SORCERY

J. Finley Hurley

$$\frac{\partial S_i}{\partial r_i} + \sum_{K+1} \frac{\partial S_m}{\partial S_{ri}} = \frac{\partial S}{\partial r_i} = 0 \qquad \log W = -N_0 \Sigma \omega_n x_n \log \omega_n$$

$$e^{-j\omega t} = \cos \omega t - j \sin \omega t \qquad \mu_i = \int_0^\infty e^{-\lambda t} dt \qquad P_{ab} = N\left(\log \frac{\mu_a}{\mu_b}\right)$$

$$\int_0^\infty e^{\theta t} f_{k+1}(t) dt = \prod_{j=1}^{k+1} \frac{1}{1 - \theta / j\lambda} \qquad \Psi_B(s) = \exp E(\log r | s)$$

$$L(n f_e F_e^{n-1}) = n\lambda \int_0^\infty e^{-st} e^{-\lambda t} [1 - e^{-\lambda t}]^{n-1} dt =$$

$$n\lambda \int_0^\infty e^{-(s+\lambda)t} \sum_{K=0}^{n-1} \binom{n-1}{K} (-1)^{k_e - k\lambda t} dt$$

$$\int f_N(x - S)\, dP_S(s) = \left(\frac{1}{2\pi N}\right)^{n/2} \int \exp\left[-\frac{1}{2N} \sum_{i=1}^{n} (x_i - s_i)^2\right] dP_S(s)$$

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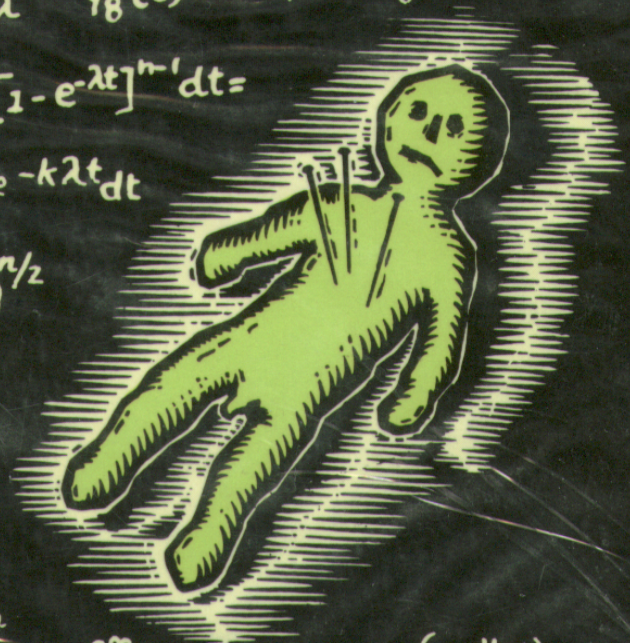

SORCERY

A sorcerer mumbles a spell over a photograph of a seriously ill girl, and she is cured. Another sorcerer sticks pins in a wax doll, and his distant victim screams. Preposterous? Certainly that's what we were taught, but a mass of evidence has accumulated suggesting that we were wrong, that these things may occur, and occur in accordance with rationally determined principles. In this persuasively argued book, J. Finley Hurley gives serious consideration to the possibility that old-fashioned strike-dead-and-blind sorcery is a reality.

The power to influence the thoughts, dreams and actions of others at great distance is one of the oldest 'facts of nature' known to man, and this book gives a clear exposition of why we should regard sorcery as a very real phenomenon. It shows that old-fashioned sorcery, the casting of spells that heal or kill, can be a rational and effective procedure in harmony with the modern, scientific world-view. A few scientists have recognized this, but their evidence has never been treated in detail – until this book.

It draws from scientific studies in many areas – perception, creativity, biofeedback, dreams, telepathy, psychosomatic reactions – to marshal the fascinating case histories and experiments that put sorcery in a surprisingly modern perspective. Without abandoning rationality, the reader can understand how a spell is cast and why it works: the implications are absorbing and perhaps frightening.

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Sorcery

J. Finley Hurley

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Introduction

A sorcerer mumbles a spell over a photograph of a seriously ill little girl, and she is cured. Another sorcerer sticks pins in a wax doll, and his distant victim screams. Preposterous balderdash? Certainly that's what we were taught, but a mass of evidence has accumulated suggesting that we were wrong, that these things may occur, and occur in accordance with scientifically determined principles.

We must now seriously consider the possibility that old-fashioned strike-dead-and-blind sorcery is a reality.

A growing number of scientists working in certain specialized fields are doing exactly that, and they have occasionally admitted as much. Ronald Rose, an anthropologist, is one of these: He wrote that 'magic has its reality, for E.S.P. is real, the powers of suggestion and hypnotism are real. . .' Jule Eisenbud, a psychiatrist at the University of Colorado, is another. He wrote that the ability of some people to influence the thoughts, dreams, and actions of others at great distances 'must be one of the oldest "facts of nature" known to man.' Indeed it is. But the scientists who know it to be a fact have never divulged the details of the information and reasoning that led to its recognition. On the contrary, they have observed an implicit conspiracy of silence on the subject no less thoroughly than Victorians observed the one on sex. Why? Because sorcery has been regarded, at least until recent times, as the paragon of superstition and the antithesis of science – a reputation it once shared with flying machines. In the view of many nineteenth-century scientists it could be nothing else. After all, popular opinion then held that their

age had discovered all the laws of the universe, and in 1887 one of its distinguished spokesmen, Pierre Berthelot, smugly declared, 'From now on there is no mystery about the universe.' And no sorcery either.

Times have changed, but even the scientists who now admit sorcery is possible say little about it. They vaguely refer to a large body of knowledge, as Rose did, and assume that we can bridge the gaps and make the necessary inferences. Like the playwrights of another day, they suppose we know all the wanton gambols that will take place when the light goes out, the door closes. But few of them are likely to have any details to give. Preoccupied as they are with a particular set of facts in their special fields, they seldom view, except in hazy outline, the ensemble of facts constituting sorcery. Besides, it's not their job, and perhaps a survival instinct tells them to let sleeping dogs lie – for they are very large dogs.

I have attempted in this book to bridge the gaps and rouse sleeping dogs by reconstructing the thinking of scientists such as Rose that led them to admit that 'magic has its reality.' In reconstructing their reasoning and the evidence that left them little choice, we shall not only see that sorcery is a legitimate dimension of the Western world-view, but also discover how a spell is cast and why it works. Still, we must begin where they did, at the beginning, and follow the evidence, case histories and experiments, like patient detectives. And, as in a mystery, the pattern will not emerge at once. The first five chapters consequently say little about sorcery directly, but they nevertheless provide information essential to understanding it when it does appear, full-fledged and undisguised, in later pages.

