest of the environment becomes irrelevant and fades into non-existence.

Absorption can be directed internally, to a fantasy or to body sensations, or it can be directed externally, to monitor the details of the environment.

The main thing to recognize about absorption is that it precludes the internal chatter that we are used to experiencing almost continuously. In imaginal absorption, we are not telling ourselves a narrative about what is happening, we are directly experiencing and responding to the object of our attention. This might be called an **experiential (vs. operational) mindset**.

The Japanese call this *mushin*, or “no-mind,” and it is an important quality sought in expert-level martial arts and in Zen meditation. When a martial artist is capable of extended periods of *mushin*, they are said to be extraordinarily alert, and this is referred to as *zanshin*, or “continuing mind.” The prototype for *zanshin* is a predatory animal pursuing its dinner with absolute focus of concentration.

The reason why imaginative absorption helps provide a useful state for creative thinking is that it requires us to suspend critical judgment (our so-called internal censor) deliberately. This permits us to see a situation in a completely new way, to break out of prior limiting perspectives. Contrary to some popular accounts of this *flow* state, it is not a

¹³⁵ Tellegen, A. & Atkinson, G. (1974) “Openness to absorbing and self-altering experiences (absorption), a trait related to hypnotic susceptibility.” *Journal of Abnormal Psychology*, 83, p. 274.

relinquishing of the thinking brain, but actually a special application of the thinking brain.

The neocortex is made to continually monitor our own emotional state as a detached observer, rather than allowing ourselves to get caught up in the emotions inspired at each moment. We are still using our thinking brain, but not with continual chatter. Rather, we are allowing ourselves to use fantasy to create a new image that will help solve the problem.

With this cognitive mode, we provide ourselves with the widest possible range of choices at any given moment, rather than locking into a particular set of beliefs, values, and memories, as occurs in our more operational mode of cognition. We are using the “search” capacity of the brain and **our capacity for fast response to uncertain conditions without analysis.**

It is an interesting paradox that the *flowstate* of expanded awareness is usually brought about by exercises intended to narrow our awareness, to fixate on a very small target.¹³⁶ Another paradox is that we enter a “scanning” mode of cognition in various very different kinds of situations, such as confusion and fixated attention (so long as there is also an expectation of changing our awareness).

What are we measuring ?

For hypnosis and hard science, this is where “the rubber meets the road.” We need to know what exactly the brain is doing during hypnosis. The fact that this is a rather difficult question should not itself lead us to be overly skeptical about hypnosis, because there are few areas of complex human behavior that we can describe in exact physiological terms. Hypnosis has an important language component, and depends at least partly on our thinking processes, and we simply don’t have a comprehensive understanding of the physiology of language and thinking processes at this point in science.

There are three main categories of questions we are asking when we research the physiology of hypnosis:

1. **Individual differences** -- What is different between the physiology of a highly suggestible person and a less suggestible person ?

¹³⁶ Wolinsky, Stephen, Ph.D. (1991). “Trances People Live.” CT: The Bramble Company. pp. 42-49

2. **State changes** -- What is different between the physiology of a person when they are highly responsive to suggestion, and the physiology of that same person when they are less responsive to suggestion, and how stable is this change ?
3. **Interactions** -- How do individual differences and state changes interact; do different state changes occur in highly suggestible vs. less suggestible people ?

Hypnosis and Relaxation

There were a great many experimental and clinical studies done to try to determine what might be unique about hypnosis, as opposed to other kinds of situations (e.g. hypnotic simulators or people simply being motivated to comply with the hypnotist).

Outward behavioral signs and virtually every physiological measurement reported in hypnosis differ seemingly either inconsistently or not at all from the usual waking state of consciousness, and *those that vary seem to vary in a way suggestive of relaxation.*

Years of careful analysis by a number of researchers were mostly fruitless in turning up any reliable physiological correlates of hypnosis. The few that were found turned out to be either (1) related to the relaxation associated with the induction (most inductions, but not all, involve physical relaxation); or (2) an obvious result of responding to a particular suggestion. *The mechanism itself responsible for the observed suggestibility* was assumed to some degree unique to hypnotic trance, and there was no obvious biological basis for identifying such an altered state.

Most hypnosis is mostly relaxation

Defined as **hypersuggestibility**, the concept of hypnosis would be very difficult to pin down to a single experimental situation. At least one theory of hypnosis considers it equivalent to a form of relaxation. Yet, in some of the conditions popularly identified as hypnotic, there is little or no muscular relaxation. Also, in virtually all situations we consider hypnosis, there is a high degree of autonomic arousal because we are generally paying focused attention during hypnosis.

This has gradually rendered the relaxation explanation of hypnosis unlikely. Relaxation goes with most hypnotic inductions, but it is not the cause or even an essential factor in responding to suggestion, either in the laboratory or in a clinical setting. Nevertheless, relaxation so often

accompanies hypnosis that **we must consider it an essential control condition** when we search for biological markers of hypnosis. When we say that something is a result of hypnotic suggestion and doesn't occur in other conditions, we must include relaxation in those other conditions in order to properly isolate the effects of suggestion.

Comparison of various methods with regard to both objective measurements and subjective reports indicate deep relaxation accompanying some hypnosis (but not all hypnosis). Hypnosis-like suggestibility is apparently not limited to relaxed states

Physiological changes from ordinary wakefulness are demonstrated by the consistent drop in basal skin resistance found at the time hypnosis ends. Some studies also report a rise in BSR during hypnosis, and some do not.^{137,138,139} Basal skin resistance is inversely related to arousal, so this result implies that there is a consistent finding of a dramatic rise in arousal when hypnosis ends, but not necessarily always a drop in arousal during hypnosis.

This is a possible indirect indication that the hypnotic subject's physiology recognizes hypnosis as a condition distinct from wakefulness in some sense, yet not consistently equated to relaxation or sleep.

Edmonston¹⁴⁰ compared neutral hypnosis (hypnotic 'state' without further suggestions) with nonhypnotic controls and nonhypnotic relaxation subjects, and found that in all measures taken but one, neutral hypnosis did not vary from relaxation, and both varied from the controls. He discounts a small cardiac rate anomaly. Hypnosis/relaxation physiological changes observed included :

1. Decrease in heart rate (sometimes varied in hypnotic case)
2. Decrease in respiratory rate
3. Increase in alpha band EEG power
4. Increase in theta band EEG power
5. Decrease in metabolic rate

¹³⁷Barber and Coules, (1959), "Electrical skin conductance and galvanic skin response during 'hypnosis'" *International Journal of Clinical and Experimental Hypnosis*, 7, 79-92

¹³⁸Stern, Edmonston, Ulett, and Levitsky, (1963), "Electrodermal measures in experimental amnesia." *Journal of Abnormal and Social Psychology*, 67, 397-401

¹³⁹Tart, (1963), "Hypnotic depth and basal skin resistance." *International Journal of Clinical and Experimental Hypnosis*, 11, 81-92.

¹⁴⁰Edmonston, W.E., (1981), "*Hypnosis and relaxation : modern verification of an old equation*," N.Y. : Wiley.

6. Decrease in systolic blood pressure
7. Increase in peripheral blood flow
8. Increase in electrodermal basal skin resistance
9. Decrease in electrodermal spontaneous fluctuations
10. Decrease in reaction time
11. Eye movements (SEM) present

Just how consistent is the physiology of relaxation between different techniques ? In one study of the effectiveness of different relaxation techniques¹⁴¹, subjects were monitored for respiratory rate, pulse rate, blood pressure, skin resistance, EEG activity, and muscle activity. They were monitored during the alert state, meditation (TM or simple word type), hypnosis (relaxation and task types), and simple relaxation. Subjects gave a verbal comparative evaluation of each state.

As expected, the results showed significantly better physiological relaxation responses for the intentional relaxation states (relaxation, relaxation-hypnosis, meditation) than for the alert state. However, there were no significant differences between the different relaxation states except for the measure "muscle activity" in which meditation was significantly better than the other relaxation states.

Overall, there were significant differences between task-hypnosis and relaxation-hypnosis. That is, the physiology depended more on the activity of the individual than on whether there was hypnosis.

No significant differences were found between TM and simple word meditation.

For the subjective measures, relaxation-hypnosis and meditation were significantly better than relaxation, but no significant differences were found between meditation and relaxation-hypnosis. People "felt" more relaxed when meditation or hypnosis was used to help than when they simply tried to relax without those methods. However, the specific method used didn't seem to make much of a difference in how relaxed they felt.

We can see in general that most techniques involving relaxation produce roughly similar states of relaxation, and that simply trying to relax is less

¹⁴¹Morse, Martin, Furst, & Dubin, "A physiological and subjective evaluation of meditation, hypnosis, and relaxation," *Journal Psychosomatic Medicine*. 39(5):304-24, 1977 Sep-Oct

effective. This leads to the conclusion that relaxation involves a single kind of general response that can be triggered by various methods. This is the same conclusion reached by Harvard Cardiologist Herbert Benson, who coined the phrase “relaxation response” for this.

Trance as distinct from sleep or stupor

The most common *neurological* theories of hypnosis over the years as a *form of partial sleep* have been based on several observations:

1. the superficial resemblance of a classically induced subject to a near-sleeping person
2. the ease with which a deeply hypnotized subject will fall off to sleep on suggestion or if hypnosis is not explicitly ended
3. various drugs that induce sleep-like or stuporous states can produce some of the same characteristics as hypnotic trance
4. highly ambiguous studies showing similarities between brain wave patterns during sleep and those during hypnotic induction.

It has been very consistently determined that the physiology of hypnosis has nothing at all to do with sleep. During hypnosis, our physiology is indistinguishable from waking, and has none of the biological markers of sleep.

Measurements attempted included a number of famous early experimental studies in the 1930's, on such variables as EEG measurements, cerebral circulation, heart rate, respiration, basal metabolism, and various behavioral parameters.^{142, 143, 144}

Though the mentation in hypnosis often resembles dreaming, it appears much closer to daydreaming in character than to the dreaming seen during sleep. Clark Hull, in his 1936 classic Hypnosis and Suggestibility describes a number of experimental setups for distinguishing the mental characteristics of sleep from those of hypnotic trance. That hypnosis is not sleep or stupor is also easily determined by observing the range of

¹⁴²M.J. Bass, "Differentiation of the hypnotic trance from normal sleep," *Journal of Experimental Psychology*, 1931, 14:382-399.

¹⁴³Wible, C.L. and Jeness, A., "Electrocardiograms During Sleep and Hypnosis," *Journal of Psychology*, 1, 235-245, 1936.

¹⁴⁴Nygaard, J.W., "Cerebral Circulation Prevailing During Sleep and Hypnosis," *Journal of Experimental Psychology*, 24, 1-20, 1939.

activities possible in hypnotized subjects (compared to waking subjects, sleeping subjects, and those under the influence of depressant drugs).

This does not tell us that hypnosis has nothing to do with dreaming in some yet undetermined way, but if it relates to nocturnal dreaming, it must still be largely independent from the biological mechanisms of sleep.

Measurements of Localized Brain Activity

Looking for the Phantasms of Hypnotic Trance in the EEG

The general EEG pattern resulting from hypnotic induction is largely indistinguishable from non-hypnotic relaxation procedures; an increased alpha and theta density pattern.

This is relatively unsurprising, since the general EEG pattern is often indistinguishable from one type of subjective experience to another, even during such radical conditions as being under the influence of hallucinogenic drugs.

In other words, the EEG does not provide obvious indications of subjective state of consciousness, except for a few special cases like slow wave sleep, at least not without a great deal of mathematical analysis and interpretation.

Measuring and distinguishing different kinds of mental activity using an EEG requires extreme sophistication, far greater than that applied to the subject by past researchers who went looking for unique brain rhythms in different non-pathological states of consciousness. And even then, with the most sophisticated and interdisciplinary analysis, the EEG often only shows remnants or “shadows” of mental activity.

On the other hand, extremely sophisticated analysis of the EEG does show evidence of quasi-stable, coherent spatial structure in EEG patterns in the neocortex that could lend support to the idea of unique brain states, and states of consciousness.¹⁴⁵ This is for future research to elaborate upon.

¹⁴⁵ Nunez, P.L., 1995, *Neocortical Dynamics and Human EEG Rhythms*, Oxford University Press, chapter 3 (in press).

We also have other ways to observe brain activity that may some day help us reliably distinguish between phenomenologically different mental activities by monitoring blood flow and glucose metabolism.¹⁴⁶

Hopefully, future studies with this type of technology and with more sophisticated EEG technology will be able to help illuminate hypnosis and suggestibility to a greater degree. Up to this point, we have had brain measurement data in hypnosis that has been highly ambiguous and difficult to interpret.

The infamous “Alpha” and “Theta” states promoted by a few past researchers and capitalized on by merchandising and popular press are much less precise concepts than the popular literature has people believe.

Each of these general indicators of electrical power in different parts of the frequency spectrum have widely varying interpretations that depend on the coordination of a number of brain regions in time.

You cannot generally distinguish a meaningful functional subjective state of consciousness from a simple EEG any better than you could tell what programming is showing on a television by observing the power utilization characteristics of the set or the gross frequency characteristics of the image on the screen.

There are possible exceptions, such as the well known **correlation of power in the alpha band with relaxation and mental idling**. There are also **correlations of theta band power in various regions with a kind of limbic system pacemaker effect and with different pathologies or unusual conditions suggestive of selective inhibition**.

Theta, often thought to represent neural activity in the **hippocampus**, has been implicated in a wide variety of different kinds of behavior and mental processing, so determining its real significance is very difficult.

In theory, we should see more activity in the hippocampus, and thus greater theta, under hypnosis because it is central to two things that are seen in hypnosis. These are the **processing of non-salient cues**¹⁴⁷, and potentiation of **long-term memory**. Hypnosis tends to bias us toward processing cues that are not in immediate awareness or not related to ongoing consciously goal-directed behavior.

¹⁴⁶Phelps, M.E. and J.C. Mazziotta, 1985. Positron Emission Tomography : Human Brain Function and Biochemistry. *Science* 228:799-809.

¹⁴⁷ Cormier, Stephen M., (1986). *Basic Processes of Learning, Cognition, and Motivation*, Lawrence Erlbaum Associates, Inc. NJ: Hillsdale (pp. 221-39)

Neither alpha nor theta frequency dominance has applied so far to **hypnosis** itself in any obvious general way, although they have some application to understanding the difference between **high and low suggestible** people.

On the whole, attempts to show differences in the human general EEG pattern between a hypnotized subject and an awake and alert subject have failed or provided ambiguous results. Correlates discovered in the general EEG pattern have mostly been confined to conditions of sudden immobility preceding hypnosis.

This may reflect the special hypersuggestibility used by stage hypnotists (see the section on 'trance reflex'). EEG study also points out some seemingly generic human capacities, such as analgesia (see the section on hypnosis and pain control) which are not confined to hypnotic situations.

The EEG pattern during **neutral hypnosis** (a term meaning a relaxed hypnotic induction performed without further specific suggestions aside from the induction itself). is *an alpha (8-13 Hz) pattern (especially the slower frequencies) suggestive of stage 1 sleep.*^{148, 149, 150, 151, 152}

The pattern does not generally resemble deeper sleep in any way, nor does it progress in the same manner as the cyclic changes found in sleep patterns.¹⁵³ In other words, the EEG of relaxed hypnosis without any further suggestions given looks just like the EEG of a relaxed person without hypnosis.

¹⁴⁸Barker & Burgwin, (1948), "Brain wave patterns accompanying changes in sleep and wakefulness during hypnosis," *Psychosomatic Medicine*, 10, 317-326.

¹⁴⁹Barker & Burgwin, (1949), "Brain wave patterns during hypnosis, hypnotic sleep, and normal sleep," *Archives of Neurology and Psychiatry*, 62, 412-420.

¹⁵⁰Darrow, Henry, Gill, Brenman, & Converse, (1950), "Frontal-motor parallelism and motor-occipital in-phase activity in hypnosis, drowsiness, and sleep." *Electroencephalography and Clinical Neurophysiology*, 2, 355.

¹⁵¹Platonov, (ed), 1955/1959), "The word as a physiological and therapeutic factor : Problems of theory and practice of psychotherapy on the basis of the theory of I.P. Pavlov (2nd ed., D.A. Myshne, trans.). Moscow : Foreign Languages Publishing House.

¹⁵²Marenina, (1959), "Further investigations on the dynamics of cerebral potentials in the various phases of hypnosis in man." In *The central nervous system and human behavior* : Translations from the Russian medical literature (pp. 645-649). Bethesda, MD, U.S. Department of Health, Education, and Welfare.

¹⁵³Evans, (1979), "Hypnosis and sleep : Techniques for exploring cognitive activity during sleep," E. Fromm & R.E. Shor (Eds.), *Hypnosis : Developments in research and new perspectives* (2nd ed., pp. 139-183), N.Y.: Aldine.

The distinction between neutral hypnosis and sleep is somewhat ambiguous, since an exception to these previous findings has been reported with significant increases in delta and theta band activity during hypnosis, along with diminished power in the alpha and beta ranges, changes which are more suggestive of deeper sleep patterns.¹⁵⁴

Alpha density appears to unambiguously increase during neutral hypnosis^{155,156,157} (making it thus far indistinguishable from other relaxed conditions), but the results are very mixed as to the patterns related to hypnosis where there is response to specific suggestions, and where there is characteristic 'deep trance' responsiveness.¹⁵⁸

The EEG is far more labile once neutral hypnosis becomes hypnosis with specific suggestions for 'state changes.' The nature of hypnosis is more attentional than arousal-related, and the general EEG primarily reflects arousal.