The first chapter in particular may seem remote from sorcery owing to its concern with the world of everyday life: how we perceive it, experiment with it, and explain it. This concern is necessary because an outmoded materialism – a philosophical legacy of the last century that assumed the universe to be a kind of clockwork – still colors our thinking even today. And since it's an anachronism wholly at odds with sorcery (as well as modern physics), it is desirable at the

outset to examine briefly the current scientific conclusions about the nature of reality.

Chapter 2 begins in earnest an exploration of the unconscious mind, which appears to harbor an intelligence of its own, one able to plan and carry out complex tasks, and one that often seems indifferent or even hostile to the conscious mind and the body they share. The significance of its independence will become apparent when we witness its ability to shape what we consciously see, feel, remember, think, and believe. The powers of the unconscious, moreover, are not limited to the mental sphere. Chapter 3 reviews evidence that they may also affect the body for good or ill – to heal or kill. These unconscious processes are central to an understanding of sorcery and what it can accomplish. The world of the unconscious is the world in which the sorcerer moves, and its powers are the ones he seeks to manipulate. To ask what sorcery can do is to ask what the unconscious can do. And that, as we shall see, is a very great deal.

Yet the unconscious does not always act on its own. Fortunately for sorcerers, it will sometimes hear and obey orders from other minds. That compliance, regularly occurring in hypnosis and other trance states, is the subject of Chapter 4. Any of the mental and physical effects described in the previous two chapters can, in principle, be brought under hypnotic control. Nor is that all. The evidence argues that a person can be hypnotized without his knowledge and against his will, and that he can then be made to do things contrary to his conscious wishes . . . and the smell of brimstone grows stronger.

'For E.S.P. is real. . .' Chapter 5, which discusses telepathy – extrasensory contact between minds – adds the final element needed to complete an understanding of sorcery. Here we shall find that telepathy, too, is essentially a process of the unconscious and subject to its laws. And with the discovery that a person's unconscious can receive and act on a telepathic message that never penetrates conscious awareness, we are well on the way to rediscovering the sorcery that so bemused our seventeenth-century ancestors.

Through Chapter 5 we shall be considering data that will, when assembled, make sorcery a comprehensible and reason-

able aspect of reality. These data are assembled in Chapter 6, but the chapter goes beyond showing that spells are theoretically possible and reports instances in which undoubted sorcery has been performed, and not only by rattle-shaking shamans but by scientists – including a Nobel Laureate.

The remaining chapters will attempt to answer some of the many questions that naturally tickle one's curiosity after learning that sorcery exists – such as the obvious one: How to do it? Chapter 7 outlines the principles of sorcery and their application in the light of the scientific findings previously examined. No 'secrets' are withheld. It also contains sufficient nuts-and-bolts instruction to enable the adventurous to begin experimenting with simple spells: healing, charming a lover, making life unpleasant for enemies. . .

Admittedly, only a small part of sorcery is touched on in these pages. The specialists (and sorcerers of course) will also recognize even that part has been somewhat over-simplified. But it is a beginning, and the principles derived in Chapter 7 are valid, though some of them will require future modification. Sorcery is entirely too large a subject to be exhausted by a single book.

Sorcerers, of course, have not idly waited for their art to be understood by Western science, and medicine men, pow-wowers, cunning men, clever men, shamans, power doctors, and witches have been casting spells for millennia. Chapter 8 looks at the techniques, paraphernalia, and theories of traditional sorcerers to see whether they parallel those derived from scientific sources and, more important, whether we have anything to learn from them.

The final chapter is frankly and perhaps outrageously speculative. Given that sorcery is possible, what are the ramifications? Certainly sorcery could be used for more than curing diseases, arousing passions, and the other concerns of the village sorcerer. Has it been? Could it perhaps be an unsuspected force in history, a spectral hand behind world affairs? A number of strange clues suggest it, and as an imaginative exercise, we shall follow them.

The argument advanced here is scientific in that it's based on the experiments and observations of scientists, many of

whom are leaders in their fields, and not on the rickety suppositions of cranks. But I hardly need to point out that some of these experiments and observations have not gone unchallenged by one group or another. Because science no longer pretends to arrive at absolute truth, probably nothing in science is or can be final, and no doubt most of what passes as scientific fact finds its critics, with the vigor of their criticism proportional to the emotion aroused. Proof that is lucid, even overwhelming, to one scientist may not be convincing to another. Nonetheless, more often than not we benefit from the ensuing controversy – for without those who refuse to believe what others believe, we might still be tossing babies to Moloch.

The role of genetics in determining behavior, for example, is one of the many issues currently at the center of heated, often vitriolic debates. And even today, more than a century after Darwin, some scientifically trained people continue to deny evolution, though they are familiar with the evidence supporting it. Finally, that some stout-hearted souls are not to be cowed by any evidence whatever is illustrated by the International Flat Earth Research Society, which maintains – what else? – that the earth is flat. Charles Johnson, its president, said that membership is growing because 'people are coming out of the closet on this.'

Sorcerers, on the other hand, have preferred to remain in the closet. Magic can and has gone its own occult way, but it also passed beyond the pale of Western understanding. The aim of this book is to coax sorcery back within the pale by showing that civilized people can understand it without abandoning their world-view or sacrificing their scientific attitudes.

If people understand sorcery, however, many will try it. Of those who try it, some will get results, and a few may have the talent and persistence to become stars. If genuine sorcery thus ceases to be genuinely occult and is practiced widely, we shall soon have ample confirmation that we have been looking at only one half of existence and had better busy ourselves with the other half. Quite apart from its practical aspects, sorcery teaches that human beings are more than the chemicals that compose them or the bodies that confine them – a

lesson needing emphasis at a time when computers are shrinking us to ciphers.

I offer no apologies if this book encourages the practice of sorcery. Sorcery in itself is as morally neutral as a syringe – which may be charged with heroin as easily as penicillin. Obviously a few will use it for illicit purposes, some already do, but most will not. It's a poor argument that sorcery should be suppressed because scoundrels will abuse it. Anything of value may be misused, including medical science. Several hundred thousand people in advanced Western nations prove it by dying each year because they were given the wrong medicine, and a like number perish from needless surgery, which seems to indicate that we are far more likely to be killed in a medical accident than in a traffic accident. Despite that, it doesn't occur to us to suppress medicine. We clearly cannot afford to. Neither can we afford to suppress sorcery. It is the medicine our world needs.