In other words, classical hypnotic induction (neutral) strongly resembles (or possibly is synonymous with) relaxation and stage 1 (light) sleep. Hypnotic suggestibility complicates matters, and is not as clearly correlated with a particular general EEG pattern, though there is some ambiguous resemblance to sleep.

In one attempt from 1976, a Russian journal¹⁵⁹ reports some tentative success at finding an electrophysiological correlate to hypnotic induction. In this work, the authors studied the transformation of infra-slow oscillations of brain potentials in 15 patients with neuroses during 50 sessions of hypnosis. The results of such studies permitted the researchers to distinguish some important traits in the changes of infra-slow oscillations of brain potentials in different stages of hypnosis.

They concluded that a study of these changes during hypnosis may establish some correlations between the physiological state of the brain

¹⁵⁴Saletu, (1987), "Brain function during hypnosis, acupuncture, and Transcendental Meditation." In B. Taneli, C. Perris, & D. Kemali (Eds.), *Advances in biological psychiatry : Vol. 16. Neurophysiological correlates of relaxation and psychopathology* (pp. 18-40), Basel: S. Karger.

¹⁵⁵Brady & Rosner, (1966), "Rapid eye movements in hypnotically induced dreams," *Journal of Nervous and Mental Disease*, 143, 28-35

¹⁵⁶Edmonston & Grotevant, (1975), "Hypnosis and Alpha Density," *American Journal of Clinical Hypnosis*, 17, 221-232.

¹⁵⁷Melzack & Perry, (1975), "Self-regulation of pain : The use of alpha-feedback and hypnotic training for the control of chronic pain." *Experimental Neurology*, 46, 452-469.

¹⁵⁸Evans, (1979), "Hypnosis and sleep : Techniques for exploring cognitive activity during sleep," E. Fromm & R.E. Shor (Eds.), *Hypnosis : Developments in research and new perspectives* (2nd ed., pp. 139-183), N.Y.: Aldine.

and the unconscious mental processes. It is worthy of note that much of the Russian hypnosis literature tends to use the term hypnosis in a very generic way, as seen in the Russian articles that consider experiments on animal 'trance reflex' to be examples of 'hypnosis.' This may in fact tell us that such infra-slow brain wave correlates may not be unique to what we think of as hypnosis, but may be examples of some more generic low-level process underlying various hypnotic inductions as well as other situations.

Evoked Potentials

In spite of the ambiguous result of the search for general EEG patterns uniquely correlated with hypnosis, more sophisticated analysis of electrophysiological patterns has provided some *possible* clues into the nature of hypnosis, with the advent of the study of **evoked potentials** in recent decades.

While general EEG readings are an average of electrical activity in the brain in a particular area, **evoked potentials** are measurements specifically taken in response to sensory stimuli. Evoked potential studies gave the first indication from electrophysiology that perception is not a passive process but that the brain actively regulates the amount of incoming stimulation coming to it, by means of attentional mechanisms.

One study by a pioneer of the method¹⁶⁰ observed the brain of a girl diagnosed as having a hysterical glove and stocking anesthesia over the left side of her body. Normal evoked cortical potentials were observed when the right forearm was stimulated, but not from the left. This seems to mean that the hysterical girl was not attending to sensation from her left side, thus supporting the attentional theory of hysteria in her case. It is not unlikely that hypnotic anesthesia utilizes a similar mechanism.

Another clue is in EEG research by David Spiegel of Stanford in 1985¹⁶¹. Spiegel seemed to find an evoked response pattern that appeared during hypnotically suggested hallucination yet not during simulation of hypnotic hallucination. Nicholas Spanos and others have argued that this

¹⁵⁹ Aladzhalova, Rozhnov, & Kamenetskii, "Human hypnosis and super-slow electrical activity of the brain." [RUSSIAN] *Zhurnal Nevropatologii I Psikiatrii*, Imeni S - S - Korsakova. 76(5):704- 9, 1976.

¹⁶⁰Hernandez-Peon, Chavez-Iberra, Aguiler-Figueroa, (1963), "Somatic evoked potentials in one case of hysterical anesthesia," *Electroencephalography and Clinical Neurophysiology*, 15, 889-896.

¹⁶¹Spiegel, Cutcomb, Ren, and Pribram, (1985) "Hypnotic Hallucination Alters Evoked Potentials.", *Journal of Abnormal Psychology*, 94:249-255.

EEG data has been misinterpreted given the nature of the control subjects used.¹⁶²

Another example of evoked potential studies of hypnosis was one by Banyai and others from 1981, in which significant electrophysiological differences were found between 'alert hypnosis' and 'traditional hypnosis.'¹⁶³ In this case, alert hypnosis meant hypnotic induction given while engaging in physical activity (such as pedaling a bicycle). General EEG records did not change compared to an alert control period, but visual evoked potentials (VEPs, particularly a P70 component) showed a significant decrease in the traditional group and no change in the alert/active group.

After follow-up study¹⁶⁴, the authors concluded that the basic characteristic of hypnosis is the *modification of selective attention*. This is nothing new in itself, of course. That this is a basic characteristic of hypnosis has been recognized in the literature for at least two decades.¹⁶⁵ The suppressed VEPs were considered to represent the *reduced cortical anticipatory activity* associated with relaxation and modified attentional factors.

EEG correlates of effective cognitive pain control

Possible EEG correlates of pain control have been studied.¹⁶⁶ Evidence was reported that a theta-band peak in preparation for aversive stimuli may be correlated somewhat with the mental processes involved in effective pain control by 'fakirs.'

Cerebral responses in anticipation of painful stimulation and while coping with it were investigated in a "fakir" and 12 male volunteers. Experiment 1 consisted of 3 periods of 40 trials each. During period 1, subjects heard

¹⁶²Author's response to commentary by Spiegel, of Spanos, N. (1986) "Hypnotic Behavior: A Social-Psychological Interpretation of Amnesia, Analgesia, and 'Trance Logic.'" *Behavioral and Brain Sciences* 9:449-502

¹⁶³Banyai, E.I. Meszaros, I., & Greguss, A.C. (1981). Alteration of activity level : The essence of hypnosis or a byproduct of the type of induction ? In G. Adam, I. Meszaros, & E.I. Banyai (Eds.), *Advances in physiological sciences : Vol. 17. Brain and Behavior* (pp. 457-465). Elmsford, NY: Pergamon Press.

¹⁶⁴Meszaros, I., Banyai, E.I., & Greguss, A.C. (1981). Evoked potential, reflecting hypnotically altered state of consciousness. In G. Adam, I. Meszaros, & E.I. Banyai (Eds.), *Advances in physiological sciences : Vol. 17. Brain and Behavior* (pp. 457-465). Elmsford, NY: Pergamon Press.

¹⁶⁵Stern, J.A., Edmonston, W.E., Jr., Ulett, G.A. & Levitsky, A. (1963). Electrodermal measures in experimental amnesia. *Journal of Abnormal and Social Psychology*, 67, 397-401.

¹⁶⁶Larbig W. Elbert T. Lutzenberger W. Rockstroh B. Schnerr G. Birbaumer N. "EEG and slow brain potentials during anticipation and control of painful stimulation." *Electroencephalography & Clinical Neurophysiology*. 53(3):298 -309, 1982 Mar.

one of two acoustic warning stimuli of 6 sec duration signaling that either an aversive noise or a neutral tone would be presented at S1 offset. During period 2, subjects were asked to use any technique for coping with pain that they had ever found to be successful. During period 3, the neutral S2 was presented simultaneously with a weak electric shock and the aversive noise was presented simultaneously with a strong, painful shock. EEG activity within the theta band increased in anticipation of aversive events.

The theta peak was most prominent in the fakir's EEG. A negative slow potential shift during the S1-82 interval was generally more pronounced in anticipation of the aversive events than the neutral ones, even though no overt motor response was required. Negativity tended to increase across the three periods, opposite to the usually observed diminution. In Experiment 2, all subjects self-administered 21 strong shock-noise presentations. The fakir again showed more theta power and *more pronounced EEG negativity after stimulus delivery* compared with control subjects. Contrary to the controls, self-administration of shocks evoked a larger skin conductance response in the fakir than warned external application.

Note that the above is not an experiment specifically with hypnosis, but with individuals who demonstrate an unusual pain control capacity by whatever method. Indeed, general EEG measurements have repeatedly shown no difference between alert waking conditions and hypnosis. *The theta power correlation with pain control is not a correlate of hypnosis per se, but apparently a correlate of some endogenous analgesia faculty, or more likely, a general sensory isolation/selective attention faculty.*

Neuroanatomy and Hypnosis : Where is the “Unconscious” ?

The theoretical model most closely associated with the idea of the ‘unconscious mind’ is Freudian psychoanalysis. A number of aspects of Freudian psychoanalytic theory have stood the test of time and continue to be useful in explaining some of the things seen in hypnosis. For example, Freud identified two principles of mental function, **primary process** and **secondary process**. Freud's **unconscious** is guided by the primary process, which represents the basic instinctual and infantile drives of the individual, desiring the release of tension. A shift from

predominantly secondary process to predominantly primary process thinking is found during hypnosis,^{167,168,169} providing a relatively solid basis for the notion of hypnosis being linked to the concept of the unconscious found in psychoanalytic theory.

In the Freudian model, as in Luria's neuropsychology, language is an important factor. The conscious representation of a thing for Freud is linked to *images and words*, while the unconscious representation is linked solely to *images*. In this model, the verbal content is limited solely to the conscious representation. In the multi-module model, this reflects that a large part of what we consider "consciousness" involves us explaining things ourselves in words, and so the verbal modules are more closely linked to conscious functions, and modules without verbal expression are not as directly conscious.

Hypnotic suggestion in this model implies that primary process response involving imagery has been triggered, and that we are unable to express this response in words, so it is 'unconscious.' Yet there is the additional factor of the hypnotized subject being unaware of imagery as well as verbally unable to describe the reason for their response.

Is there a physical location for 'the unconscious mind' or 'the ego'? Or are these things perhaps useful abstractions that cannot be explained in purely neurological terms? Or are they perhaps simply fictions?

Freud himself would have liked to have been able to explain his model in neurological terms, but could not do so with the science of his day. Today, we still lack the detailed understanding of the brain required to explain or disprove psychoanalytic theory on physiological grounds, but we are a little closer than in Freud's day.

One of the first writers to attempt a formal neurological model of Freudian theory was L.S. Kubie, in the 1950's. Kubie's model had aspects of experiences being stored in several different ways in parallel, including (1) nonspecific generalizations from multiple discrete experiences with a mostly intellectual, cortical, and relatively nonemotional content, linked to auditory and visual imagery; and (2) exteroceptive and interoceptive visceral memories of discrete experiences, with vivid sensory images,

¹⁶⁷Gill, M.M., (1972), Hypnosis as an altered and regressed state. *International Journal of Clinical and Experimental Hypnosis*, 20, 224-237.

¹⁶⁸Gill, M.M. and Brenman, M., (1959), *Hypnosis and related states : Psychoanalytic studies in regression*. New York : International Universities Press.

¹⁶⁹Wiseman, R.J., & Reyher, J. (1973). Hypnotically induced dreams using the Rorschach inkblots as stimuli : A test of Freud's theory of dreams. *Journal of Personality and Social Psychology*, 27, 329-336.

and often without words¹⁷⁰. The visceral memories are obviously more difficult to recall in detail in terms of words, being of a mostly non-verbal nature.

A neurological psychoanalytic ('neuropsychodynamic') theory of hypnosis would, as would any comprehensive theory, have to explain several critical aspects, such as :

- How are hysteria-symptom-like responses manifested by means of verbal suggestions or unconscious **ideogenic** influences ?
- How does hypnotic induction in particular produce altered response to suggestion or ideogenic influences ?

Kubie's 1953 theory was that a *circuit connecting the temporal lobes with the underlying limbic system* is responsible for linking the inner and outer worlds of experience, so as to coordinate and integrate them. This would then also mediate the translation of psychological tensions to somatic disturbance, in Kubie's view.

Another theory is that the *second somatosensory area (SSII)* is central to simple sensorimotor conversion symptoms and hysterical loss of sensation,¹⁷¹ both similar to commonly used tests of hypnotic depth. Laurence Miller's theory is that :

“With SSII as a nodal point in the symbolic-sensory transduction process, psychical forces may exert their effects on the functioning of the body. The entire process may be facilitated by a paroxysmally induced overlability of the functional state of the brain as a whole, as expressed, in some cases, in the form of altered states of consciousness ... And these states might be induced under conditions of external stress or inner turmoil by a subtle kindling-like mechanism affecting reticular, limbic, and cortical systems of the brain.”

Addressing the role of **imagination**, M. Ostow studied the aftereffects of prefrontal lobotomy, noting that the frontal lobes seem to be crucial in maintaining a fully affective consciousness of self and an ability to fantasize. Fantasy in this sense is necessary to test out alternate circumstances while maintaining an objective observational viewpoint, an activity essential to creativity, self-expression, and enjoyment of basic

¹⁷⁰Kubie, L.S., (1953), Some implications for psychoanalysis of modern concepts of the organization of the brain. *Psychoanalytic Quarterly*, 22, 21-52.

¹⁷¹Miller, Laurence, 1991, Freud's Brain, Guilford Press, pp. 86-89.

human pleasures. The frontal lobes would help create derivatives of instinctual drives, essential for satisfying basic needs. The particular development of the frontal lobes in humans would likely be to a large degree what liberates them from the stereotyped nature of instinctual gratification in other animals.

Ostow also speculates that the anatomical proximity of the **premotor frontal region**, the **motor cortex** and the **motor speech area** may be what permits derivatives of unconscious fantasies formulated by a frontal cortex mechanism to be acted out, *without the involvement of the attentional mechanisms that are involved in bringing neural activity to consciousness*. The **premotor frontal** system might, according to this sort of theory, permit drive derivatives to activate **motor automatisms** for example, as opposed to the less flexible dorsomedial nucleus mechanism used in animals phylogenetically older than human beings.¹⁷²

Matching percepts with preconscious memories (and by that means, unconscious 'repressed' memories and fantasies) Ostow theorizes is a function of the **temporal lobes**. The common sensation of nonspecific recognition or *deja vu* seen in temporal lobe seizures is one of the observations supporting this idea. The subjective sensation experienced would in this view reflect the result of the internal comparison of perception and preconscious memories, and the *instinctual value* of the current percepts consistent with the individual's self-image. The Ostow theory is that this temporal lobe mechanism helps determine what we should like in a given situation, based on a consistent self-image, what we see as typical for us as individuals.

Putting the various themes, together, Ostow theorizes that *unconscious wishes begin in the frontal lobes*, and various *derivatives are presented to the temporal lobes*, and perhaps specifically to the **hippocampus**, to help evaluate environmental stimuli.

The separate experience in the various sensory modalities would converge on and be *integrated with the help of the temporal lobes*, and the integrated picture presented to the **hippocampus** for *evaluation-matching*.¹⁷³ This whole scenario is of course highly speculative, but it provides the potential for the kind of testable neurological model of psychodynamics that would be needed to illuminate the inner workings of the mind and brain, and to explain the phenomena of hypnosis.

¹⁷²Ostow, M., (1954), A psychoanalytic contribution to the study of brain function : I. The frontal lobes. *Psychoanalytic Quarterly*, 23, 317-338.

¹⁷³Ostow, M., (1955), A psychoanalytic contribution to the study of brain function : II. The temporal lobes. III. Synthesis. *Psychoanalytic Quarterly*, 24, 383-423.

In contrast, A.W. Epstein theorizes that the **frontal lobes**, as the agents of the 'executive functions' of the brain, such as overall control, anticipation, goal-selection, preplanning, and monitoring, are thus central to self-awareness, and nearly synonymous with the psychoanalytic **ego**.¹⁷⁴ The integration of subcortical, nonfrontal cortical, and frontal cortical areas would then provide the hedonic impetus for frontal lobe activity. The frontal lobes clearly are crucial for what we consider a healthy conscious ego function, but they are certainly not synonymous with it. Prefrontal lobotomy leaves the patient without the ability to formulate and carry out plans and evaluate alternatives, but not without a rudimentary conscious ego structure.

Luria¹⁷⁵ noted a particular kind of attention which develops as human beings mature, an attentional regulation mechanism specifically related to language and social interaction. This is reflected by a lasting increment in amplitude of an evoked potential under the influence of a spoken instruction, signifying mobilization of voluntary attention. This mechanism appears to depend most critically upon the frontal lobes of the brain, which provide a sophisticated linkage between verbal behavior and socially relevant aspects of attention.

FUNCTIONAL SYSTEMS AND OUTCOME-ORIENTATION

We know that the brain coordinates or helps to coordinate a great deal of our internal homeostatic activity. Some of this regulation is over and above the simple sympathetic and parasympathetic responses known for several decades. We now know that brain activity actively influences or coordinates aspects of immune response, dermatological response, and sensory perception. Much of this brain activity has no direct counterpart in subjective awareness.