Michael Edwardes, a historian, acknowledged that need when he recently wrote: 'At the beginning of the scientific revolution, magic and the new science were allies. . . It is time for magic and science to be allies again, before science and the technocratic society destroys us all.'

The day has arrived to try Edwardes's prescription.

Chapter 1

Sorcerer's reality

Peter Dowdeswell's gullet is remarkable. Dowdeswell is alleged to have drunk two pints of beer in a shade over two seconds. At a more leisurely rate he can down ninety pints in three hours – without becoming in the least intoxicated. Angus McAskill was as outstanding in his own way. He was nearly eight feet tall and lifted things. But he hurt his back on the fluke of a one-ton anchor he had hoisted above his head and had to seek less strenuous work. He found it with Barnum's circus where he allowed Tom Thumb, about thirty inches tall, to dance on his hand. Barnum could certainly have found a place for another oddity: a woman whose sense of smell was so acute she could identify the person who had last slept on a freshly laundered pillowcase – she probably had few visitors and no guests. And Professor Aitken, an Edinburgh mathematician, could give the square root of a hundred-digit number as soon as he heard it. He could also recall a thousand numbers read to him and repeat them instantly forwards or backwards. Of course we know that people differ enormously, yet in addition to the striking individual differences there are many, by far the largest number, too subtle to meet the eye or qualify for the circus. These subtle differences nevertheless often baffle scientists as much as Barnum's wonders baffle yokels.

Why should we be concerned with the likes of Angus McAskill? Because the world of sorcery is the world of people, and we shall meet many with unusual talents, diseases, and experiences in the following pages. Before we consider the evidence they provide for sorcery, however, we

must know something about human beings as experimental subjects and the problems that balk scientists who study them. And we have just seen examples of one of the first and most perplexing obstacles to the scientific study of human beings: individual differences. Those as obvious as Dowdeswell's drinking arm can tell us much about human potential, but more often they simply confuse matters.

Medical researchers, among the most beleaguered, have long known that people respond differently to the same drugs – or diseases. Poliomyelitis, to mention one, left many of those exposed to it unaffected; among those who succumbed, the disease may have been so mild as to have gone unnoticed. But for others it was a body-breaking killer. And some who suffer the last stages of a terminal illness, whose life expectancy has dwindled to days, may suddenly recover against all credibility and for no apparent reason.

Not only is each person different, but no single person remains exactly the same from one moment to the next. Bodily processes fluctuate in time with internal rhythms or cycles, which again bear the inevitable mark of individuality. The menstrual cycle is probably the most evident of these, and one so often heralded by a potpourri of distressing symptoms. About 60 percent of all women experience some noticeable changes four or five days before the menses begin. Some become jittery; others may suffer weeping spells, vertigo, insomnia, or even nymphomania. Some develop respiratory ailments, others smart at the recurrence of chronic symptoms, such as those of ulcers or arthritis, and all are more liable to contract viral and bacterial infections. These are also the days of the month in which women commit most of their crimes – including suicide – and meet with the most accidents. For many women the menstrual period is quite entitled to its sobriquet 'the curse.'

Certainly physicians or psychologists cannot ignore the menstrual cycle in their patients or subjects – or in themselves. Although the way in which experimenters affect their experiments is discussed later, we might digress to note that menstruating experimenters may exert a strange influence on their subjects. Pliny, in his *Natural History*, remarked that menstruating women will sterilize seeds, wither plant grafts,

and dry up plants and flowers. Research has disclosed that Pliny was not snuffling about in classical flimflam. It's a fact that freshly cut flowers wilt within twenty minutes after being handled by certain women during the first few days of their periods. The blood, tears, or perspiration of menstruous women will also inhibit the fermentation of yeast; indeed, the women's touch alone may cause wholesale destruction of yeast plants. Female biologists, and bakers, need not wonder that some of their experiments may not turn out the same as those of their male counterparts.

Of course all human reactions are not determined solely from within. People are open systems engaged in a constant exchange with their environment. The body is a sea of extremely complex chemical reactions and sensitive to the many thousands of chemical substances constantly flowing through it. But the body is also an electrical device, and the brain the most complicated one we know. Ben Franklin's famous kite showed there was plenty of electricity in the air, especially in storms. Could it affect the brain? We once thought people felt exhilarated at the end of a thunderstorm because the storm itself was exciting and the air cleaner, more bracing. But we now know that its invigorating qualities result from an excess of negative electricity in the air. Positive electricity, on the other hand, may disagreeably affect susceptible people. And it is the positive electricity associated with the infamous 'witch winds,' such as the Sharav of the Middle East or the Foehn of Germany, that has made them so unpleasant – provoking everything from impotence to violence.

We know sunspots disrupt our electromagnetic environment with blasts of static. Can they, like the witch winds, instigate aberrant behavior? Surveying 28,642 patients admitted to psychiatric hospitals in New York, Friedman found admissions burgeoned on days when the magnetic observatory reported strong activity. A similar study of over 5,500 accidents in Rhur coal mines showed that most of the accidents happened on the day following a spurt of solar activity. And another investigation discovered that traffic accidents jumped as much as four times above average on days after a solar flare.

The sun is not the only celestial power. The ocean tides demonstrate that the moon's gravitation strongly grips the earth. And the moon has a magnetic influence as well – the high points coinciding with the new and full moons. It would be odd if people, other than lovers and poets, were untouched by it.

That was obviously on Edson Andrews' mind when he gathered detailed records of his tonsillectomies from 1956 through 1958, slightly more than a thousand. The 'bleeders' were patients whose bleeding required unusual control during their operations or, later, their return to surgery for post-operative treatment. He discovered the dates of the bleeding problems were significantly correlated with lunar phases: 82 percent took place between the first and last quarters of the moon with a marked peak at the full moon. He also found the same pattern among patients hospitalized with bleeding stomach ulcers. 'These data have been so conclusive and convincing to me,' Andrews said, 'that I threaten to become a witch doctor and operate on dark nights only, saving the moon-lit nights for romance.'

The sensitivity of epilepsy to lunar phases has been rumored since ancient times. The frequency of seizures increase at the full moon and, to a somewhat lesser extent, at the new moon. And the moon's link with insanity, of course, has always been a part of folklore – which research now confirms. The number of patients admitted to mental hospitals actually does peak at the new and full moons. Other studies have shown that the fruits of madness also peak at these times. Lieber and Sherin at the University of Miami School of Medicine analyzed 4000 murders committed from 1956 to 1970 and found an explosive increase in their numbers at the new and full moons. The murders at these lunar phases also tended to be more cruel and gruesome than those committed on other days. Nor do people spare themselves. A related study by Paul and Susan Jones of Case Western Reserve University found that the suicide rate rose by 43 percent during the new moon.