We also know that **under certain conditions it is possible to influence these homeostatic processes by means of outcome-oriented mental strategies.** Examples of these strategies would be biofeedback, autogenic therapies, and yogic self-regulation. These strategies are effective even where the subject has no detailed knowledge of the mechanisms required to accomplish such regulation.

In other words, the people who are successfully able to learn to control or influence an autonomic function by biofeedback (or hypnotic suggestion) do not necessarily know how they do it. Their conscious attention is on the goal (e.g., the imagery in some exercises, or perhaps the tone or

¹⁷⁴Epstein, A.W., (1987), The phylogenesis of the "ego," with remarks on the frontal lobes. *American Journal of Psychoanalysis*, 47, 161-166.

¹⁷⁵Luria, A., (1980), *Higher Cortical Functions in Man*. (2nd ed.) New York : Basic Books.

other signal in biofeedback). The details of what they are doing remain obscured from their own awareness.

This outcome-oriented functionality in the brain seems to tell us something crucial about how mental strategies relate to physiological functional systems. In the various self-regulation methods, a consistent observation is that the subject **concentrates on the outcome** they wish to influence, and **not the mechanism** presumed to cause it. Also, functional systems in the body can perform the same task by any of various different means. This applies to some extent to physiology, but to an even greater extent to behavior.

During the period around World War II, several theorists simultaneously introduced the concept of a **functional system** in biology. At that time, the concept of **cybernetics** (automated control and communication systems) was extremely popular in science. The idea in cybernetics is that a system involves something more than predictable precise actions of its individual components. A system in the cybernetic sense is capable of self-correction, keeping itself on a pre-determined course in spite of obstacles. This was first applied to such military topics as missile guidance, but later applied to the study of life as well.

One well-known example was P.K. Anokhin in the former Soviet Union,¹⁷⁶ who applied the idea to localization of function in the nervous system. Another example was Ludwig von Bertalanffy,¹⁷⁷ who had a more general humanistic model of organismic function in biology.

Another Russian physiologist, N.A. Bernstein, applied a similar functional system model to movement¹⁷⁸ to explain how feedback loops can implement motor plans by flexible and interchangeable mechanisms. One example is the fascinating fact that motor skills can transfer from one limb to another in certain cases (to some degree) in spite of the clearly distinct neurological control of those limbs. We cannot yet identify a specific brain location where such general plans might exist and be shared by the various limbs. This is also the case with memory in general.

The functional system concept potentially provides a plausible view of how the brain might organize behavioral plans. Indeed, functional feedback loops seem to be important in a great deal of behavior, including behavior under hypnosis.

¹⁷⁶Anokhin, P.K., (1940), 'Localization problems from the point of view of systemic ideas of nervous functions,' *Nevrologia i Psykhatriya* vol. 9 no. 6 (Russian)

¹⁷⁷Bertalanffy, L. von, (1967), *Robots, Men, and Minds*, New York: Braziller

¹⁷⁸Bernstein, N.A., (1967), *The coordination and regulation of movements*, Pergamon Press, Oxford.

This sort of goal orientation often seems to take place in a way that is critically dependent upon the prefrontal cortex of the brain. The prefrontal cortex is a crucial brain region in human beings. Yet it is a 'silent' area in many ways.

For many years, neuroscientists overlooked the basic functions of the prefrontal cortex. So much so that Antonio Egas Moniz won a Nobel Prize in 1949 for discovering that disconnecting it from the rest of the brain could stop certain psychotic behaviors. Unfortunately, the award-winning *prefrontal leukotomy* (commonly known as *frontal lobotomy*) also severed the patient from most of their *personality*. The inability to hold a thought long enough to form a plan to carry it out without the prefrontal cortex is likely a big part of why this operation appeared to stem psychotic behavior.

Various sophisticated experiments have shown that an important function of the prefrontal cortex is to hold complex images and to stay focused on a task while we apply decision processes to them. This takes place not by the prefrontal cortex alone, but in conjunction with the parietal lobes and the limbic system.

The **dopaminergic** transmitter systems may be the ones most closely related to the **directional** component of attention, which permits behavior having definite direction and specific objectives. These are the pathways most closely related to biological **rewards** for behavior. One intriguing modern theory of addiction proposes that virtually all forms of compulsive behavior, or irresistible craving, are linked to a rise in dopamine in a particular brain region, the *nucleus acumbens*. The compulsive responses seen in hypnosis probably correlate to some degree with a shift from noradrenergic to dopaminergic control in the brain stem.

Other catecholamine systems in the brain, such as the **noradrenergic** system, seem to relate less to directional activity and more to non-specific arousal functions.¹⁷⁹ It appears to be the relationship between the catecholamine transmitter systems in general and the **acetylcholine** transmitter system in the brain that brings on dreaming. When the catecholamine systems become less active, and the cholinergic systems become more active, we have REM sleep, and dreaming becomes more likely.

The relationship of the **serotonergic** transmitter system to attention, motivation, and behavior is even more difficult to discern. It appears

¹⁷⁹Fair, Charles, (1988). *Memory and Central Nervous Organization*. New York : Paragon House. P. 118-119.

serve a damping or satiety function in relation to motivation, and appears more related to general arousal and to mood than to specific directional intention.

Something we have yet to determine is the degree to which the **prefrontal lobes** and **dopaminergic pathways** can help maintain "**unconscious**" plans and goals. This might potentially provide an explanation for certain peculiarities of volition related to suggestibility. We have yet to determine whether the prefrontal lobes or dopaminergic pathways might play a part in facilitating certain kinds of **cognitive dissociations**, or functional modularities. Some believe that such hypothesized splits of attention give rise to the anomalies of volition seen in hypnosis. The exact mechanisms of dissociation are not known.

We do know that the most commonly used antipsychotic drugs exert a significant part of their effect on the dopaminergic transmitter systems, (though the recent antipsychotic Clozapine also affects serotonin). This provides a link *of some sort* between these systems and abnormal behavior of certain types. Also, the drugs most effective in treating attention deficit in children are those with a more selective effect on the dopaminergic versus noradrenergic pathways.¹⁸⁰

Clearly, much research remains to be done in the area of isolating candidate neurological substrates for attention, goal-directed behavior, and cognitive dissociation.

One promising area is in the possible identification of separate neural circuitry for what psychologists call **procedural** and **declarative** memory. The brain may well use different mechanisms to learn *how to do things* and to learn *information about things*.

This is another possible way to help explain **automatisms** (semi-intelligent behaviors independent of conscious awareness) both under hypnosis and in other situations.¹⁸¹ Perceptual research along several lines seems to tentatively support the notion of "unconscious" suggestion in some ways. Suggestion can influence us in a manner partly consistent with psychodynamic theory. The effects of suggestion may be "unconscious" in that they yet influence our **procedural** behavior without our **declarative** knowledge that such influence is occurring.

¹⁸⁰Zametkin, A.J., and Rapoport, J.L. (1987). J. Amer. Acad. Child Adol. Psychiat., Vol. 26, 5: 678-686.

¹⁸¹For example, see the article "Memories and Habits : Two Neural Systems," by Mortimer Mishkin, Barbara Malamut, and Jocelyne Bachevalier in J.L. McGaugh, Gary Lynch, and N.M Weinberger (eds) *The Neurobiology of Learning and Memory*, Guilford Press.

Hemispheric Asymmetry and Hypnosis

“... it is important to get one thing straight. The right hemisphere is not the non-language hemisphere. It is critically and intimately involved in language processing at many levels during both development and maturity. Perhaps most importantly, it is critical for the large-scale, semantic processing of language, not word meaning so much as the larger symbolic constructions that words and sentences contribute to: complex ideas, descriptions, narratives, and arguments.” -- Terrence Deacon, “The Symbolic Species,” p. 311-312.

Perhaps the most plausible and popular of the “narrow localization” type neurological models of mental functions in hypnosis are those involving cerebral lateralization.

The idea is to try to find an explanation for why attention regulation and language processing shift qualitatively during hypnosis. The appearance of “primary process” thought (imagination, symbolic images, concrete rather than abstract language patterns) during hypnosis, and the similarity¹⁸² of hypnosis and the “primary process” thought in commisurotomy (“split brain”) patients all lead to a tempting conclusion that the non-language-dominant hemisphere is differentially activated during hypnosis.

In fact, this is likely the case, but the relationship is far more tricky than suggested by popular culture accounts of cerebral specialization. It is common to hear non-technical accounts claim that the “critical left hemisphere is put to sleep” in hypnosis, and this is completely inaccurate as well as misleading.

If anything, hypnosis involves a greater flexibility in the use of the cerebral hemispheres, not using one rather than the other. Some functions of the brain during hypnosis seem to rely on positive competencies of the right hemisphere, and some on the left hemisphere, although one or the other may well be dominant at one point in time.

The left hemisphere appears specialized for fine motor control, for positive emotions, and for language as a means of self-articulating thoughts, feelings, and goals. *The left cerebral hemisphere provides the*

¹⁸²Galin, D., (1974), Implications for psychiatry of left and right cerebral specialization : A neurophysiological context for unconscious processes. *Archives of General Psychiatry*, 31, 572-583.

text of our verbal communications, but is less efficient at understanding the context or larger symbolic meaning of a communication.

People with a damaged right hemisphere tend to understand things piece-wise, and have trouble putting them together to get the overall meaning. They often can't understand the point of a joke, though they understand all of the individual lines in the joke.

The right hemisphere appears to be specialized for providing **imagistic and affective texture by processing subtleties of social communication and recognizing biologically important patterns**. It also provides the context for our language processing, letting us see the bigger picture, and allowing us to change our overall perspective.

Dream states likely involve an oscillation between different types and degrees of lateralization, as does hypnosis. Frontal lobe activity seems to underlie the recursive evaluation and planning of behavior, and many experts believe that hypnosis is more specifically a function of frontal lobes than one hemisphere over the other. In common to all theories is the observation that the parts of brain undergo a reorganization of relationships to each other during hypnosis.

Primary process, for example, can be compared to a functional shift to a regressive, acting-out state oriented toward fulfilling behavioral wishes, and experiencing alternate behavioral realities (role playing). This may be what happens during dreaming, and also in some way sometimes during hypnotic responding.

Primary process probably requires a shift in the differential use of the cerebral hemispheres, though clearly not a simple activation of one hemisphere while suppressing the other, as popular accounts have proposed for years. It also involves a shift in transmitter system control (from **noradrenergic** to **cholinergic**), and an accompanying shift in subcortical activation (relatively less activation of the **amygdala**, and greater activation of the **hippocampus**).

Perhaps the most extreme view of hemisphere specialization found in clinical literature is that of Bakan, who proposes that the right brain is solely responsible for dreaming and similar imagistic, fanciful states which are temporarily relieved of dominant hemisphere reality testing.¹⁸³ The similar imagistic nature of hypnotic deep trance seems to suggest that Bakan's theory would also consider hypnosis as a functionally commisurotomized 'right-brain' state.

¹⁸³Bakan, P. (1977-1978) Dreaming, REM sleep and the right hemisphere : A theoretical integration. *Journal of Altered States of Consciousness*, 3, 285-307.

Experiments with actual commissurotomy patients who report their dreams does not support Bakan's theory, which would predict that commissurotomy patients should not be able to recall their dream imagery immediately upon being awakened in REM sleep.¹⁸⁴ In addition, hypnosis has been shown to involve more reality testing than is commonly assumed (though it may be relegated to the background).

Studies of people with right hemisphere damage, compared to those with left hemisphere damage, seem to show that people with right hemisphere damage actually lose more of their overall understanding of what is going on in a situation. People with left hemisphere damage retain their understanding of the situation, but are less able to communicate it in words. This does not fit the simple notion that the right hemisphere is the "unconscious mind."

Indeed, when right hemisphere activity is suppressed, the result is a very literal and rigid interpretation of language that many sources have claimed represents the limited language processing capacity of the right hemisphere. Hearing *text* without *context* is more a function of the isolated left hemisphere than the right. The right picks up a fuzzy overall view of the situation, without the details of the text.¹⁸⁵

The balance of emotion found in dreams and in hypnosis also contradicts the notion that the right hemisphere is active while the left is inactive, because the right hemisphere is known to be specialized for negative emotions requiring immediate gross action, whereas dreams and hypnosis involve both positive and negative emotions.

Aside from needing language to generate the suggestion effects in hypnosis, hypnosis also requires us to narrow or split our awareness, something that is contrary to the integrative role assigned to the right hemisphere. Gruzelier and Crawford's physiological model of hypnotic induction describes it in terms of **alternating between left hemisphere activation and right hemisphere activation**, based on empirical evidence from electrodermal responses.¹⁸⁶

While the most extreme form of "right hemisphere as the dreamer" hypothesis lacks empirical support, a milder form has impressive evidence from a number of different experiments, in addition to the well

¹⁸⁴Greenwood, Wilson, & Gazzaniga, (1977), Dream report following commissurotomy. *Cortex*, 13, 311-316.

¹⁸⁵ A more complete discussion of the role of the hemispheres in language, along with many examples and a comprehensive overview of hemisphere specialization in general can be found in Robert Ornstein's 1997 "The Right Mind: Making Sense of the Hemispheres," from Harcourt Brace & Co.

known post-commissurotomy experiments by Sperry, Geschwind, Gazzaniga, and others.

A number of studies showed a *preponderance of right hemisphere activity in both traditional and active/alert hypnosis during attention to the hypnotist's suggestions*.¹⁸⁷

The right hemisphere seems to be superior in the distribution of attention across space and in the production and perception of emotion, especially negative emotion.¹⁸⁸ The right hemisphere appears to play a special role in facial recognition, and in the interpretation of inflective and prosodic qualities of spoken speech, and these skills are likely important factors in at least some phases of responding to hypnotic suggestion. The right hemisphere also appears to be better adapted for handling procedural information, and the left for declarative information.¹⁸⁹

One conclusion commonly made from these results is that the right hemisphere should in principle be superior in processing the subtler aspects of interpersonal communication. In spite of this, *there is little in the way of any clear-cut functional differences between the two hemispheres in any reasonably normal activity*, only shifts in the overall activation pattern.¹⁹⁰

Traditional cortical inhibition theories hold that **hypersuggestibility** is the result of inhibition of the cerebral cortex (and thus the usual 'critical faculties') due to some sort of override by lower brain centers.

This has proven to be a clinically useful but theoretically simplistic way of looking at it. A more recent version of that former Pavlovian theory is that the left cerebral hemisphere is somehow selectively inhibited during conditions of hypersuggestibility. This is an expression of the popular view of 'left-brained' and 'right-brained.' As for most behavior, there will likely be evidence for a differential contributions from the asymmetric cerebral hemispheres in **hypersuggestibility**, but differential hemisphere activity itself does not alone seem to be the primary mechanism of enhanced suggestibility.

¹⁸⁶ Gruzelier, J.H. & Crawford, H.J., (1992). "A midstream view of the neuropsychophysiology of hypnosis: Recent research and future directions." In E. Fromm & M.R. Nash (Eds.) *Contemporary Hypnosis Research* (pp. 227-266). New York: Guilford.

¹⁸⁷For a review, see DeBenedittis & Carli, (1990), *Psichoneurobiologia dell 'ipnosi*. *Seminari sul Delore*, 3, 59-116.

¹⁸⁸For a review, see Hellige, J.B., (1990) Hemispheric Asymmetry. *Annual Review of Psychology*, 41, 55-80.

¹⁸⁹ Shepherd, Gordon M. (1988). *Neurobiology*, Oxford University Press. P. 634

Separately putting the left hemisphere “to sleep” is experimentally possible by using a short-acting barbiturate injected into the carotid artery on that side. This does not result in the characteristic hypnotic trance, though it does illustrate some other interesting lateralization effects.

One study of dichotic listening during hypnosis concluded that **hypnosis may facilitate greater participation of the right cerebral hemisphere in cognition.**¹⁹¹ However, their experimental results have been shown to only ambiguously support their conclusion. The effect they saw in reduction of right ear advantage in dichotic listening could also be interpreted as representing a **decrease in left hemisphere activation**, or even an increase in callosal connectivity. Particularly since it was found that the right hemisphere is not normally involved in this task at all.

One critique concludes that there was actually no *overall* effect from hypnosis on the normal laterality pattern.¹⁹² In that same article, a study claiming that relaxation was responsible for the reduced right ear advantage in dichotic listening during hypnosis was also critiqued. The result was considered inconclusive, that if both hypnosis and relaxation do seem to modulate the laterality effect, it would have to be by entirely different mechanisms. The laterality effect was more pronounced in left handers with hypnosis and less pronounced in relaxation with left handers. This provides yet another subtle clue that hypnosis is not simply relaxation, but also evidence that it is not simply a shift in hemisphere dominance.

Clearly, the older popular notion that there is a wide class of *altered states*, all involving simply the inhibition of the ‘critical’ left hemisphere is completely incorrect. We find ever more important distinctions between these various conditions, in spite of their similarities.

The simplistic idea that hypnosis involves nothing but relaxation should also be considered archaic, though the extreme difficulty and subtlety of distinguishing neutral hypnosis from non-hypnotic relaxation is an important lesson about how much care is required in studying *altered states of consciousness* objectively.

¹⁹⁰Gosi-Greguss, Banyai, Vago, Varga, & Horvath, (1988, August). *Interactional approach to the understanding of hypnosis : Electrophysiological indices*. Paper presented at the 11th International Congress of Hypnosis and Psychosomatic Medicine, Leiden, The Netherlands.

¹⁹¹Frumkin, Ripley, and Cox, (1978), "Changes in Cerebral Hemispheric Lateralization with Hypnosis," *Biological Psychiatry*, 13, 741-750.

“PUTTING HALF THE BRAIN TO SLEEP,” IS THE RIGHT HEMISPHERE THE FREUDIAN UNCONSCIOUS ?

The comparison is often made in popular accounts and in the marketing of ‘subliminal persuasion’ products of subliminal perception with the claimed literal acceptance of suggestions under hypnosis (“trance logic”).

A popular theory in recent years has been that the “non-critical right hemisphere” was somehow differentially involved in processing such messages, without critical analysis and therefore ‘unconsciously’. This view of trances and hypnosis as a dissociation of consciousness from our usual critical faculties predates the hemisphere specialization research of neuroscientists Sperry, Bogen, Gazzaniga, and others, but appeared to find a formidable expression in the “split brain” theories.

One popular author on the paranormal describes hypnosis in terms of a compelling hybrid view from pop psychoanalytic theory and pop neuroscience :

“... during hypnosis the conscious ego - the ‘you’ (which is situated in the left cerebral hemisphere) - falls asleep.”¹⁹³

In the most extreme form of this view, the left hemisphere is seen as ‘rational’ and the right hemisphere as ‘emotional’ or ‘intuitive,’¹⁹⁴ leading to the attractive but simplistic view that hypnosis is explained simply as putting the ‘rational hemisphere’ to sleep, and thus releasing the claimed magical powers of the “normally silent” right hemisphere which then ostensibly performs all sorts of paranormal feats.

This notion was put to rest by a variety of different kinds of research, showing that while the hemispheres are specialized for particular kinds of tasks, many regions of cortex cooperate in all complex behaviors, whether during hypnosis or not.

The difference between emotional expression by the two hemispheres is much more subtle than implied by the ‘right brain is emotional, left brain is rational’ idea.¹⁹⁵ It may be more accurate to say that the right

¹⁹²Zaidel, Clarke, and Suyenobu, (1990), "Hemispheric Independence : A Paradigm Case For Cognitive Neuroscience," in Scheibel and Wechsler, *Neurobiology of Higher Cognitive Function*, Guilford Press.

¹⁹³Wilson, Colin, and John Grant, (eds) (1981), *The Directory of Possibilities*, New York : The Rutledge Press.

¹⁹⁴This view of hypnosis is provided for example in Shone, Ronald, (1982). *Autohypnosis : A Step-By-Step Guide to Self-Hypnosis*, Thorsons. P. 14-15.

¹⁹⁵Saravi, Fernando D., (1993). "The Right Hemisphere : An Esoteric Closet ?" *Skeptical Inquirer*, 17: 4 (Summer), 380-387.

hemisphere is specialized for expressing negative emotion, and the left hemisphere for expressing positive emotion, or inhibiting negative emotion.

During hypnosis, rather than putting the left hemisphere to sleep, we allow its **attentional processes to habituate** (as in eye fixation inductions for example), or otherwise cause the hemisphere activity to **desynchronize** (as in confusion inductions), changing the way we pay attention to our environment.

With the specialized type of attention used by the left hemisphere inactivated, the left hemisphere no longer regulates the responses of the right hemisphere in the same manner. This means that the specialized form of attention used by the right hemisphere, which includes attention to social cues, situational context, and interactional rhythms, takes on greater behavioral significance and is less impeded.

This shift in the way we pay attention seems to be an important part of the unique kind of connection we make with each other during hypnosis. Once we make this kind of connection, however, we make use of the flexibility of our brain and a wide range of additional talents. It is primarily while we are paying attention to the hypnotist that the right hemisphere is differentially being activated, not necessarily while responding to suggestions.

Perhaps surprisingly then, the idea of a shift in the use of the hemispheres is not *completely* fallacious and does offer some measure of potential insight as part of a scientific theory.

The right hemisphere is more involved in the perception and also expression of emotional tone in many people, and it may also be more dominant for 'negative' emotions than for 'positive' emotions, although these ideas have received inconsistent empirical support.¹⁹⁶ One inconsistency is that the *perception* of *all* emotion seems to be somewhat lateralized, while the lateralization of *experienced* emotion is more dependent on what type of emotion we are talking about.

One hypothesis consistent with most of the experimental data is that *hyperarousal* of some sort of the right hemisphere is associated with negative emotions, and *hypoarousal* of the right hemisphere with indifference or positive emotions, where in both cases emotion is assumed to be mediated primarily by the right hemisphere.

¹⁹⁶An excellent technical discussion of this is found in Hellige, Joseph B., (1993). *Hemispheric Asymmetry : What's Right and What's Left*, Harvard University Press. P. 50-54.

Also, there is evidence that the two hemispheres are mutually inhibitory in some ways, and so it might be speculated that changes in activation in one hemisphere are related to opposite changes in the other hemisphere, making the process of mediating emotion likely dependent on both. For example, it is possible that each hemisphere is more dominant for a different type of emotion, such as positive emotion on the left and negative emotion on the right.

Tenuous support for this idea comes from brain damage surveys, where left hemisphere damage results in catastrophic emotional responses (anxiety, tears), while right hemisphere damage results more often in indifference reactions such as cheerful acceptance of disability or indifference toward failure.

Right side damage also may result in outright denial of disability, **anosognosia**, which may partly result from blunted emotional response.¹⁹⁷ Of course interpreting indifference as ‘positive’ could be a rather questionable slant, leading to the conclusion that a simple hemisphere specialization model (“good” left vs. “bad” right) is far from a satisfactory basis of a theory of cortical aspects of emotional response.

Hemisphere specialization of *language* is also more subtle than popular beliefs would hold. The left hemisphere seems dominant for producing overt speech, phonetic decoding, using syntax and some but not all semantic processes. The right hemisphere also has a language faculty, dominant for using the pragmatic aspects of language, integrating information across sentences and using context.¹⁹⁸

Clearly, reasoning (and critical analysis) requires the functions for which each hemisphere is dominant, and hypnosis, as we think of it, does as well. In addition, our capacity to process complex metaphor in hypnosis reveals that we are also able to cross over domain boundaries through hypnotic suggestion, as we do with metaphor outside of hypnosis. Rather than reflecting the use of one hemisphere over the other, hypnosis represents an additional cognitive fluidity across the various specialized domains of the brain.

The famous theory of Princeton psychologist Julian Jaynes¹⁹⁹ about the left hemisphere being the source of “voices in our head” as transmitted over the corpus callosum now seems terribly oversimplified, but there is

¹⁹⁷Bear, D.M., (1983). Hemispheric specialization and the neurology of emotion. *Archives of Neurology*, 40: 195-202.

¹⁹⁸Ibid, p. 110.

¹⁹⁹Jaynes, J., (1977), *The Origin of Consciousness in the Breakdown of the Bicameral Mind*. Boston: Houghton Mifflin.

some albeit inconsistent empirical evidence that it may have some basis. Callosal abnormalities are sometimes indeed found in schizophrenics, as part of Jaynes' theory would predict.²⁰⁰ However, the voices don't simply come misattributed from one hemisphere to the other. The subtle cues needed to identify the source of a voice are interpreted primarily by the right hemisphere. Also, the functioning that is most often lost in schizophrenics is the capacity to understand the overall situation, or flexibly change our understanding, a right hemisphere function.

HYPNOSIS AND CALLOSAL CONNECTIVITY

What little research has been done specifically on hemisphere dominance changes during hypnosis suggests a complex pattern consistent with the other higher level human behavioral functions. Dominance shifts may occur but are subtle and not yet well understood. Most importantly, they are not well predicted or explained by existing popular theories of hemisphere specialization.

Normal subjects consistently show greater accuracy with their right ear in dichotic listening tests where they listen to simultaneous pairs of stop consonant-vowel syllables.²⁰¹ This is generally accepted as evidence that the left hemisphere is specialized for phonetic perception. Some researchers have discovered that *hypnosis reduces this right ear advantage (REA) for phonetic perception.*²⁰² They concluded that hypnosis thus facilitates greater participation of the right cerebral hemisphere in cognition. However, the interpretation more consistent with this and other findings on this task is that the left hemisphere activity is being reduced or callosal connectivity being altered rather than that the right hemisphere is more utilized in general in hypnosis. In fact, *hypnosis fails to provide any overall effect on the normal laterality pattern, even in experiments which are sensitive enough to show differences in laterality as a function of handedness or gender.*²⁰³

Comparing hypnosis with a similar effect found with simple relaxation provided hints that hypnosis may increase the REA in left-handed males and that relaxation may increase the LEA scores and decrease the REA scores in left-handed females. Interesting result, but hardly supporting the notion that hypnosis simply facilitates the function of the right hemisphere.

²⁰⁰Craft, S., L. Willerman, and E.D. Bigler, 1987, Callosal dysfunction in schizophrenia and schizo-affective disorder. *Journal of Abnormal Psychology*, 96, 205-213.

²⁰¹Studdert-Kennedy, M. & Shankweiler, D. (1970). Hemispheric specialization for speech perception. *Journal of the Acoustical Society of America*, 48, 579-594.

²⁰²Frumkin, L.R., Ripley, H.S., & Cox, G.B., (1978). Changes in cerebral hemispheric lateralization with hypnosis. *Biological Psychiatry*, 13: 741-750. (741)

²⁰³Zaidel, Eran, Jeffrey M. Clarke, and Brandall Suyenobu, "Hemispheric Independence : A Paradigm Case for Cognitive Neuroscience," in Arnold Scheibel and Adam Wechsler, *Neurobiology of Higher Cognitive Function*, Guilford Press, 1990. (p. 330-332)

Rather, there seems to be an (inconclusive) effect showing that hypnosis modulates laterality effects in a far more subtle manner. And it seems to do so through a very different mechanism than relaxation, which may also modulate laterality in some way.

The modulation of laterality with both hypnosis and relaxation appears to be *greater in left handers than in right handers*, and **hypnosis seems to increase the laterality effect while relaxation decreases it**. This is perhaps even more important in distinguishing hypnosis from relaxation than it is in showing modulation of laterality in hypnosis.

What we see in hypnosis is obviously not compatible with the theory that the left brain is being put to sleep and the right brain acting to process suggestions 'unconsciously.'

In no meaningful sense is the 'unconscious mind' of either psychoanalysis or cognitive science identifiable simply as one cerebral cortical hemisphere vs. the other. Pioneering neuroscientist Roger Sperry, perhaps the single person most closely associated with 'split brain' research, (and often quoted in popular literature as somehow in support of the 'mystical creative right brain' idea) was himself actually much more conservative than that, a stance which is still seen among leading neuroscientists today :

One must caution ... that the experimentally observed polarity in right-left cognitive styles is an idea with which it is very easy to run wild. You can read today that such things as intuition, the seat of the subconscious, creativity, parapsychic sensitivity, the mind of the Orient, ethnocultural disposition, hypnotic susceptibility, the roots of the counterculture, altered states of consciousness - and what not - all reside predominantly in the right hemisphere. The extent to which extrapolations of this kind may eventually prove to be more fact or fancy will require many years to determine. Meantime *it is important to remember that the two hemispheres in the normal intact brain tend regularly to function closely together as a unit.* (Italics added).

Popular authors frequently attempt to piggyback on the research of Sperry and others, adding their own slant. While admitting to find the details 'tedious' and failing to understand them very well, some still continue to implausibly claim that such complex activities as drawing and even creativity are "right brain" functions and that the right brain is somehow inactive in most people until magically unlocked by certain training.

So strong is the compulsion for popular authors to ride on the coattails of legitimate modern neuroscience that authors frequently find themselves in

the paradoxical position of admitting that the concept of “right brain mode” is a metaphor and that the neuroscientists themselves disagree with the popular authors on the interpretation of their work, yet claiming in the same breath that they are “applying hemisphere specialization research” when they promote their own ideas.²⁰⁴

This perceived need to be seen as ‘scientifically based’ without actually having either the background or even the motivation to understand the research itself appears to be a very strong cultural phenomenon. Science, or even just the trappings of science, are commonly perceived in an almost mystical way as a special source of truth. Or, in reaction to this irrational kind of “scientism,” there is also a widespread anti-science sentiment in support of metaphysical theories and “alternative” medicine.

There is perhaps no area where these misunderstandings of science are felt more deeply than with hypnosis. Counteracting this deleterious effect is part of the intended purpose of this book.

The Brain in Trance

There are several mechanisms underlying the effects of suggestion. In particular, there are long-term effects and short-term effects. These are not specific to hypnosis, they are simply **the neurobiological correlates of environmental cues influencing brain and behavior**.

The long-term effects appear to be modulated primarily by the **hypothalamic-pituitary axis** of the brain, along with the long term memory systems.

Other effects of suggestion are more commonly associated with hypnosis, or other specialized suggestive procedures. The immediate perceptual effects of suggestion probably have something to do with the way the **prefrontal cortex** helps us interpret what we perceive, as well as the specific cognitive and emotional mindset established by structures throughout the brain.

Each of the cerebral hemispheres plays a different but important role in responding to suggestion. Rhythmic cycles of attention and metabolism

²⁰⁴See "A Right Brain Talk with Betty Edwards," interview in Judith Hooper and Dick Teresi, 1990, "Would the Buddha Wear a Walkman?" Fireside Books, Simon & Schuster. P. 60-61.

also seem to play an important role. **Hypnosis**, which makes a particularly systematic and dramatic use of suggestion, does not seem to involve a specific area of the brain, but **a reorganization of the relationships between parts of the brain**.

When we talk about the neurobiology of hypnosis, we are talking about changes in the way the different brain regions relate to each other, rather than simply a change in brain state. When we talk specifically about **trance**, however, we are usually referring to a more specific kind of **shift in the way we pay attention**.

Information Transduction and the HPA

Suggestion in hypnosis literature generally refers to the semantic (meaning) content of communication passed on from the hypnotist, and responded to by the subject. This implies the transduction of information from one form into another.

We normally think of information transduction as occurring from cortical patterns in the brain into language, picked up by the senses, and then translated back into cortical patterns in the brain of the receiver. However, information transduction also occurs between verbal patterns, thoughts, non-verbal communication, and somatic (body) responses.

For example, we can convert a verbal instruction to raise our arm into a muscular movement. We can also convert a careless statement from another person into a negative emotional response.

Patterns of information are even encoded into the protein structure of our brain, for memory storage. The details of information transduction from one form to another in the body represent the central problem addressed by the field of neurobiology.

Some theorists believe that the *limbic-hypothalamic system* (**hypothalamic-pituitary-adrenal axis**, or **HPA**) plays a primary and central role in the transduction of information between sensations and perceptions on one hand, and thoughts and behaviors on the other hand.²⁰⁵

This collection of brain structures appears to be instrumental in creating the subjective experience we associate with emotion, much of it through chemicals called neuromodulators, and is in turn affected by our thoughts.

²⁰⁵ Rossi, Ernest L., (1993). *The Psychobiology of Mind-Body Healing : New Concepts of Therapeutic Hypnosis*. (Revised edition), Norton. P. 140.

This gives the HPA its proposed central role in mediating both "instinctive" behavior such as feeding, fighting, mating, basic social cooperation, and state-specific memory and behavior, (part of the situation specificity we observe in learned skills). This kind of developmental and situational specificity of skills is probably an important part of what is commonly referred to as the **emotional unconscious** or **dynamic unconscious** mind.

The HPA, and its feedback loops with the rest of the brain and the rest of the body, probably plays a very important role in our physiological response to suggestion as well as in our physiological response to stress.

Triggering Fast Waves and the Orienting Response

Another aspect of suggestion has to do with its more immediate effects on perception. The mind-body response to stress or suggestion occurs over a relatively long period of time, because the feedback loops involved use relatively slow chemical messengers. Our response to suggestion during hypnosis can also be immediate and dramatic, making it likely that another mechanism is at work besides the regulatory functions of the HPA.

The riddle of how hypnotic suggestion affects perception awaits our better understanding of how perception works in general. The modern view of the brain reveals a mass of separate parallel computations of different sorts by specialized modules. But it isn't quite clear yet exactly how the brain manages to "bind" all these computations together to produce coherent perception, thought, and action.

Evidence has been mounting that *synchronized firing patterns* in different areas of the brain may provide the missing "binding" of different computations. It was previously believed that there might be a highly specialized area of the brain that brought together all of the activity of the other areas²⁰⁶, but this does not seem to be the case.

Instead, the resulting cognitive processes seem to be represented by *joint activation of different cells with split-second timing*. This conclusion is based on both theoretical considerations and recordings from the visual cortex.²⁰⁷ The synchronized firing involves very brief (100-300 mS) bursts of activity at about 40 Hz, known as the *gamma band* of the EEG. Based on the research so far, a burst of gamma frequency activity occurs

²⁰⁶ Hebb, D.O., (1949). *The Organization of Behavior*, Wiley, New York.

²⁰⁷ Singer, Wolf, (1999). "Striving for Coherence," *Nature*, 397, Feb 4., pp. 391-393.

at the moment of perception, and another burst occurs when we enact a motor response.

This sort of very fast EEG activity seems to play an important role in a number of functions besides perception, including memory formation, linguistic processing, and associative learning.²⁰⁸

The occurrence of this low-voltage fast-EEG (LVFE) pattern could potentially explain several important facets of hypnosis, such as focused attention (concentration) and increased flexibility of imagination.