We have seen that electromagnetic blasts of sunspots incite everything from traffic accidents to psychiatric hospital admissions. And because sunspot intensity fluctuates with an

11.1-year cycle, its effects on people should mirror that rhythm. Tchijevsky discovered it does. He constructed an 'Index of Mass Human Excitability' based on the incidence of wars, revolutions, riots, population movements, and other unsavory signs of human excitability. And on applying it over a period of 2,422 years, he found that the episodes of human excitability crested every 11.1 years with metronomic regularity. The psychic epidemics coincided with peaks of solar activity 72 percent of the time and with low points only 28 percent of the time.

Nature also pulsates with a multitude of other cycles whose origins are unknown. And an individual cycle is frequently distorted, augmented, or dampened by the action of other cycles. These environmental cycles then interact with the body's internal cycles to create a tangled, changing web of forces that bewilders science. Although we may know little of these baffling cycles, we nevertheless know enough to make practical use of them: When the moon waxes full, sunspots flare, and a witch wind blows, women suffering premenstrual tension should be treated gingerly, very gingerly.

Because a number of cycles may interact, we must expect certain unusual configurations to occur regularly but only over great periods of time. Perhaps that contributes to the illnesses and manias that appear, endure, and then vanish. Classic hysteria – *grande hystérie* such as Charcot encountered at the Salpêtrière – appears to have been common in the nineteenth century and before. Now it's a rarity. Anything resembling it on a psychopathic ward today will attract psychologists as a two-headed cow attracts rustics. The disappearance of classic hysteria has never been satisfactorily explained, but we may now at least suspect that a cycle, or collision of cycles, may have contributed to that and similar mysteries. Each period may be marked by a singular combination of forces that leaves its imprint on human beings and their history.

Individual differences, biological rhythms, and environmental forces, however, account for only a few of the myriad threads in the snarled skein of influences that makes each person, at each time and place, unique – and a difficult experimental subject. And until science is able to identify and

control *all* the forces that impinge on and shape human responses, which is likely to be never, it follows that a human experiment can never be exactly repeated. People are of course sufficiently alike for some experiments to yield similar results – most of the time. But the more subtle and complex the phenomenon investigated, the more elusive and unpredictable it will be in 'identical' experiments. And the unpredictability of anything human grows in proportion to the mind's involvement in it.

A cannonball is a dependable subject that will obligingly repeat its acceleration, more or less, no matter where or when or by whom it is dropped. Moreover, it reliably drops and seldom floats away or refuses to budge at all. But human subjects, alas for those who study them, are not as obliging – even when they try their best at tasks they delight in.

The human penile erection is a well-known phenomenon that unfortunately cannot be summoned on command and is one that finds a laboratory and inquisitive spectators uncongenial. An alien scientist interested in studying human sexuality, unless his subjects are gonad-driven adolescents, might easily conclude that penile erection is a myth and concoct absurd hypotheses to account for successful reproduction. And human scientists who conduct like experiments without regard for their subjects' sensibilities may simply conclude that it's something beyond scientific proof. Not all nature thrives in a laboratory.

The subject's mind clearly may be of importance in an experiment, but so is the experimenter's. We once believed the scientist merely acted as an observer, an emotionless machine, recording data in a manner that would in no way bias the outcome of his experiment. But evidence has burgeoned which indicates a scientist's beliefs and expectations modify his experimental results – that is, in short, he tends to find what he expects to find.

Rosenthal has performed a number of elegant experiments that confirm that surprising outcome. In one famous study, which has been repeated by many investigators in different settings, he randomly divided elementary school pupils into two groups, similar in 'every' respect (intelligence, grades, sex, ethnic background). He then told their teacher that one

group was composed entirely of 'fast' learners and the other of merely average ones. Within a year the performance of the pupils in the 'fast' group dramatically surpassed that of the 'average' group.

Teachers have no monopoly on that curious influence. Jan Ehrenwald, a psychoanalyst, noted that patients in psychotherapy tend to have dreams consonant with their therapists' theories; that is, a patient will dream what his therapist expects him to dream. Ehrenwald observed that if a therapist changed his theories, he often found his patients' dreams changed to conform to his new theory. And a psychiatrist, William Sargant, added that not only dreams change but also symptoms. If a patient changes therapists, he changes symptoms. And we now have a guide for choosing a therapist: pick one whose theories call for the mildest symptoms and the swiftest recovery.

That influence surfaces in many human activities. An athlete (and his coach) attempting a record may be regarded as conducting an experiment on each trial. And an athletic record people once believed beyond achievement was the four-minute mile; elaborate physiological explanations were even devised to prove it. Then, perhaps by accident, Roger Bannister overturned the record and the proofs in 1954 by running the mile in less than four minutes. Now that it was no longer impossible, hundreds of men broke four minutes within the next few years, and today it is unusual if any important mile is not run that fast. People had the same old bodies, but they were filled with new expectations.

These puzzling events are not accounted for by experimenters cheating or systematically accumulating errors in their favor – something more mysterious is going on. And since any worthy mystery demands a name, Rosenthal has aptly named this one the 'Pygmalion effect.' Several hundred studies have by now confirmed that this disquieting effect is genuine, that experiments do indeed tend to turn out as scientists think they will.

The mind plays an unexpected part in scientific experiments and seems able to bring about the reality it seeks. But the reality we perceive is in all cases brought about by the mind,

or rather by its unconscious reaches. Even the trivial slice of sensory experience nature grants us does not project into consciousness some pristine image of what is 'Out There.' The skimpy range of energies our sense organs receive are all converted by the nervous system into electrical impulses, themselves indistinguishable and the same whether from the eye, ear, nose, or tongue. Colors, sounds, and odors themselves are not carried to the brain by nerves, but merely their underlying energy pulses. 'The difference of the things we experience depends not on what "touches" the sense organs,' said Sir John Eccles, 'but only the *rate* at which the pulses flow, and the places *within the brain* that they reach.' That is, sound, color, and taste are all the same thing as far as the nerves are concerned.

What would happen if nerves were rerouted? Could one see sounds or touches? Could a drop of lemon juice on the tongue 'sound' like an explosion? Yes; called 'synesthesia,' a variety of cases has been reported. A Romanian researcher found that people who see colors when they hear sounds (one of the commonest forms of synesthesia) see them in a precise manner. He was able to measure to the millimeter the size of the colored patches they saw associated with specific sounds. And sometimes it is a useful ability. One subject was a professional singer whose eyes more keenly perceived sounds than his ears. If he sang a false note without detecting it by ear, the accompanying patch of color showed him the mistake. For him it was innate, but perhaps something similar can be learned. One investigator trained herself to have quasi-synesthetic visions. Working with playing cards, she tried to train her sense of touch to distinguish each card. And by using small cues, like smoothness, she was eventually able to identify them all. But as she became more familiar with the experiment, she lost all consciousness of the means, touch, that enabled her to identify the cards and *saw* their pictures.