LVFE represents a condition of cortical arousal that normally occurs when we perceive a change or conflict that we don't expect or can't explain. When we perceive something that is contrary to our expectations, we have an involuntary **orienting response** where we momentarily lock our attention onto the new event, ignoring other stimuli for a fraction of a second, at least in conscious awareness.

The brain then goes into a scanning pattern, where it is looking for a way to interpret the new situation. The LVFE is associated with brain function *desynchronization*; neural units that normally function in a coordinated way start processing information independently.²⁰⁹ Independent function in turn may allow the neural units to interact more flexibly.²¹⁰ This may be why we can form dissociated cognitive processes more easily during hypnosis.

When we orient to a novel stimulus, several mechanisms actually come into play. One attentional mechanism used in vision is to attend to a particular area in space. Orienting can involve directing our gaze to a particular place in space to help us focus better on something. But we can also pay selective attention to something **without shifting our gaze**. This allows us to focus our attention differently on the same things; the same visual input can be interpreted as very different perceptual experiences.²¹¹

Not only can we pay attention to a particular region in space, but we can also pay attention to particular **features of an object**. This capacity is

²⁰⁸ Miltner, Wolfgang H.R., Braun, Christoph, Arnold, Matthias, Witte, Herbert, & Taub, Edward, (1999). "Coherence of gamma-band EEG activity as a basis for associative learning," *Nature*, 397, February 4. Pp. 434-436.

²⁰⁹ Lindsley, D. B. (1961). "The reticular activation system and perceptual integration." In Sheer, D.E. (ed.) *Electrical Stimulation of the Brain*. Austin: University of Texas Press, (pp.331-49)

²¹⁰ Pribram, Karl H. (1971). *Languages of the Brain: Experimental paradoxes and principles in neuropsychology*. Brooks/Cole Publishing Company CA: Monterey. (pp. 206-08)

very special because it is what allows us to recognize and categorize objects in situations where they can have ambiguous interpretations. The exact way that object recognition works is not completely understood, but some of the mechanisms have been demonstrated.

It appears that there are separate circuits in the brain for paying attention to object features and for paying attention to regions of space.²¹² That is, perceiving objects has its own attention mechanisms.

While spatial attention involves signals from the visual cortex to the parietal lobes, object attention involves signals from the visual cortex to the **inferior temporal lobes** of the cortex. Together with the **dorsolateral frontal cortex**, the inferior temporal lobes help us to pick what features of an object to attend to best recognize the object.

Our ability to pick out an object from a mass of sensory information seems to be done rather like tuning a television picture. There is a brain circuit that enhances specific neural activity in a particular region independently of stimulus characteristics, like the *brightness* setting on a television. Then, there is a separate circuit which enhances specific features of an object so it can be more easily distinguished from features that would lead to a competing interpretation, more like the contrast setting on a television.²¹³

Together, the "brightness" and the "contrast" settings help us tune into a particular interpretation of sensory stimuli so we can recognize it as a particular object. This tuning happens outside of awareness until the very end of the process, when the object becomes consciously recognizable and can be categorized.

The ability to determine what features to attend is part of our larger **reward expectation mechanism** in memory. We learn from experience what kinds of things are important, and so learn how to pick them out of all the things that impinge on our senses. The brain uses the transmitter **dopamine** in certain critical areas to signal situations where there is novelty or we expect a reward.²¹⁴ This reward mechanism is tied into our

²¹¹ Kanwisher, Nancy & Downing, Paul, (1998). "Separating the Wheat from the Chaff," *Science*, Vol 282, p. 57.

²¹² Ungerleider, L.G. & Mishkin, M. (1982). *Analysis of Visual Behavior*, in D.J. Ingle, M.A. Goodale, R.J.W. Mansfield (eds.) MIT Press, pp. 549-586.

²¹³ Rees, Geraint, Frackowiak, Frith, Chris, (1997). "Two Modulatory Effects of Attention That Mediate Object Categorization in Human Cortex," *Science*, Vol. 275: pp. 835-838.

²¹⁴ Garris, Paul A., Kilpatrick, Michaux, Bunin, Melissa A., Michael, Darren, Walker, Q. David, & Wightman, R. Mark, (1999). "Dissociation of dopamine release in the nucleus accumbens from intracranial self-stimulation," *Science*, Vol. 398, pp. 67-69.

attention and movement systems to coordinate our responses to our environment.

Regions such as the **rostral cingulate motor areas** are positioned ideally to receive information about how we feel and what we need from the various structures of the **limbic system**. They also receive input from the **prefrontal cortex**, allowing a top-down influence from our current planning and goals, and then sending output to the motor systems to drive our behavior.²¹⁵ This mechanism illustrates how our "automatic" actions are guided, by coordinating learned aspects of attention with selection of actions most likely to lead to rewarding results, based on **motivational state** and **task relevance**.

It is not difficult to see how this process could lead to involuntary responses in hypnosis under some conditions. All that would be needed would be for the usual monitoring and inhibiting influence of conscious awareness to become dissociated from the more automatic aspects of the attentional and motor guidance systems that are already present.

The Hemisphere Shift

In this way, novelty automatically triggers a search for the meaning of the stimulus, potentially interrupting our ongoing task-focused mental processing. This corresponds to a fast but passive attentional shift to the novel stimulus, and is associated primarily with one hemisphere of the brain (generally the left).

This fast type of attention also *habituates* rapidly, leaving the left hemisphere activity inhibited when we attempt to pay sustained selective attention. The other (right) cerebral hemisphere seems to maintain a more general sense of vigilance, which habituates more slowly.²¹⁶

This eventually leaves the right hemisphere less regulated by interaction with the left, explaining the greater right hemisphere activity sometimes seen during hypnosis.²¹⁷

Contrary to the claims of many popular authors, it is the interaction of important functions of each hemisphere, and the general flexible reorganization of brain functions during hypnosis that characterizes it, not the dominance of one hemisphere or the other. However, the shift in

²¹⁵ Shima, Keisetsu & Tanji, Jun, (1998). "Role for Cingulate Motor Area Cells in Voluntary Movement Selection Based on Reward," *Science*, Vol, 282, pp. 1335-1338.

²¹⁶ Dimond, S.J. (1979). "Performance by split brain humans on lateralized vigilance tests." *Cortex*, 15:43-50.

²¹⁷ Gruzelier, J.H. & Brow, T.D. (1985). "Psychophysiological evidence for a state theory of hypnosis and susceptibility." *Journal of Psychosomatic Research*, 29:287-302.

dominance appears to be an important factor at one point in a hypnotic induction.

Once the left hemisphere function has been inhibited, and the right hemisphere inhibition by the left has been lifted, a social-nonverbal form of attention becomes relatively more influential. Not only does our cognitive processing change, correlated with the shift in hemisphere function, but **our responses are also more sensitive to subtle social cues in the situation.**

What happens in the brain once the left hemisphere is inhibited depends on the characteristics of the situation, the talents of the individual, and the nature of the suggestion being given. The brain responds more based on the nature of the task we give it than based on the "state" of the hypnotized person.

The hemisphere shift, rather than being a marker of a "hypnotic state" is more like a biological marker of the gateway between vigilant responsiveness to the environment and more internal processing of information. Once the shift has taken place, and we are uniquely sensitive to contextual demands, emotionally responsive to visual imagery, and motivated to understand and cooperate with suggestion, our flexible ability to use both hemispheres as needed comes into play.

The Amygdala and the Hippocampus in Attention

The hemisphere shift is in turn triggered by changes in subcortical brain structures, particularly the relationship between the *emotional significance memory system* related to the **amygdala**, and the *memory mapping system* related to the **hippocampus**.

There are three different components to the attentional system in the brain that maintains our state of consciousness. One component is a **general awareness** of our environment, the second is a system that **relates information about the environment to our sense of self**, and the third is an **activating system** which modulates our level of arousal.

The overall state of consciousness appears to be modulated by the **anterior hypothalamus**, which increases parasympathetic nervous activity and stimulates the **cholinergic** cells in the brain stem. The shift from **noradrenergic** to **cholinergic** control at the brain stem corresponds to the shift from active monitoring and control of our awareness to the "dream" state of passive reflection. This shift is also associated with increasing activity in the **medial thalamus** and **septal hippocampal** circuits, as found in hypnosis (especially at an early point

of the induction process) and during the periodic "trance" states we experience during the day.

Our **general awareness** involves the **thalamus** and **basal ganglia**. This system has an early component which coordinates our response to nonverbal communication and helps synchronize our interactions with each other. This early component of general awareness is the "social-emotional" component of attention that we differentially engage during hypnosis. The thalamus and basal ganglia is also a critical part of the switch that selects which cortical hemisphere will be activated for a particular task, based on contextual cues and expectancy.

The **self-awareness system** is the one more specifically involved in our conscious experience, by referring sensory impressions to our ongoing sense of self. This includes the limbic and posterior inferior parietal components and the posterior inferior parietal lobe itself. This system helps integrate emotional and sensory information into our **conscious perception of "feeling."**

The parietal lobes are strongly implicated in large functional networks that help us select what we perceive in space. These networks also include the dorsolateral frontal cortex and the prestriate cortex. The exact mechanisms are not yet clearly understood, but the attentional system for **spatial perception** seems to be linked somehow to that attentional system for conscious perception of how we feel.

How is our state of consciousness maintained ?

Our normal waking consciousness is established through the activity of the **Reticular Activating System (RAS)**, a noradrenergic circuit in the brain stem. The RAS is particularly involved in activating the left cerebral hemisphere, producing the fast (**beta** and **gamma**) frequency activity that we think of as characterizing alert consciousness. The left hemisphere is most critical to the planning and executing of complex task-oriented behavior.

The right cortical hemisphere tends to have less **beta** and **gamma** activity and more **alpha** under these same conditions, reflecting the "left hemisphere dominance" in most routine tasks. The nature of the task we are performing will determine what kind of specialized processing is needed, and therefore which cortical hemisphere has the most overall activity.

During high emotional arousal, both cortical hemispheres show more **beta** and **gamma** and less **alpha** activity, reflecting the increased demands of processing under urgent biological conditions. During these

conditions, we may still respond to suggestion, but the mechanisms are very different from those in effect during hypnosis. We are responding to a narrow range of cues that are relevant to our emotional state rather than to the usual social cues used in hypnosis.

When the RAS is inhibited, either of two different alternate systems may be activated instead, the **cholinergic** (REM or dream) system, or the **dopaminergic** (reward) system. When the medial thalamic nuclei inhibit the RAS, we have increased **alpha** activity. The increased **alpha** activity in turn helps to produce **theta** activity in the **septal-hippocampal** circuit. The **septal-hippocampal** circuit in turns helps to inhibit the RAS generation of beta frequency activity, helping to maintain the altered state by a feedback loop.

Theta frequency brain activity is most often associated with exploratory activity and the consolidation of learned material into long term memory. More ritualized activities such as feeding and mating, in contrast, are not associated with **theta** frequency brain patterns.

Theta is generally also associated with inhibitory processes, especially selective attention. However, there appear to be at least two different classes of behavior associated with **theta**. One is found in the relaxed, drowsy states, and during sleep. This involves a diffusely distributed low voltage irregular **theta** pattern. It appears to reflect memory consolidation by the hippocampus.

The other form of **theta** is found in states where we are engaged in efficient sustained mental performance. This is a more localized, higher amplitude, and more regular theta pattern, and is more closely associated with successful problem solving and making complex perceptual decisions. This is the theta pattern seen during meditation and hypnosis, and reflects active, highly focused cognitive processing rather than passive consolidation of material into memory.

The difference in theta activity between people is greater than that in one person between waking and hypnotized conditions. This tells us that **theta** frequency activity may reflect the talent for selective attention more than it does the state of hypnosis. These are discrete regular bursts of high voltage theta, as opposed to the irregular diffuse trains of low voltage theta seen in drowsy subjects. These occur in alert-active hypnosis as well as relaxed inductions.

In both hypnosis and meditation with experienced students, relaxed phases of practice are associated with the low voltage diffuse theta, and active mental processing is associated with high voltage localized theta bursts.

The **amygdala** appears to be most critically concerned with coordinating our emotional state with external objects, especially when urgent responses are required. The **amygdala** is involved in aggressive responses, associating emotional states with sensory patterns, and in interpreting the emotional content of spoken language.

The structures related to the **hippocampus** seem to be more highly specialized to build and use detailed sensory maps that we use to orient ourselves. We use the **hippocampus** in cognitive long term memory. It also serves a critical role in selective attention, because we use it to help compare sensory information with what we know about the environment, to evaluate whether something has changed. In this role, the **hippocampus** is largely inhibitory, it helps prevent us from attending to things that seem unimportant.

Together, the amygdala and hippocampus and their related subcortical structures work to select the proper state of consciousness for either the perceived, remembered, or fantasized situation.

Working through their extensive connections to the **hypothalamus**, these two memory systems also help regulate our internal environment both by altering the activity of our autonomic nervous system and by altering the secretion of hormones.

The memory system centered around the amygdala is mostly excitatory, and appears specialized for dealing with external behavior, such as violent emotional responses. The memory system centered around the hippocampus is mostly inhibitory, and appears specialized for processing information internally (selectively) and comparing it with existing knowledge.

Studies show that during hypnosis, the **hippocampus** and related structures are activated, but that activating the **amygdala** causes an immediate end of hypnotic responsiveness, and a return to "waking."

Under alert, externally focused conditions, a strategically located clump of cells known as the **locus coeruleus** is used to determine our state of consciousness. It does this by switching between **exploratory** and **task-driven** behaviors in response to external cues, novelty, error, or confusion.

When we shift our attention inward, creating an **experiential mindset**, control shifts from the **locus coeruleus** to the **thalamus**. This is marked by the appearance of alpha activity in the EEG, and a shift from the dominance of **noradrenergic** nerve systems to and **dopaminergic** ones in driving the **hippocampus** and **amygdala**.

When the subcortical structures are being driven by the **thalamic alpha** rhythm, the **hippocampus** begins to show **theta** activity, indicating selective attention. This in turn causes the alpha activity to slow further, and we have the biological correlates of an altered state of consciousness.

This process can be aided by **habituation to an external stimulus**. But the most critical elements seem to be **internally focused attention** and **absorption**, which create an **expectancy** critical to the shift in processing that ensues in both subcortical structures and cortical hemispheres.

Increased attentional activity is correlated with increasing theta activity in the hippocampal circuit, reflecting its role in selective attention. While the level of excitation is set by the **amygdala**, the inhibition of irrelevant stimuli is managed by the **hippocampus**. The shift between amygdala and hippocampus occurs periodically throughout the day, but is strongly influenced by situational demands.

The onset of "trance-like" states during the day are marked by activity in the **hippocampus**, while more alert states are marked by activity in the **amygdala**. We normally alternate between dominance of one memory system and the other, although this **ultradian** cycling is extremely sensitive to situational demands.

Perceptual Decisions and the Prefrontal Cortex

The place where much of the actual perceptual process seems to take place is the **prefrontal cortex** of the brain. For any basic task, we must somehow select particular representations from the various possibilities presented to our senses, and integrate those representations with existing knowledge, according to the goals of the task at hand. The existing knowledge is organized with the help of the hippocampus, which helps drive the perceptual decision. The decision itself seems to take place in the prefrontal cortex.

The prefrontal cortex, especially the **lateral prefrontal cortex**, is involved in selecting relevant information to perceive from the mass of data impinging on our senses.²¹⁸ The sensory cortex somehow seems to

²¹⁸ Rainer, G., Asaad, W.F., and Miller, E.K. (1998). *Nature*, 393:577-579.

inherit information from the lateral prefrontal cortex, giving it top-down information for interpreting what our senses tell us in terms of a current behavioral goal.²¹⁹

Prefrontal cortex activity in general appears to reflect not only sensory stimuli, but also associated actions and their expected consequences. These expectations are used to help the process of perception. The collective findings about this brain region have led to theory of the prefrontal cortex as an executive control structure. The theory is that this brain region forms a collection of task-relevant information and rules needed to guide a behavior, and uses that information to influence or control both perception and action.²²⁰

This is often called a "**context**," a template of previously successful sensory and response related information that biases processing in favor of task-specific goals. The concept is very similar to that of a **schema**. The prefrontal cortex seems optimally suited to play a central role in the formation and use of these templates.²²¹

Our interpretation of what our senses tell us seems to be built from processing that is guided by a goal. That is, perception is not just "bottom-up," but also "top-down." Our expectations, goals, and desires influence what we perceive. It appears to be the prefrontal cortex which combines ambiguous feature representations with knowledge, plans, goals, and desires, to help decide on an interpretation.²²²

The influence of suggestion may plausibly be theorized to take place by creating a template for the prefrontal cortex to use to bias our subsequent perception.

We have seen some of the basic mechanisms by which suggestion provides "mind-body" effects. The **hypothalamic-pituitary axis** lies at the core of the central regulation of our body systems by our brain. The HPA provides the means by which our body is able to adapt to environmental stressors over time, either acute immediate threats or chronic and sustained ones. This biological mechanism is found in many other animals as well as human beings.

We have also seen that our attention periodically shifts between exploring and focusing on specific tasks, and that alternating our attention between

²¹⁹ Desimone, R. & Duncan, J. (1995). *Annu. Rev. Neurosci.*, 18:193-222.

²²⁰ Cohen, J.D. & Servan-Schreiber, D. (1992). *Psychological Review*, 99:45-77.

²²¹ Miller, Earl K. (1999). "The Prefrontal Cortex: Complex Neural Properties For Complex Behavior," *Neuron*, 22:15-17, January, 1999.

²²² Schall, Jeffrey D. (1999). "Weighing the evidence: how the brain makes a decision," *Nature Neuroscience*, 2:2, pp. 108-109.

different aspects of our environment or our internal experience can precipitate these shifts as well. These are mediated by subcortical structures, especially the amygdala and the hippocampus, which in turn form feedback loops with the brain stem to create and maintain different states of consciousness. Different states of consciousness are specialized for different kinds of activity.

Human beings have the additional capacity to generate imagined stressors for themselves, by worrying about the future or feeling guilty about the past. This is due to the more recent evolutionary appearance of the prefrontal cortex, a planning and interpreting center in the brain.

The **prefrontal cortex** is located strategically to allow us to manipulate our own perceptions and interpretations. This in turn gives us a means to influence our body by using our mind.

When taken from our hunter-gatherer environment of responding to immediate and extreme stressors, and placed into the modern environment of chronic worries, some potential weaknesses in our "design" become apparent. Most specifically, we are capable of using our mind to trigger acute stress responses over long periods of time, which can create havoc with many of our body systems.

We not only have a generalized physiological response to either stressors or imagined stressors, but we also have a multitude of more *specific responses to stimuli or imagined stimuli*. We have a specific shivering response to cold; specific sweating and blistering responses to heat; and many other "reflexes" of various kinds that help protect us and maintain our biological state of balance. Most of these can be triggered by a **sufficiently convincing illusion** just as well as by a physical stimulus.²²³ This was one of the most interesting discoveries made by researchers studying hypnosis and suggestion.

In fact, specific physiological responses are the rule, and generalized response is the exception. That's why the discovery of a **generalized stress response** by pioneering researcher **Hans Selye** was so revolutionary.

Much of the research into psychological factors of disease has focused on the generalized stress response, but more specific mind-body effects are also important. This is especially true with regard to the class of

²²³ T.X. Barber documented many examples of physiological responses to illusory stimulus in his 1969 book, *Hypnosis: A Scientific Approach*, Jason Aronson, Inc.. Barber's research is particularly pertinent here because his data supports the notion of specific suggestion effects independently of any presumed hypnotic trance state.

symptoms associated with *neuroses*, and that is the province of **suggestion**.

Switching Between Cognitive Modes

We've seen that the brain regulates the body through control of chemical messengers, in response to our environment and also in response to our (mutable) **perception** of our environment. We've also seen that our responses consist of both general and specific physiological mechanisms.

But there is at least one piece of the suggestion puzzle missing. We don't always respond to suggestion the same way. Sometimes we respond very strongly, and other times less strongly, or not at all. Why and how do we shift our state of consciousness in response to stimuli in our environment ?

Hypnosis is just one of many kinds of situations where we seem to respond particularly strongly to imagined stimuli. There is also sensory isolation, relaxed attentiveness, extreme fear, extreme frustration, CNS depression, fasting, flagellation, meditation, ecstatic dance, rhythmic drumming, emotional music, chanting, rituals and slogans, forced immobility, and sudden surprise. What do all of these various conditions have in common ?

They all involve our immediate sense that something is wrong, a sense of confusion or conflict. This is part of the natural error detecting circuitry of our brain, located in the **anterior cingulate cortex (ACC)**, a curve of gray matter located just beneath the frontal lobes of the brain.^{224 225}

When the ACC detects complexity or conflict, such as perceiving some unexpected response to a habitual action, it sends a signal to the **locus coeruleus (LC)**, a central switching point at the base of the brain. The LC in turn appears to switch our cognitive mode from task-focused attention to more of a flexible scanning mode, characterized by fast low voltage wave activity and general *desynchronization*. This switching mechanism seems to be common to primates in general, not exclusive to humans.²²⁶

²²⁴ Carter, Cameron, & Cohen, Jonathan, (1998). *Science*, 280, pp. 747.

²²⁵ Brown, K.S., (1999). *New Scientist*, February 13, 1999, pp. 39- 41.

²²⁶ Research by Gary Aston-Jones and colleagues, reported in Brown, K.S., (1999), *New Scientist*, February 13, 1999, pp. 41.

Note that this implies a model of hypnotic induction that better explains rapid "confusion" or "shock" inductions than theories based entirely on relaxation. Theories in terms of relaxation and alpha activity require slower, more synchronized activity in the brain, the opposite of what we see immediately following the orienting response in rapid hypnotic inductions.

Relaxed inductions seem to work by using focused attention to **habituate** the left hemisphere, which then becomes desynchronized this shifts our cognitive mode. Shock or confusion inductions seem to work more directly by generating an orienting response and **desynchronizing** brain activity, to shift cognitive mode, rather than working through habituation first.

Review of Chapter 7

- It is useful to think of hypnosis as involving an *altered state* to the extent that this helps us recognize distinctive variations in response between "hypnotized" and "non-hypnotized" people. This relates to differences in the structure of our consciousness in and out of hypnosis.
- There are significant differences in how "low hypnotizable" and "high hypnotizable" people process suggestions, and also significant differences within each of those two groups for processing different kinds of suggestions.
- The trickiest part is determining definitively who is "hypnotized" and who is not, without recourse to circular arguments such as defining "being hypnotized" as passing suggestibility tests, which in turn prove that we are "hypnotized."
- In essence, a "hypnotized" person is exhibiting different preferred modes of processing information, based on their talents, beliefs, and expectations about hypnosis, and the cues provided by the hypnotist and the situation. If they are "highly hypnotizable," they may also be highly absorbed in suggested roles or fantasy scenarios. **The "trance" is a result of responding to a specific set of suggestions and implications.**
- There are significant differences between the subjective experience of people "in trance," just as there are significant differences in the experience of people "not in trance." The key is to find stable commonalities in the experience of all people "in trance" that are not found in people "not in trance."

- Individuals differ in the extent to which they respond to hypnotic suggestion, as well as in the specific way in which they respond, such as what cognitive strategies they use to resolve problems posed by hypnotic suggestions. Hypnotic talent, while collectively being considered under the single label of “hypnotizability,” is often conceived of as having a number of dimensions, most commonly between 3 and 9 dimensions.
- The variability that exists with respect to hypnotic performance highlights the relevance of **both trait influences and situational influences** in hypnosis.
- The “depth of trance” typically is related in a complex way to a large number of factors, and reflects as much the **depth of our conviction that we are “hypnotized”** as anything else. This in turn reflects the degree to which we will be able to attenuate our reality testing in order to pay more selective attention to the environment and parts of our own ongoing experience. This changes generally along with our **immersion in selected roles**, and our **motivated cognitive commitment** to actively carry out what has been suggested by the hypnotist.
- Even among the “highly hypnotizable” people, there are great differences in the way they respond to suggestions, using different cognitive strategies and information processing modes and exhibiting different phenomena. This is true “in trance,” just as it is true at other times.
- “Trance” builds on basic shifts of attentional focus common to all of us, but varies in its exact nature from person to person depending on their preferences and talents. Not everyone is capable of passing difficult classical tests of “hypnotic” responding in an involuntary way, even if they are capable of other effects that result from shifts in awareness. It is common to say that everyone is capable of experiencing trance, even though not everyone can use it in the same way and experience the same effects.
- Extreme forms of “trance” permit remarkable and convincing splits of awareness and behavior in some cases, depending on the talents of the individual. The most dramatic phenomena of hypnosis appear to involve either intense involvement in fantasy, or attention control so flexible that it can split the semantic content of a perception or memory from the episodic component.
- The brain mechanisms of trance seem to build upon the periodic shifts of attention we experience during the day. Especially important

is the shift between an operational mindset associated with activity in the amygdala, and an experiential mindset associated with activity in the hippocampus. Hypnotic trance builds upon the **experiential mindset**, where we have more flexible internal control of attention.

- The shift between experiential and operational mindsets during the day relates to changes in neurotransmitter systems in the brainstem, shift in subcortical activity, and changes in the way the cerebral hemispheres are used. Structures throughout the entire brain relate to each other differently in different "states of consciousness" we experience throughout the day.
- The experiential mindset appears periodically during the day, but also can be produced through a learned cue, or through a combination of sensory habituation or orienting response, plus an expectation of entering such a mindset.
- Hypnotic induction involves not only the **experiential mindset**, but also building it further into a **cooperative mindset**, where we are paying a special kind of attention to the social cues and context provided by the hypnotist. This is why the "**trance**" alone does not define hypnosis, unless hypnotic "**rapport**" is also present.

Summary of Chapter 7

The historical **hypnotic trance**, as a profound somnambulistic state of detached awareness, is not required for hypnosis or for the effective use of suggestion. It represents one of many kinds of appearance that a person can take on during hypnosis.

Our understanding of states of human consciousness in general is too sketchy at this point to make many definitive statements about the underlying physiology of a putative **hypnotic state**. However, we do have strong evidence that much of what we see during hypnosis often involves a shift in cognitive processing from a more common operational mode to a more experiential mode.

The unique characteristics of the experiential cognitive mode allow hypnosis to take place more easily, as our attention is then also engaged by the hypnotist. There is a transition from the "trance" in the trivial sense of defocused or internally focused awareness, to "trance" in the more interesting sense of a **cooperative mindset** with the hypnotist.

In the experiential mode of cognition, splitting of awareness into parallel conscious or unconscious streams becomes easier, especially for some

people, and it becomes possible to engage our attention in the unique manner used in hypnosis.

The experiential mode of cognition has a number of distinctive characteristics, and these appear to coincide with the characteristics often describes for so-called *optimal performance states*. These states are probably better described as psychological conditions where we are **better able to make use of existing skills and talents in a spontaneous (effortless) way**, dissociating them from awareness, rather than analyze a situation or learn new cognitive skills.

This characteristic of the experiential mindset, the capacity to **dissociate existing skills and talents from awareness**, appears to be at the heart of the phenomena of **automatisms**, as well as the capacity to **change our sense of identity and take on new roles** during hypnosis.

The Story So Far ...

When we talk about hypnosis as historically defined, we are referring to a defined session where we make particular use of suggestion, beginning with an "induction," and ending with a "waking." Although hypnosis involves suggestion, suggestion is not by any means limited to times when we are doing hypnosis. Suggestion is with us in many kinds of situations. It is an important part of our capacity for self-regulation, a part for which we don't feel directly responsible. During hypnosis, we use specific associations and expectations to help increase the effect of suggestion in particular ways.

*During the session, the most notable thing that happens in psychological terms is that our awareness is altered. The way we think and feel changes; to **focus on our own experiences and fantasies rather than our ability to operate on reality**. This shift in thinking and feeling is commonly known as a "trance," and may be rooted at least partly in the normal variation in attention we experience during our **activity/rest cycles**.*

Like the unconscious mind, the trance also carries a lot of historical baggage that is not well founded in psychological science. Though it is not as distinct a state as the popular mystique might lead us to believe, hypnosis does involve changes in awareness that are fascinating and potentially very illuminating.

Further study of the way cognitive and neurological processes change during hypnotic suggestion may tell us a great deal about the way the mind works in general, since suggestion has an overwhelming effect on our conscious awareness.

Chapter 8

Rapport

*The Cooperation Mindset and the
Hypnotic Dance of Intimacy*

Hypnotic Cooperation and Intimacy

It may not be immediately obvious, but an important form of self-regulation we perform every day involves the emotions we experience when we interact with other people. We regulate and express our feelings of joy, sadness, loneliness, attraction, fear, anger, and so on, while dealing with other people in a variety of different roles and situations.

This happens so often and starts so early in our lives that we often take it completely for granted. It's not until something goes wrong with this ability, or we unsuccessfully try to simulate human behavior with artificial intelligence, that we begin to realize how important it is in our social interactions.

When we think of *cooperation*, we usually think of a deliberate decision to work together. Hypnotic cooperation is of a different sort, more like the bond we have with a close friend, or the prestige with which we hold a mentor, than a conscious decision. This type of cooperation is affected by the perceived qualities of the other person, their effectiveness at communicating meaning in an engaging way, and the kind of past experiences we have had with that person.

The special human capacity for a trusted mode of communication.

Under certain conditions, we shift our attention to our own experience rather than to objects in the environment, and the voice of another

becomes our trusted guide. It's as if in some sense we have returned to some earlier time when our survival depended upon our ability to enter each other's thoughts and feelings to band together against a common hostile environment. Or from another perspective, as if we returned to an earlier time in our own lives when we shared a close emotional bond with a caregiver. There is a sharing of experience where we open ourselves up to each other in a profound way.

Dramatic responses to hypnosis are expressed through several talents.

Having made this connection with someone, we make use of our talents to bring about what we believe they expect to happen, and what they communicate that they expect to happen through *suggestions*. This is a capacity common to all of us, but expressed in different ways and to different degrees in different people.

Evolution has provided us with a number of mechanisms for synchronizing our behavior with each other. Our survival as a species has depended to a large extent on our unique ability to cooperate. In the environment in which Homo Sapiens emerged as distinct from the other primates, cooperation for obtaining food was probably paramount, and communication was entirely oral and face to face. The unique degree to which Humankind depended on each other to survive is linked to the traits they evolved to cooperate and communicate in that environment.

The most important form of synchronization for human beings in the evolutionary perspective would be the ability to come to a common understanding and act in unison. This type of synchronization is much easier to observe in other animals, where we can see ants or bees or herd animals communicate rapidly in subtle ways to coordinate their actions. It is just as evident in humans, who are very definitely social animals, but we have to look a bit more closely.

Human synchronization revolves around our central evolutionary feature among the animals, **oral communication**. The biggest anatomical differences between humans and other primates are not just dexterity, but specifically the dexterity of our sound-producing anatomy and our lower face. The varied sounds we can produce, plus the variety of things we can express with our faces, provide the basis for the most sophisticated system of communication known among the inhabitants of the earth, human speech.

The way in which human speech is produced provides many different ways for us to synchronize our minds and bodies with each other in order to foster more effective communication. In a primitive non-literate setting, with no other basis for a common understanding, it would have been critical to have evolved such means for humans to come to an understanding at an emotional level, to empathize with each other. Many

varied non-verbal cues, especially in the face and in the pattern of our breathing, serve to inform us of another person's intentions and help us regulate our emotions appropriately during a face to face interaction.

Communicating effectively face to face requires us to synchronize the way we pay attention to each other. This creates a psychological climate where we feel that we are understood and where we understand each other. This causes us to be more responsive to social cues, to have a sense of cooperation at a very gut level.

This description could apply to almost any conversation between people who trust each other and are paying close attention to each other. While this kind of rapport is undoubtedly part of the biological foundation for hypnotic suggestion, hypnosis requires something more. Not all intimate conversations are hypnosis. Hypnosis makes particular use of certain elements found in the rapport of intimate conversations, and builds on them to go farther.

Imagination Plus Intimacy

Hypnosis is different in some ways from other types of interpersonal communication. There is a particular style of metaphorical persuasion used by the hypnotist while setting and making use of various kinds of stated and implied expectations. There is also a characteristic receptive and compliant appearance to the person being hypnotized. It appears that the hypnotist is somehow altering the subject's awareness and behavior by means of the hypnotic procedure.

Students of hypnosis have long found that hypnosis leads somehow to a generally enhanced **suggestibility**. By this is meant a condition where the hypnotized person *complies with verbal suggestions*, as if they had a high degree of trust in the hypnotist and motivation to follow their lead. Some experts consider this to reflect a kind of **social sensitivity**, rather than suggestibility.²²⁷

Upon careful observation, this affinity of the client for the suggestions and behavior of the hypnotist goes well beyond just responses to verbal communications. The client also is particularly well attuned (though not necessarily consciously) to the body language of the hypnotist, and is generally unaware of this degree of affinity or **rapport**. Moreover, the client's behavior, including both directly willed and some autonomic responses, comes into accord to a degree with the behaviors of the

²²⁷ Rossi, E.L. & Cheek, D.B., (1988). *Mind-Body Therapy: Methods of Ideodynamic Healing in Hypnosis*. New York: W.W. Norton.

hypnotist in what appears to be a particular case of a social imitative or intimacy instinct.

One well known example of this **rapport** is termed **interaction synchrony**. Interaction synchrony is a phenomenon observed in intimate communications in both humans and other animals where the posture, vocal qualities, movements, and other rhythmic behaviors of the participants subtly mirror each other in various ways.^{228, 229, 230, 231, 232, 233}

In some techniques of hypnotic induction, this synchrony is used deliberately or cultivated as a strategic skill, as a means of deepening **rapport**. In **Neurolinguistic Programming**, for example, this is considered part of *pacing and leading*. It is (in a more general sense) considered a central part of virtually all hypnotic inductions, as well as an important part of any kind of intimate communication.^{234, 235} In addition, unconscious activities, such as cardiac and breathing rate and EMG readings are also found to mirror each other in the participants.²³⁶

The biological significance of this social instinct appears to be a kind of mutual regulation of arousal level by mutually meaningful stimulation. In psychological terms, the result is to build trust through familiarity and intimate attention.

¹Reite, M. and Field, T. (eds.), (1985), *Behavioral biology : The psychobiology of attachment and separation*. Orlando: Academic Press. p. 415.