The brain, in some unknown manner, transforms a barrage of nondescript electrical impulses into our diverse experiences of space, form, substance, color, sound, odor, and taste. The cerebral 'computer' organizes these into wholes, perceptions, according to its programming. There is no doubt that what we perceive as Out There is fabricated by uncon-

scious programs. But how that is accomplished, like most mental activity, remains a mystery.

Nor does the cerebral computer passively await whatever energy impulses the sense organs selectively transmit. Spinelli and Pribram recorded the electrical activity of cells in the frontal cortex while projecting an image on the retina. They found the patterns to which the retina responded could be altered by the brain. That is, the brain can program what the eye sends to it in the first place.

These programs are not only able to control sensory input, but appear able to use that input just as they please, choosing from it as a painter chooses colors from his palette or ignoring it altogether and producing perceptions to suit themselves. Yet in our day-to-day life that hierarchy of programs functions so smoothly and reliably that we seldom have reason to suspect its existence. And we tend to think of the eye as a kind of camera obscura that obediently and faithfully reports the external world.

The mind is very stubborn about seeing things as it believes them to be. If one were to wear special goggles that inverted the image falling on the retina – turning the world upside down – after a period of confusion the world would be seen right side up again, even though the image on the retina remained unchanged. Or if one were to wear colored glasses, the world would assume the hue of the glasses, but if one wore them continuously, objects would resume their 'natural' colors, though the wave length of the light striking the eyes was unchanged. Thus, despite the kaleidoscopic bombardment of the senses, the mind strives for constancy, to perceive what it knows. And these constancies are shaped very early in life, within the first few months, and the programs that insure them are strongly resistant to change. We perceive, it seems, what we learned to perceive when young.

A tachistoscope is one of the devices used to expose unconscious programs in action. It is essentially a projector with a high-speed shutter capable of flashing pictures or messages for precisely controlled durations, from exposures far too quick for the eye to see to exposure times of any desired length. The device acquired some notoriety a few decades ago when it was surreptitiously used to flash messages,

such as 'Drink Coca-Cola,' over the regular feature film at theaters. Although the messages were too brief to be seen consciously, the sale of products so advertised was said to have wonderfully increased during intermissions. These demonstrations of 'subliminal perception' show that the unconscious mind can perceive – and act on – things the conscious mind cannot. But all perceptions occur first in the unconscious; there the raw sensory data are processed into perceptions which may or may not be given to conscious awareness.

Perceptions of which we are unaware may still determine those of which we are aware, as shown in an experiment performed by John Lilly. When he exposed people to a single word recorded on a repeating tape-loop in high-fidelity English, he found they would hear it as a number of different words. Lilly exposed three hundred subjects to 'cogitate' for periods of fifteen minutes to six hours and discovered they heard it as more than two thousand different words. He then presented alternatives visually but subliminally while they listened to the repeating word on the tape. Although the subjects were not aware of seeing the word, they nevertheless 'heard' it on the tape. That is, people clearly 'heard' what was visually suggested to their unconscious minds. He found that 90 percent of what subjects 'heard' on the tape could be programmed in that manner. Other studies have shown that not only sounds, but perceptions arising from all our senses and even our vaunted powers of reason can be similarly manipulated.

And in these sneaky but simple techniques to program behavior, we have caught the first glimpse of clearly unconscious processes that will later prove to be of signal value to sorcery.

The unconscious can also create perceptions without sensory organs – or even without the sensory projection areas of the brain. People who have lost that part of the brain presumed responsible for vision are blind in an absolute sense. The peripherally blind have lost the use of their eyes, but these, the centrally blind, have lost the visual areas of the brain. The peripherally blind, according to Lhermitte, see darkness with spatial properties. But the centrally blind see

nothing at all, neither space nor darkness. They may nonetheless remain unaware of their handicap because of hallucinations. Lhermitte mentioned a patient with deep lesions of the visual cortex who was convinced he saw his wife at her usual tasks. He saw fowl scratching about in the barnyard and would reach out to touch and feed them. These are not simply memory images from some other part of the brain. Lhermitte said the centrally blind can distinguish quite well between a memory image and a hallucination. The first is seen 'by the mind,' but the second stands solidly outside the body as external and objective. These observations indicate hallucinations may no more follow the normal channels of the brain than those of the senses – a strange enigma, neurologically speaking.

Fully developed hallucinations may also occur without neurological problems and become a convincing part of the ordinary waking environment. Morton Schatzman, a London psychiatrist, reported the case of Ruth in which a woman felt persecuted by a hallucination of her father (who was living in another country). Although she knew he wasn't actually there, he seemed entirely real to her. She smelled his odor and heard the sound of his footsteps and the rustle of his trousers as he walked. And when he talked she found it difficult to hear what real people were saying. He appeared to her as a solid figure who blocked her view of objects behind him. Indeed, Schatzman found that her brain did not react to a stimulus, such as a strobe light, that ordinarily evoked a response when her 'father' was interposed between them. Ruth was later able to exert a measure of control over her hallucination and even learned to create 'apparitions' of other people – including those of Schatzman and herself.

Of course we all regularly experience something of the hallucinatory process when we dream. And the content of our dreams exposes the perversity of the unconscious and its contempt for our wishes. Our dreams are not always pleasant and the people in them behave, if anything, more unpredictably than they do in life. Samuel Johnson was annoyed by dreams in which he found himself in repartee with an antagonist of superior wit. 'Had I been awake,' he said, 'I should have known that I furnished the wit on both sides.'

Although it seems we must refer to a person's unconscious as 'his' as a matter of convention, should Dr Johnson have said that he furnished the wit on both sides? Certainly he didn't mean what we usually mean when we say 'I.' Charles Leland, the folklorist, acknowledged that his 'Dream Artist' was a very different person: 'We are not sympathetic,' he said.

> If this *alter-ego* were a lunatic, he could not be a more thoroughly uncongenial inmate of my brain than he often is. Our characters are radically different. Why has *he* a mind so utterly unlike mine? His tastes, his thoughts, dispositions, and petty peculiarities are all unlike mine. If we belonged to the same club, I should never talk with him.

Leland's point is important. The unconscious expresses a will of its own – it is not a robot blindly and mechanically processing information. And as the case of Ruth shows, it may sometimes hear and accept commissions.

The hallucinatory process, the dream artist, lies very close to the final stage of perception in which the unconscious displays its version of reality to our awareness. Hallucinations, then, are not essentially different from ordinary perceptions at that level. Both are products of the same art department and what we perceive to be reality is in any event a construction of the unconscious. That does not mean we must abandon ourselves to the allures of solipsism (though a respectable philosophy), but it does mean that we may create reality as much as discover it. We shall and perhaps must retain the conviction that an Out There exists, but we have no idea how much it contributes to our perceptual world. We can at best hope that we have a good simulation of it.

The landing gear rumbles down and locks as an airliner descends through a dense fog at night; the pilot can see nothing beyond his instrument panel. No matter. He reduces power, adds a few degrees of flaps, and sips coffee. An image of the runway glows before his eyes. Although lacking a multitude of details – the tufts of grass sprouting from the cracks in the tarmac, smoke from a nearby factory, a prowling cat – it is sufficiently accurate for him to land smoothly. He

didn't see the 'real' runway, of course, but a computer simulation.

Other than living eyes may peer at these simulations. Touching the blackness of space, an ICBM sees where it is and where it is going. Its vision, though far sharper than an eagle's, also lacks details. It does not see the little girl in a jelly-stained pinafore lugging a patient tabby; she is as non-existent for the ICBM as she will soon be for us.

Our simulation is painted by a three-pound computer, the brain, programmed on ancient African savannas. It was more than adequate for the life of a club-swinging predator, but we have discovered that it, too, lacked details. Several thousand years ago Aenesidemus of Cnossos warned that the senses cannot be trusted to reach truth, and many have said the same thing since. But we had little practical choice except to consider our perceptual world as corresponding at all important points with 'reality.' And that correspondence served quite well for ordinary human activities in a world scaled to human dimensions; it even drew the map that guided the scientific adventure until the beginning of the twentieth century. Then we found, small surprise, that the callow measures derived from our bodies and senses were inadequate to span the stars or capture nature at her atomic core.

One of the most obstinate aspects of our simulation is its staunch insistence that there is of necessity something irreducibly solid and tangible about the world, and one that science escaped only in this century. It led directly to the concept of substance, matter, which Isaac Newton reduced to its mathematical expression in the first of science's theoretical triumphs. His equations appeared to bind the matter of the universe into a single, harmonious whole. Well, almost. Newton's elegant theory was based on gravity, which postulated action at a distance – an absurd 'occult' notion in the eyes of his less mystical contemporaries. And there was also the small problem that his formulations argued that the universe should collapse on itself. Newton supposed it didn't because God prevented it.

The first of the great theories had thus introduced an incomprehensible, 'occult,' proposition. It was the first point at which our ancient ability to explain everything out of pure

reason miscarried, the first time we encountered something that could not be understood as we always supposed we could understand things – as many still long to understand them. But Newton's equations worked, and with time science managed to forget that a scheme so severely logical, so abundantly proved and practical, rested firmly on the inconceivable. And with that touch of amnesia, the full light of day fell on a mechanical world in a clockwork universe.

Although the clockwork universe was sought, paradoxically, for what were ultimately theological reasons, theology ceased to trouble scientific speculation. The century had arrived that would enthrone matter and Thomas Hobbes was its apologist. In his *Leviathan* he wrote: 'That which is not body is no part of the universe, and because the universe is all, that which is no part of it is nothing, and consequently nowhere.' Hobbes's proclamation admits no compromise, and it charms people still. Of course Hobbes had not the least idea what matter was – he knew far less of it than theologians thought they knew of angels. His assertion was simply the incantation of a new creed.

For over two centuries Hobbes's creed was science's. Then, shortly after 1900, a revolution was ignited by Planck and Einstein that would banish 'substance,' that unintelligible heart of materialism. Science had reduced matter to atoms, which at first seemed as substantial as so many little stones. Then atoms were reduced to particles – and nature sprang her surprise. Einstein showed that matter and energy were essentially the same thing, and that the one could be changed into the other – thus the atomic bomb. Although we acknowledged energy in our simple days, it was regarded not as substantial in any sense, but as the motion of substantial particles. Yet if matter can be converted into energy, obviously the notion of substance is almost exhausted. Substance, body, was by definition and our primitive understanding an ultimate that could certainly not be reduced to anything so tenuous as energy, which was after all not a *thing*, but the property of a thing.

If any feeble life remained to substance, de Broglie delivered its death stroke. In 1924 he penned equations showing that a 'material' particle could behave as a wave. That im-

aginative leap, verified experimentally three years later, won de Broglie the Nobel Prize in 1929. His formulations were further developed into wave mechanics by Schrödinger, Dirac, Heisenberg, and others. But when particles revealed their wave nature the game was over and substance was exposed as an illusion having no more fundamental tangibility than Ruth's spectral father. 'The external world of physics has thus become a world of shadows,' Sir Arthur Eddington said. 'In removing our illusions we have removed substance, for indeed we have seen that substance is one of the greatest of our illusions. . .'

Some may feel they were robbed of the idea of substance by a sleight; that although matter waves are impalpable, they are nevertheless in some sense objective physical entities that still suggest something of substance, however ghostly. There was no sleight. Atomic particles are waves in a multidimensional space having nothing to do with the space we perceive. These waves are described as waves of probability with no material existence whatever. Schrödinger wrote that they are 'completely immaterial waves; as immaterial as waves of nationalism, depression, or "streaking" that sweep over a country.' And Planck simply called them waves of knowledge.

After considering the evidence, von Neumann, one of the greatest of modern mathematicians, concluded that the concept of objective reality had evaporated. That leaves only subjective reality, or something beyond description.

When the physical view of the universe became completely non-material with modern physics, it encountered something that has always been considered the quintessence of immateriality: consciousness, mind. Perhaps we should have expected such a dénouement when we found the physical world was built of incorporeal waves of knowledge or probability. A wave of knowledge, after all, requires a knower. And Karl Marbe, a mathematician and philosopher, discovered many years ago that probability arose from the mind. Now what had been the purview of philosophers became a vital issue for physicists as well. 'It may be useful to give the reason for the increased interest of the contemporary physicist in problems of [philosophy],' wrote Eugene Wigner, Nobel laureate. 'The reason is, in a nutshell, that physicists have found it impossible

to give a satisfactory description of atomic phenomena without reference to the consciousness.' That is not some semantic twaddle that a positivist can reduce to gibberish. Wigner was stating a fact of physics.