²²⁹Banyai, E.I., (1985, August), *On the interactional nature of hypnosis : A social psychophysiological approach*. Paper presented at the 10th International Congress of Hypnosis and Psychosomatic Medicine, Toronto.

²³⁰Banyai, E.I., Meszaros, I., Csokay, L. (1984, May), *Further data on the psychophysiological factors of the interaction between hypnotist and subject*. Paper presented at the 2nd European Congress of Hypnosis, Abano Terme-Padova, Italy.

²³¹Condon, W.S. and Ogston, W.D. (1967). A segmentation of behavior. *Journal of Psychiatric Research*, 5, 221-235.

²³²Stern, D., (1982), Some interactive functions of rhythm changes between mother and infant. In M. Davis (Ed.), *Interaction rhythms : Periodicity in communicative behavior*, (pp. 101-117)New York : Human Sciences Press.

²³³Chapple, E.D., (1982). Movement and sound : The musical language of body rhythms in interaction. In M. Davis (Ed.), *Interaction rhythms : Periodicity in communicative behavior*, (pp. 101-117)New York : Human Sciences Press.

²³⁴John Grinder and Richard Bandler, (1981), *Trance-formations*, Utah : Real People Press, p. 43

²³⁵Dilts, Grinder, Bandler, Bandler, DeLozier, (1980), *Neuro-Linguistic Programming : Volume I, The Study of the Structure of Subjective Experience*, Meta Publications, pp. 115-117.

It is also known that prolonged isolation causes social cues to become more influential on consciousness and behavior.^{237,238} This is sometimes referred to as a 'hunger for stimulation.'

We need stimulation from each other, and we demonstrate this need through various conscious and unconscious rhythms when we interact. Hypnosis involves building on these rhythms to alter consciousness in a particularly dramatic way.

With talented clients, there is an active, imaginative absorption in an ongoing fantasy guided by the hypnotist, in addition to an implicit trust and an intimate communication. The two dimensions of imagination and intimacy work together to produce the more dramatic experiences of hypnosis.

It is possible to experience some hypnotic effects without another person giving suggestions, since even in isolation our brain is still structured as a social communication organ. Much stronger hypnotic effects are usually experienced during hypnosis where another person is acting as guide. This is probably because we can relinquish more of our conscious control when another person is acting as guide, allowing us to become farther removed from the need to attend reality consciously.

It is also possible for people low in the *hypnotizability* talent to experience some of the effects of hypnosis, and to participate in it at some level. However, they find it difficult or even impossible to experience the more dramatic effects, which is sometimes very frustrating. While intimate rapport may be all that is really needed for hypnosis, the most interesting effects as measured on the hypnotizability scales also require a certain attentional flexibility that not everyone possesses.

Negative attitudes toward hypnosis are always sufficient to make someone a "low hypnotizable." However, positive attitudes by themselves are not sufficient to make someone a "high hypnotizable" according to the scales. *They must also have the ability to engage and maintain the rhythm of hypnotic rapport, which requires a particular flexibility in using our attention.*

²³⁶Linton, P.H., Travis, R.P., Kuechenmeister, C.A., & White, H., (1977), Correlation between heart rate covariation, personality and hypnotic state. *American Journal of Clinical Hypnosis*, 19, 148-154.

²³⁷Heron, Doane, & Scott, (1956), Visual disturbances after prolonged perceptual isolation. *Canadian Journal of Psychology*, 10, 13-16.

²³⁸Barabasz, A.Z., (1980), EEG alpha, skin conductance and hypnotizability in Antarctica. *International Journal of Clinical and Experimental Hypnosis*, 28, 63-74.

Good hypnotic subjects are found to have higher imaginative absorption or fantasizing scores on various scales than either moderately or poorly hypnotizable subjects. While not essential to all situations considered under the rubric of hypnosis, *many of the most dramatic hypnotic phenomena seem to involve both **motivated response to suggestion** and an **extreme sort of imaginative involvement**.*

The role of a classical hypnotic induction appears to be, at least in part, to help the subject direct their attention to cues selected by the hypnotist, who provides verbal feedback to the subject about sensations perceivable in their own body which were previously outside of awareness. The subject then begins to direct and narrow their attention on these sensations in accordance with the hypnotist's instructions, and begins to confuse cause and effect, *attributing the sensations to the suggestions of the hypnotist.*

In someone sufficiently able to let go of their sense of control, they eventually establish the expectation of following the hypnotist's lead, and they begin to respond in the peculiar hypnotic way to suggestions. The hypnotist has become a "**structured frame of reference in the background of attention which supports, interprets, and gives meaning to all experiences.**"²³⁹

The degree of trust and acceptance of the subject for the hypnotist makes this situation a particularly intimate form of communication, though the motivation to respond varies over time. Up to a point, the "deeper" the hypnosis, the more sensitive the client is to the hypnotist's suggestions, the more narrowly focused on them, and the more motivated they are to carry out the suggestions.

A "light trance" reflects a relaxed trust between client and hypnotist, where only simple posthypnotic suggestions will be followed. The stronger conviction and trust needed to follow more elaborate or dramatic posthypnotic suggestions requires a "medium" trance. The complete trust of a "deep" trance includes the conviction and motivation to carry out even bizarre posthypnotic suggestions. In a "deep" trance, the client has a strong enough belief that they are hypnotized that they no longer need to have their eyes closed to remain hypnotized.

At some point, with highly hypnotizable people, the "depth" becomes so great that the client no longer responds at all, but becomes completely passive and unresponsive. This appears to reflect an extreme of the experiential mindset where the client becomes absorbed in their own

²³⁹Shor, R.E., (1959), Hypnosis and the concept of the generalized reality orientation. American Journal of Psychotherapy, 13, p. 586.

physiological processes and no longer responds to external cues, even from the hypnotist (in fact, the startle reflex is inhibited!). That is, **the experiential mindset eventually overcomes the cooperation mindset**, in the most extreme “depths” of hypnosis.

In the deepest hypnotic mindset, the conviction that we are hypnotized becomes even stronger than the conviction that we need to respond to any external stimuli, including the hypnotist. Correspondingly, we attenuate all external stimuli and become completely absorbed in our own experience.

Cooperation of a Special Kind

The art of hypnosis appears useful at least, even to the most skeptical of informed observers, as magician-debunker James Randi notes:

Since there is no adequate definition of “trance” and no means to test for that state, it appears more likely that hypnotism is a mutual agreement of the operator and the subject that the subject will cooperate in following suggestions and in acting out various suggested scenarios. As such, hypnotism may be a valuable tool in psychology.²⁴⁰

This reasonable description hides the scientific as well as practical subtlety that the “agreement” is not necessarily made consciously. The subjective experience of carrying out suggestions *compulsively* and believing in imaginings in *near-delusional* fashion leaves us with some legitimate psychological effects to explain. We also have to contend with the well-known *non-conscious movements* and *non-conscious perception* evidenced in hypnotic responses and similar phenomena.

As researchers T.X. Barber and Nicholas Spanos put it succinctly:

“... hypnotic phenomena involve genuine changes in the subject’s experience that cannot be explained away in terms of faking or sham behavior.”²⁴¹

²⁴⁰ Randi, James, (1995). “An Encyclopedia of Claims, Frauds, and Hoaxes of the Occult and Supernatural,” St. Martin’s Griffin: New York, pp. 126.

²⁴¹ Spanos, N.P. & Barber, T.X., (1974). Toward a convergence in hypnosis research. *American Psychologist*, 1974, 29, pp. 500-511. Page 508.

This is a particularly meaningful comment because Barber and the late Spanos have long been among the most prolific non-state theorists, and are frequently quoted by writers skeptical about the existence of hypnosis. As non-state theorists, they emphasize in their writings that the effects of hypnosis do not require any special state of consciousness to explain. Yet the quote above indicates that they do consider the *effects themselves* genuine.

Researcher Peter Sheehan studied the cooperative relationship between hypnotist and client, and found that it is **more than what we normally think of as a cooperative arrangement**. He called it a *motivated cognitive commitment*.^{242 243}

Sheehan's work has provided experimental validation of the long-held clinical observation that therapy clients often form relationships of warmth, trust, and attachment to their therapist, especially in cases where the therapy is effective. The causality here is probably somewhat circular. A good therapeutic relationship makes it more likely that therapy will be effective, and effectiveness of therapy will often make it more likely that a closer bond will develop with the therapist.

It is important to realize that *motivated cognitive commitment* is not simply a desire to conform or comply. It is a motivation to process the hypnotist's communications in an active way in order to solve the problem of responding appropriately to suggestion.²⁴⁴ This point turns out to be essential for understanding why different people respond differently to the same suggestion.

This observation has special significance to our understanding of people's responses to hypnotic suggestions. It tells us that people do not simply absorb suggestions passively and carry them out as if we were installing computer programs. We process suggestions in an attempt to understand their meaning and cooperate actively with the hypnotist. This leads to the very important fact that **different people, even among those most "highly hypnotizable," have their own personal and unique ways of responding to hypnotic suggestion**.

It is likely that there is no one single "hypnosis module" in the brain. Rather, *hypnosis in general taps into the varying capacity that people have (through many varied means) for entering into a unique form of*

²⁴² Sheehan, P.W. (1971). "Countering preconceptions about hypnosis: An objective index of involvement with the hypnotist" [Monograph]. *Journal of Abnormal Psychology*, 78, 299-322.

²⁴³ Sheehan, P.W. & Dolby, R.M. (1979). "Motivated involvement in hypnosis: The illusion of clinical rapport through hypnotic dreams." *Journal of Abnormal Psychology*, 88, 573-583.

²⁴⁴ Sheehan, Peter W. (1991). "Hypnosis, Context, and Commitment," in Steve Lynn and Judith Rhue (ed.) *Theories of Hypnosis: Current Models and Perspectives*, pp. 527, Guilford Press.

motivated cooperation. This motivated cooperation is an extension of the rapport we find in any intimate conversation. The same process that allows us to share emotional experiences can be taken a step farther in some cases to allow one person to guide the other person's perceptual experience and behavior.

Review of Chapter 8

- Among the most common, important, and interesting forms of self-regulation involve regulating our own emotions in interaction with other people.
- We take emotional self-regulation and mutual regulation in social situations largely for granted.
- In some situations, we create a deeper, more trusting kind of connection with another person than our usual interactions. We influence each others' emotions and thoughts in a particularly effective and direct way.
- Deeper connections with other people involve a particular use of attention to engage each other.
- The particular kind of attention we use to engage each other often involves rhythms, especially rhythms that aid people in synchronizing both behaviorally and biologically with each other.
- Under some conditions, our connection with another person can take the form of a *motivated cognitive commitment*, and our thoughts and feelings seem to conform to what the other person expects.
- People may respond differently to the same suggestion. Each person brings their own perspective and talents to hypnosis, and each is motivated to enact what they think the hypnotist expects of them, even if they don't feel responsible for bringing it about.
- Although we are capable of producing suggestion effects by ourselves, the effects are generally much stronger when we are interacting with another person.
- A negative attitude is generally sufficient to prevent someone from experiencing hypnotic phenomena, but a positive attitude is not always sufficient to allow us to experience hypnotic phenomena. We also need a particular talent for using our attention flexibly.
- When we connect with another person in a way that creates a motivated cognitive commitment, they become a **structured frame of reference in the background of attention which supports, interprets, and gives meaning to all experiences.**

Summary of Chapter 8

We have a natural ability to synchronize with each other, biologically and behaviorally, in a deep connection where we help regulate each others' thoughts and feelings. Under these conditions, some people are able to use attention in a flexible way, allowing another person, such as a *hypnotist*, to interpret and give meaning to what they experience. They become motivated, in a way they are not directly aware of, to bring about what the hypnotist wants and expects by use of their own talents and thinking patterns.

The Story So Far ...

*Our capacity to regulate ourselves is central to health and well-being. As social creatures, we evolved with certain talents for influencing and regulating each other through words and rhythms. Although we are able to alter our own awareness, the effect of other people's words and rhythms are often more profound. In some cases, this can result in a situation where **one person can interpret and give meaning to the experiences of another**. This allows us to manipulate the mindset of another person to change their immediate awareness in a very flexible way, and motivate them to enact suggestions they don't feel responsible for carrying out.*

Chapter 9

Role Taking

Involvement and Our Sense of Identity

Who I Am Depends On Who I'm With

The reason why we find the behavior of "hypnotized" people on stage so amazing is that we think of personality as a stable and constant thing. So when someone plays a role where they become someone else, we tend to assume that they are either "pretending" or their mind is being controlled by the hypnotist. Neither is necessarily true.

One of the big questions in psychological science is why we act the way we do, where our personality comes from. The usual answer we hear from the social science tradition is that people are raised by the efforts of their parents. The usual answer from behavioral geneticists is that we are the product of our genes. Neither of these is the full answer, and in fact, both are much less influential than most of their proponents claim. This is particularly true for the social science model of parenting.

It is true that we have stable traits to our behavior, and most of us have a stable sense of who we are. It is also true that this is partly the result of our heredity and partly the result of what we learn from our environment. What is misleading is the claim that heredity determines some personality traits, and also the contrary claim that parenting is a big influence on personality.

Studies of identical twins show that about half the variation in most stable personality traits can be attributed to their identical genes. Some traits, such as intelligence, seem to have a slightly higher dependence upon heredity, but they all average around 50%. The effects of our genes are enough to cause some striking and unexpected similarities in identical twins, but not enough in personality to completely decide any given trait.

Even more striking than the bizarre similarities between identical twins raised apart (such as marrying women by the same name, choosing the same career, and preferring the same brand of beer), are the differences between identical twins raised together. If genetics plus home environment determined our personality, then we would expect identical twins raised together to be far more alike than those raised apart, but instead the opposite is true.

It has been a robust finding in psychology that we cannot predict a person's characteristics from their home environment. Some people respond to a pleasant, advantaged environment by rebelling and becoming losers, while some victims of horrid childhood abuse overcome it to become not only healthy but exceptional. The variations must result from some combination of our genetic traits and environmental factors outside our home.

One very credible and persuasive alternative is that we are capable of *developing and expressing different sets of traits and personas in different environments*. The concept of "multiple personalities" may be overdone in popular culture and over-diagnosed by some clinicians, but it wasn't invented out of whole cloth. It came from the observation that people often seem to act differently (sometimes very differently) in different situations. Pioneering psychologist William James said:

"Properly speaking, a man has as many social selves as there are individuals who recognize him and carry an image of him in their mind... we may practically say that he has as many different social selves as there are distinct groups of persons about whose opinion he cares. He generally shows a different side of himself to each of these different groups." (William James, *Principles of Psychology*, 1890).

We act one way with our friends, another with our co-workers, a third with our families, and all of these may be different from the way we were with the family in which we were raised. One person may play many different roles in their life, defined by the shared beliefs, expectations, and culture of the various groups in which they play those roles.

The difference between this common experience of taking on different roles and the more extreme case of so-called "multiple personalities," or "dissociative identities," is that the pathological case involves an extreme degree of isolation between the roles. They seem to each have memories and talents that are unavailable to the other roles, and people involved in one role appear completely unaware of the other roles. Normally, we are aware of all of our roles, even though we only take on

one at a time. We switch between them as a natural result of the social situation, but we realize we are switching roles.

The most extreme "normal" (non-pathological) example of role switching is found in language, the phenomenon sometimes known as "code switching." This is where children learn one language among one group of people, such as their birth family, and another with another group, such as their peers. In some cases, the children use one language exclusively with their parents, and the other exclusively with their friends. They grow up learning to switch from one language to another depending on who they are with. Careful observation shows that they even seem to think in terms of different languages in different social contexts. This is an extreme example, but role-switching turns out to be the rule rather than the exception.

James Council did an experiment where he tried to determine the relationship of imaginative absorption and hypnotizability. He measured the ability of college students to become absorbed in imaginative activities. Then he hypnotized them. The people who scored highest on absorption were also the easiest to hypnotize. However, Council discovered remarkably *that this effect only held if he hypnotized them in the same room where they took the absorption test !*

In another experiment, Council gave a personality test designed to look for signs of emotional problems. He found that if he gave a questionnaire about traumatic experiences first, the results of the personality test showed much greater emotional problems. Simply asking people to think about traumatic events caused their scores on a subsequent personality test to change.²⁴⁵

In addition to calling much of our personality testing research into question, these results point out that personality is not as stable as it has often been assumed. People do take on meaningfully different roles in different social contexts, based on things as subtle as the room they are in and what they were thinking about just previously.

Switching between different roles is not something that was invented to try to explain hypnosis or multiple personality disorder. It is a powerful intuitive concept that also makes sense from an evolutionary perspective.

Children would not be very successful in any known culture if they simply imitated adults. They need some way of learning what is appropriate behavior and effective strategies in different environments, such as that of their peers vs. that of their home life. Children universally need a way of

²⁴⁵ Council, J. R. (1993). "Contextual effects in personality research". *Current Directions in Psychological Science*, 2, 31-34.

going beyond the behaviors they can learn directly from their parents, while still behaving in a way their parents consider acceptable. They need to be able to take on different roles from very early on. A most elegant expression of this idea is the group socialization theory of Judith Rich Harris.²⁴⁶ Her book, *The Nurture Assumption*, makes a powerful (and entertaining) case for the concept of role taking in explaining why our adult personality does not simply result from a combination of genetics and home environment.²⁴⁷

Coordinated Involvement

We don't just switch roles from one social context to another, we also become involved in each role to different degrees under different conditions.