'It is not a long step,' said Einstein, 'from thinking of matter as an electronic ghost to thinking of it as the objectified image of thought.' Sir James Jeans agreed: 'The concepts which now prove to be fundamental to our understanding of nature . . . seem to my mind to be structures of pure thought, incapable of realization in any sense which would be described as material.' Elsewhere Jeans concluded that

> in brief, idealism has always maintained that as the beginning of the road by which we explore nature is mental, the chances are that the end also will be mental. To this present-day science adds that, at the farthest point she has so far reached, much, and possibly all, that was not material has disappeared, and nothing new has come in that is not mental.

Eddington, in a now famous passage, stated it even more baldly:

> Realizing that the physical world is entirely abstract and without actuality apart from its linkage to consciousness, we restore consciousness to the fundamental position instead of representing it as an inessential complication. . . To put the conclusion crudely – the stuff of the world is mind-stuff. . . The mind-stuff is not spread in space and time; these are part of the cyclic scheme ultimately derived out of it.

In recent years Wigner observed that 'it will remain remarkable, in whatever way our future concepts may develop, that the very study of the external world led to the conclusion that the content of consciousness is an ultimate reality.' Von Weizsäcker phrased it more poetically: 'Man tries to penetrate the factual truth of nature, but in her last unfathomable reaches suddenly, as in a mirror, he meets himself.' St Francis anticipated him: 'What we are looking for is what is looking.'

These conclusions of modern physics bear an obvious resemblance to the tenets of ancient Eastern philosophies,

such as the Vedanta (which Schrödinger studied). And the resemblance is more than superficial, as Lawrence LeShan and others have shown – a turn of events that would have been inconceivable a hundred years ago.

Nineteenth-century surgeons often bragged that they had never discovered a soul in all the bodies they dissected. Twentieth-century physicists, in dissecting the universe, however, have failed to find a body. And old-style rock-kicking materialism perished with substance. Not a shred remains that science has not obliterated. As a fundamental explanation for anything it is now infinitely more absurd than the bawdy antics of Jupiter or the peregrinations of the Easter Bunny. Yet, like Frankenstein's monster, annihilated time and again, it still staggers back to thrill Bolsheviks, a good many social scientists, and too many biologists. It even lured several generations of 'psychologists' into pretending there was no mind to study.

It is a mystery how anyone could have ever supposed that that which knows is somehow less real than that which is known. And today if one is uncomfortable with some form of dualism, which is practical despite its intellectual shabbiness, modern science appears to permit no alternative to idealism. The clockwork universe has in any event run down, and the hoary metaphysics that propelled it lies in ashes. But the mental world, whose vagaries we shall now explore, has not lost its reality, and it is the sorcerer's reality.

At the Oxford Relativity Conference in 1974, John Wheeler, a theoretician at the forefront of the new physics, peered into the future of science and said: 'There may be no such thing as the glittering central mechanism of the universe . . . Not machinery but magic may be the better description of the treasure that is waiting.'

Indeed it may.

Chapter 2

Minds within minds

Machines running in the mind. Nikola Tesla, the electrical wizard and Edison's contemporary, was reportedly able to design and 'build' machines in his mind, with their parts specified to the thousandths of an inch, and let them 'run' there unattended as he went about other business. Months later he could dredge up the images of these machines from his unconscious, where they had continued to operate, stop and dismantle them, and then inspect their parts for wear.

If we are to understand sorcery, we must become familiar with the often strange and remarkable powers of the unconscious, for they are to sorcery what phenomena such as metabolism and the immune response are to biology. Although we briefly touched upon them in the last chapter in discussing the dream artist and the cerebral computer, from now on they will occupy center stage.

The term 'cerebral computer,' as Tesla demonstrated, may be something more than a metaphor; his mind could run simulations as well as or better than the lastest generation of supercomputer. Of course when many of us think of computers, we think of their ability to perform numerical calculations in a flash. The one in the unconscious also manages that quite well. Truman Henry Safford, a ten-year-old Vermont boy, was observed in the last century by Rev. H.W. Adams who asked him to square 365,365,365,365,365,365 in his head. Adams wrote:

> He flew about the room like a top, pulled his pantaloons over the tops of his boots, bit his hands, rolled his eyes in his

sockets, sometimes smiling and talking, and then seeming to be in agony until, in not more than one minute, said he: '133, 491, 850, 208, 566, 925, 016, 658, 299, 941, 583, 225.'

Although some of the calculating prodigies are of outstanding intelligence, as were Gauss and Ampère, others are described as little better than idiots – hence the name '*idiot savant*' often applied to them. Johann Dase, one of the latter, could multiply two eight-digit numbers in a matter of seconds or two forty-digit numbers in minutes. Dase was slow-witted, but his talent earned him a grant from the Academy of Sciences at Hamburg for mathematical work. And in twelve years he compiled a table that would have taken most people a lifetime. In the days before electronic computers, calculating prodigies were more than curiosities.

However the calculating prodigies perform their feats, and they seldom have the least idea, it is through a process nothing like our own conscious struggles, which is illustrated by their ability to carry on a conversation or busy themselves with other things as they carry out their computations. And most of the calculating wonders have their gift for only a few years in childhood.

Of course prodigies grace activities other than calculation. Mozart began playing the harpsichord at age three and had written two minuets by five and a symphony by eight. He could hear a melody played once and reproduce it flawlessly. Or he could hear a complex, lengthy composition and later transcribe the entire score from memory. Mozart's memory is certainly an enviable asset for a musician, yet it is unrelated to musical genius and is sometimes possessed by mental defectives, such as Thomas Bethune.

Thomas Bethune was a blind, mentally defective slave belonging to Colonel Bethune. Although Tom had not practiced, he astonished the colonel with his ability to reproduce a piece of music after hearing it once, sitting down at the piano and playing it through, note for note and error for error, precisely as he had heard it. The colonel, no fool, soon realized that Tom was worth far more on the concert stage than in a cotton field. And by the time Tom was seven the colonel had prepared him for his debut, which launched a

career that would take them on concert tours round the world.

The colonel added to Tom's repertoire by having famous musicians play for him, and every note became so fixed in his memory that he could unhesitatingly reproduce whatever they played. And Tom could finally play nearly five thousand compositions spanning the full range of music played by the virtuosos of his time. Tom's memory for sound extended to words as well. He was alleged to be able to repeat, without missing a syllable, a fifteen-minute discourse of which he understood nothing. He could also parrot songs in foreign languages after hearing them once, and not only their words but their style and expression. His 'linguistic' ability, however, did not reflect intelligence: his vocabulary remained rudimentary.