A hypnotic performance or a yoga or TM session is in broad terms an **involvement** in a particular set of mental processes. Just as greater involvement in a physically difficult or emotion inspiring event produces stronger responses, we might say that greater involvement in general draws more strongly upon our body. This is just a very general way of measuring the total coordinated effort we are putting into something.

Most deliberate feats performed by human beings require us to at some level precisely coordinate many biological processes and physical actions.

Walking or running isn't simply a matter of shuffling the feet mechanically at some random time. It is an elaborately orchestrated collection of muscular contraction and relaxation supported by changes in the function of many internal organs, in response to some sort of internal goal, an "intention" to walk somewhere.

Some of these changes, like heart rate increasing and breathing faster and deeper, are relatively generic to "physical effort." Other changes are more specific to the activity at hand. All of these changes happen together, however, and there is no way to consciously perform all of this coordination, but we know it is being done.

Just how does our "intention to get up and walk to the store," originally just a thought in the mind, produce all of this highly coordinated activity? If we don't understand something that simple, how can we assume to

²⁴⁶ Harris, J.R. (1995). "Where is the child's environment? A group socialization theory of development." *Psychological Review*, 102, 458-489.

²⁴⁷ Harris, J.R. (1998). *The Nurture Assumption: Why Children Turn Out The Way They Do, Parents Matter Less Than You Think and Peers Matter More*. Free Press.

understand the more exotic processes that supposedly underlie hypnosis ? This is covered in more detail in the chapter on suggestion and how we control our own body.

At greater degrees of involvement, or “depth of trance,” we become more totally involved in the sensations or fantasy, and lose our conscious awareness of other things (though they are still in “the background” and can still potentially affect us). We also gain an **increased ability to disconnect from our existing sense of identity, allowing us to experiment with different identities.**

A very important part of hypnotic behavior closely related to trance is **role enactment**, or the taking of expected roles. Taking on particular roles is a central aspect of fantasy. It is largely role enactment rather than trance *per se* that causes the dramatic effects seen in stage hypnosis.

Role enactment requires three things: *role definition*, *role congruence*, and *role skill*.

Role definitions are established through our early learning within a particular culture where the roles are defined. The cultural definition of the role determines how much involvement in the role is considered appropriate, and so sets our expectations for how dramatically we should take on that particular role.

Role congruence helps determine whether we consider particular behaviors or scripts appropriate to the role we are playing. When the script we are given by the hypnotist is strongly congruent with our understanding of the role we are supposed to play, we become more deeply involved in the role, and action and emotion become automatic and intense. Actors are familiar with *role congruence* as what happens when the character they are playing seems to take on a life of its own.

Role skill is the aptitude and experience that lets us enact a particular role convincingly. The reasonably strong correlation between acting ability and hypnotizability seems to reflect an underlying aptitude for taking on new roles and becoming deeply involved in them.

Role enactment links what we are calling *trance* with social behavior. Without this link, we might naively think that absorption in trance was a purely individual phenomenon, one that simply removed the individual from social contact as it removes them from other distractions. However, trance seems particularly suited through our biology for involvement in social roles.

Noting the dimensions of experience that influence human sexual experience, Donald Mosher observed that trance state, role enactment, and partner engagement were strongly linked together.²⁴⁸ In particular, when Mosher found that when we are profoundly involved in all three of those dimensions, that:

1. the role enactment permeates down to nonconscious and nonvolitional levels of responsiveness, that
2. the (sexual) encounter becomes the only possible phenomenological reality for that moment, that
3. intense object relations are formed with the partner, and that
4. all classical physiological responses occur within a context of profound emotion and meaning.

The parallel with what is seen in hypnosis is so striking that we have to wonder whether hypnosis really represents an extension of sexual rapport, or at least that both are built upon the same human capacity for intimacy.

Rapport refers to how we relate to another person, especially when the relationship involves attachment, trust, care, or interest. The relationship between people is well established scientifically as an important factor, possibly the most important factor, in promoting specific kinds of changes in people. This is true in both psychotherapy and medicine, where both the general *placebo effects* and the specific effects of *hypnotic suggestion* can have a very significant effect on the course of treatment. Understanding rapport means understanding the larger context of our behavior as social animals, and the importance of considering human behavior in terms of the larger social environment.

The dimension of *partner engagement* that helps to bridge trance with rapport can be measured in terms of partner selectivity. The more selective we are about partners in sex, the deeper the degree of partner engagement. This is how the bond of love with a unique individual relates to sexual experience, by increasing the degree of partner engagement and thus the role involvement, and one of the dimensions of “depth.”

In terms of hypnosis, a special bond of trust facilitates involvement in hypnosis, although it is not strictly necessary in all cases for lesser degrees of hypnotic involvement to occur. The selectivity of the subject in responding only to the voice of the hypnotist is reminiscent of partner

²⁴⁸ Mosher, Donald L. (1980). Three psychological dimensions of depth of involvement in human sexual response. *Journal of Sex Research*, 16(1), 1-42.

selectivity in some ways, though it is unknown at this point how far the analogy can be taken.

- The important elements in creating hypnotic behavior are: (1) the degree of *focus of awareness on internal sensations and fantasy*, (2) the degree of *involvement in an expected role*, and (3) the degree of *engagement with another person*.
- Self-hypnosis lacks the third element above, partner engagement, but otherwise strongly resembles hypnosis with another person. Self-hypnosis involves our willingness to be open to our own experience rather than to open ourselves to someone else.

Review of Chapter 9

- People act differently in different social contexts, one person can play many different roles, and act very differently in each. The capacity to take on roles is a characteristic of our species, but the specific roles we take on are defined culturally.
- Genetic traits and talents are common to all of the roles that one person plays. This explains about half of the variation in our behavior. The other half of the variation is explained by behavior that we learn for a particular role in our life.
- Our behavior in a situation is determined not only by which role we play, but also how involved we are in that role. Involvement measures the degree to which all of our resources are focused on achieving a desired outcome.
- The cultural definition of a role helps determine the degree of involvement that is appropriate for that role, as well as the specific characteristics it represents.
- Since the role of a hypnotized person is often associated with deep involvement, simply calling a situation "hypnosis" is often enough to cause people to enact a greater degree of involvement in fantasy, and to increase suggestibility.
- Hypnosis is associated with flexibly switching between roles, as well as deeper involvement in a suggested role. People high in hypnotizability seem more flexible in switching roles and in a more dramatic fashion than people low in hypnotizability.

- The kind of engagement with another person that leads to a *motivated cognitive commitment* to follow their lead also allows us to become immersed in interpretations and meanings that they suggest. This is a characteristic of deep involvement in a role where we engage another person.
- The ability to use our attention flexibly seems closely related to the ability to take on different roles easily and with deep involvement.
- The degree to which we become engaged with another person, plus our ability to use attention flexibly, helps determine the degree to which we can disengage from reality and immerse ourselves in fantasy.
- Immersion in fantasy has a physiological as well as purely psychological dimension, based on our *degree of involvement*. This corresponds to what is often called "depth of trance" in hypnosis.
- Trance state, role enactment, and partner engagement appear to be closely related in that for some people, immersion in a role involving another person leads to a single-minded focus on fantasy as structured by the other person, to the exclusion of reality.

Summary of Chapter 9

Our behavior in any social situation is organized and partly determined by the characteristics of the role we've learned to play in that situation. Roles describe the differences in our behavior from one social context to another. We vary both in what role we play and how involved we are in that role.

One of the characteristics that varies from one situation to another is the degree to which we allow another person to immediately and directly engage our attention. In situations we call *hypnosis*, we allow another person to engage our attention in this intimate way, and we act out the role we associate with a hypnotized person, using our existing talents.

The capacity to become absorbed in an experience, and the capacity of our body to respond to that experience, come from an innate ability to use attention in a flexible way. The degree to which we become involved in experience is related to our degree of involvement in a role, especially a role where our attention is deeply engaged by another person.

The Story So Far ...

*Situations we call hypnosis involve one person engaging the attention of another person in a particular intimate way, while we act out the role of a hypnotized person. We enact the role we consider appropriate to a hypnotized person with a degree of involvement that represents "hypnotic depth," and varies over time. The degree of involvement reflects **how motivated we are to enact what the hypnotist expects and wants us to do**. It also reflects **how immersed we are in the suggested reality and capable of explaining away conflicting information or acting as if we don't perceive conflicting information from our real environment**.*

*If we have a talent for sufficiently flexible attention, and then act out the role of a hypnotized person, we are capable of a remarkable degree of involvement. Deep involvement in the role of a hypnotized person lets us experience convincing hallucinations and compulsions which guide our behavior while we interact with a hypnotist. We still perceive reality in some sense, but our **conscious experience** under these conditions is absorbed in a suggested fantasy. This is made possible by **an innate ability for our attention to be deeply engaged by another person, during conditions where we synchronize with them behaviorally and biologically. A motivation is created which***

structures the way we interpret and find meaning in the situation we are in.

This motivation strongly influences the way they think, feel, and perceive reality, and our ability to perceive a fantasized scenario as real. This capacity to engage each other in such a deep way probably results from an evolved capacity for mutual regulation, as an extension of our natural ability to regulate our own mind and body.

*The capacity to engage each other in this profound form of connection, and the talent to use our own attention in a flexible way combine to enable us to act out the partly learned role of a hypnotized person. Different degrees of talent in the use of attention allow different degrees of involvement in this role, as well as other roles. **Some roles, such as the role of hypnotized person, can be instrumental in therapeutic rituals that help us alter our own behaviors, by influencing our natural self-regulatory processes.***

Epilogue to Section One: Common Questions

The nine chapters comprising *Section One: Describing Hypnosis* provided a way (or rather, several ways) to look at hypnosis in terms of psychological theory, without invoking special processes unique to hypnosis. Now that we have a description of hypnosis, we can briefly examine some of the most common questions people ask about hypnosis.

Is Hypnosis Real ?

This one gets a qualified yes. While hypnosis is often a useful procedure, the popular view of hypnosis is misleading in many respects. Many false claims are commonly made about hypnosis. Hypnosis is often described as a trance that we can be placed into against our will or without realizing it. It is also often claimed that using hypnosis we can perform superhuman feats, exhume long hidden memories, or be controlled by the will of someone else. At least, people often believe that these claims represent hypnosis. These claims are only very loosely based on facts. If that is how hypnosis is defined, it is not real.

The same basic principles of psychology apply during hypnosis as apply at other times. People cannot in general do things during hypnosis that they cannot do at other times. The capacity to dig up old memories is limited and often unreliable, and the capacity of a hypnotist to control a hypnotized person is largely an illusion.

Hypnosis is in general a cooperative situation where we make particular use of our imagination, and where our imagination sometimes profoundly influences our perception and our sense of control. In that sense, hypnosis definitely *is* real.

Does Hypnosis Work ?

Yes, for many people the experience of hypnosis is compelling. The experiences we have in response to suggestion are as real as the talents of an individual to alter their own awareness will allow. Those same people are also capable of having the same experiences without hypnosis. Hypnosis is a helpful way of creating a particular set of conditions for helping someone alter their own awareness.

The essence of "hypnotic" experiences is that we don't feel responsible for them, they seem involuntary. People do have the experience of doing things that seem involuntary under some conditions.

Other than the basic experience of *involuntariness*, much of our behavior under hypnosis is the result of how we **expect** a hypnotized person to act. We take on the role that we believe a hypnotized person should play out. The hypnotized person is an active and cooperating partner, not a zombie.

Obviously, not all of the claims that people make about what hypnosis can do are equally credible. The basic concept is well supported however, that our experience can radically altered in response to suggestion, during rituals identified as hypnosis. Also, hypnosis has been found to sometimes improve the results of psychotherapy and sometimes reduce the rate of relapse from psychotherapy. Most claims of miraculous cures from hypnosis are greatly exaggerated, but this shouldn't be taken as evidence that hypnosis "doesn't work" at all. Hypnosis often helps the therapy process, but hypnosis itself is not a therapy.

Will People Do Anything the Hypnotist Says ?

No. The person responding to suggestion is not under the unlimited control of the hypnotist. They are cooperating with the hypnotist, and are motivated to have the experiences that the hypnotist expects them to have. Someone who is deeply absorbed in playing the role of a hypnotized person will often willingly play out suggested scenarios in a convincing way, and have convincing experiences associated with that role. However at the same time, they are also aware that they are playing a role, and if they become very uncomfortable, the apparent control of the hypnotist will diminish or end.

Asked to do something dangerous or antisocial under hypnosis, most people will find a creative way to avoid carrying out the suggestion, while not breaking the connection with the hypnotist. That assumes that the person themselves considers the act dangerous or inappropriate. Keep in mind that people do not completely lose contact with reality during hypnosis, nor do they completely forget that they are acting out a role. They will decide whether to carry out a suggested behavior using the best information they have available, while trying to stay within the role they are playing. This decision process is often largely outside of awareness, however, making the result seem mysterious.

If someone can't find a creative way to avoid carrying out an undesirable suggestion, they will simply stop cooperating. Once absorbed in hypnotic role playing, we usually *prefer* to continue in that cooperative role, even if we have to modify it somewhat, but we always have the option to stop. How far someone will be willing to go before resisting a suggestion depends on the characteristics of the situation, such as whether we trust

the hypnotist and consider the situation to be safe. This is true during hypnosis, as it is at other times.

Can Someone Be "Brainwashed" Through Hypnosis ?

Not immediately, but over time it can be a contributing factor in radical personality changes. The concept of "brainwashing," as far as it goes, is generally considered a social indoctrination process, not just a result of a few sessions of any "mind control" technique. The most powerful and effective examples of behavior control known are those that use total and complete control of information and social environment over an extended period. This causes the members of the treated group to identify with each other and with the group identity to an unusual extent, in contrast to their previous personality. This is what happens to people involved in religious cults.

Hypnosis is sometimes claimed to be at the root of this social indoctrination process, but this is a misleading claim. Hypnosis involves temporarily taking on a suggested role, not changing personality in the semi-permanent way that occurs in social indoctrination. Hypnosis used over time within a highly controlled social environment could potentially be used to hasten the process, but hypnosis alone could not usually be credited with the kind of changes seen in people who have been "brainwashed."

An example of the kind of role hypnosis can play in "brainwashing" is that that it can be used to help create extraordinary experiences and interpret them in particular ways. This can be leveraged into a more general *interpretative drift* (shift in the way they interpret other things) in their daily life. This can be used by cult leaders, for example, to help indoctrinate people by changing the way they interpret situations in their daily life, based partly on what they experience through hypnotic suggestion.

Can I Be Hurt By Hypnosis ?

In extreme cases, yes. Hypnosis itself is a completely benign procedure. However, people relax during hypnosis, and often cooperate to produce new experiences and new ways of seeing themselves and the world. That's why it works as part of therapy. The implicit trust of relaxing and cooperating with the hypnotist can sometimes become a problem, especially with an inexperienced hypnotist.

As sometimes happens in psychotherapy, people who are undergoing hypnosis, may have intense emotional experiences during the session. These are not inherently harmful, in fact they are often considered an important part of therapy. However, when an intense emotional experience happens in a hypnosis session with an inexperienced or untrained hypnotist, they may inadvertently make the experience even worse. The result is sometimes that the person is frightened and even traumatized, especially about being hypnotized again. In extreme cases, existing serious mental illness may be exacerbated by the episode. This scenario is unlikely, and usually easily handled, but it does happen and is part of the reason why many psychotherapists believe that hypnosis should be respected as a tool, and not treated lightly as a party game.

Can Anyone Be Hypnotized ?

In a sense, yes, there isn't anything really special about "being hypnotized," aside from altering our sense of self-control and becoming absorbed in the role of "hypnotized person."

Therefore, it makes sense that anyone who can follow simple directions and suspend disbelief momentarily (even to a mild degree) can be hypnotized, in principle. Different people will have different experiences, however, according to their own talents, expectations, and willingness to cooperate. Various talents for dramatic suggestion effects seem to be fairly stable in adulthood. There is also evidence that some talents may also be learnable (to *some* degree) as well. Not everyone will experience all of the classical phenomena associated with hypnosis.

Can Hypnosis Help Me Change My Habits ?

Yes, hypnosis-based therapy alone seems about as effective as other forms of psychotherapy at addressing psychological problems and changing unwanted habits. There is also some evidence that hypnosis may sometimes *enhance* the effects of other therapies.

Can I Control My Body Processes With Hypnosis ?

Yes, to some degree. We already have the ability to regulate our own physiology in various ways without any special states or techniques. Techniques such as biofeedback and Yoga meditation can help many people **make better use of their own talents for self-regulation**. Different people find it easier to use different techniques. For many people, hypnosis helps create the right psychological conditions to make effective use of their existing talents for self-regulation. It won't give them

additional talents they didn't already have, but it will help some people use those talents on demand.

Can I Control Pain With Hypnosis ?

Yes. Pain control is one of the best studied uses of hypnosis. Our ability to control pain, like all hypnotic effects, depends upon our individual talents. People who are considered "high hypnotizable" have the distinctive ability to control the perception of even acute pain. Less talented people find it much more difficult to ignore acute pain, even with hypnosis. However, even "low hypnotizable" people are able to use hypnotic techniques to reduce the constant distress of lingering chronic pain.