Do the prodigies have minds that record information better than others, or do they have superior access to what is in their memories? The solution appears to lie not in memory, but in memory retrieval – which is a very different thing. We saw that in subliminal perception the unconscious records sensory impressions that never become conscious, but that doesn't prevent their influencing behavior, which is routinely demonstrated by experiments in which subjects are exposed to a series of words tachistoscopically flashed on a screen so briefly they cannot be seen – at least consciously. Amongst neutral words the experimenters may mix in emotionally arousing four-letter obscenities (or they were in days past). The subjects are not aware of seeing anything at all, but instruments can detect an emotional arousal when a four-letter word is presented. That shows the unconscious is ever vigilant and constantly attends to all sensory impressions, even those not consciously perceived. But the unconscious did more than receive raw sensory data; it perceived and understood a message that was not delivered to consciousness. The interesting question that now arises is, *What* is it that understood? *Something* did. That question will arise again and again. And the answer, as it evolves, will unveil the sorcerer's collaborator in all his spells.

But does the unconscious remember everything? The evidence indicates that it does. It suggests that the unconscious

never forgets the smallest detail of anything, any raw data, it has ever perceived. And there are ways to probe this primary memory:

'The eighty-third brick I laid that morning on August eighth, back in forty-nine, had a chip knocked out of one corner,' mused John, a master bricklayer. Fred, who was John's hod carrier at the time, reflected for a moment and added, 'That was the last brick laid before our morning coffee break.'

Those of us who can't remember a short shopping list must be amazed at their conversation. Surely these are not ordinary human beings, everyday bricklayers. They are. The insatiable thirst of the unconscious for detail can sometimes be revealed by, among other methods, hypnotism. Fred and John are hypnotized. Bricklayers could remember while hypnotized thirty or forty features of a single brick they had laid ten years earlier, and the accuracy of their recall was verified by checking the actual brick. That aspect of the unconscious, and hypnotism, has naturally attracted the interest of policemen. A witness who merely glanced at a car's license number, for example, has it engraved on his unconscious even if he doesn't recall seeing the car, let alone its license number, and hypnotism can occasionally uncover it. Martin Reiser trained a group of Los Angeles policemen in 'hypnoinvestigation' for that very purpose, and he said that in many cases it has successfully elicited critical evidence obtainable in no other way.

These memories are not localized in the brain, though part of their retrieval system may be. Wilder Penfield, the eminent neurosurgeon, is one whose investigations led him to the conclusion that the unconscious retains every experience in its entirety – sights, sounds, smells, and the emotional response to them. Penfield usually operated with his patients under a local anesthetic so they could remain alert and cooperative while he used an electrode to search for the diseased part of the brain. And during one operation he accidentally discovered that electrical stimulation of the cortex sometimes caused his patient to relive episodes from early life. One patient experienced, as though physically there, her mother and brother talking in their living room from a time

long past. Penfield noted that the experience unfolds progressively, rather like a film strip that registered all those things the person once perceived.

> As long as the electrode is held in place, the experience of a former day goes forward. There is no holding it still, no turning back, no crossing to other periods. When the electrode is withdrawn, it stops as suddenly as it began.

It consequently appears possible not only to recall all the details of anything ever experienced, and to the fullest extent, but to relive them. We have no reason to suppose that only certain memories are selected for total recording; it is more likely an automatic function of the unconscious that indifferently treats all input the same, whether it's the loss of virginity or the loss of a button. Why, then, is that marvelous theater closed to us? Nature has a ready answer. If people – or animals – had absolute recall they would continuously relive the most pleasurable experiences of their lives. Lilly found that a monkey with a microelectrode implanted in the sexual pleasure center of its brain, which it was at liberty to stimulate, would quiver with nearly continuous orgasms for sixteen hours a day. Rats with electrodes similarly placed would ignore food, even if hungry, and stimulate themselves two thousand times an hour for twenty-four consecutive hours. If mankind's goal is happiness, not simply its pursuit, we have at last found it. The strange fact that none of us have had microelectrodes implanted to tickle our joy centers, a harmless procedure, must mean that we think there is a purpose for us beyond wallowing in pure bliss – at least until we've had a taste of it.

But an ability to relive the past, however much old men may wish it, is inimical to survival. People would perpetually relive their profoundest orgasm to the neglect of further sex and their obligation to the species (why bother when the best is instantly available?); plants would not be gathered and no one would keep a watchful eye on the saber-toothed tiger lurking nearby. And a species with that gift would probably become extinct with the generation that possessed it. Compared with the heavenly Xanadus offered by perfect recall, the dreams of opium addicts are pallid and innocent.

Nature wisely prevented us from remembering too much or too well, yet all the information locked away in the unconscious is not useless, as we shall see, but can and does play a vital part in our intellectual processes – which is one of the best arguments for a broad education of which almost everything is nevertheless 'forgotten.' Ideas that 'pop' into one's head, even those that shake the world, are not fortuities, but have their provenance in the archives of the unconscious.

Creativity, more than any other attribute, distinguishes human beings from beasts and computers. But it is one of the most mysterious of all psychological phenomena and unquestionably one of the most important. Without it we would still be unclad troglodytes with only chance caves for shelter. Creativity is one of those elusive, capricious human abilities that certainly exists, as footprints on the moon affirm, but it is untamed and whimsical, and cannot be commanded.

The moment of insight, the flash from the unconscious, is the main characteristic of creative work. And it resembles the flash of understanding that makes a joke funny. A sudden laugh is a minor creative act. Poincaré also saw the creative flash as an esthetic event. He thought that a mathematician's unconscious forms myriads of combinations, but only those harmonious – elegant – will be offered to consciousness. That is a reasonable conjecture; the unconscious artist that creates the phenomenal world is clearly attending to esthetic rules. And Poincaré thought scientific creativity, no less than artistic, is governed by them. More recently Hofstadter at Indiana University has also hypothesized that the processes underlying all creative achievements are fundamentally the same. And the Newtons as well as the Michelangelos are inspired by beauty.

Sometimes the flash succeeds in penetrating a more or less ordinary waking state, though to succeed it often depends on an affinity with some trivial event, such as the water level in his bath that prompted Archimedes's '*Eureka*!' or the falling apple that caught Newton's eye. But since creativity is an unconscious phenomenon, one would expect to find it breaking through to awareness during altered states of consciousness when the external world dims and the mind turns upon

itself, which is exactly what happens – as Barbara Cartland is happy to verify. A best-selling author of romantic fiction with more than two hundred books to her credit, she said that she goes into a 'trance' and lets her unconscious do the work. And work it does, writing a novel a week. Cartland supposes her stories are composed unconsciously before entering her trance because they are so finished that she merely needs to dictate them.

Any writer must envy Cartland's compliant unconscious, yet the nature of her trance is disappointingly vague. Sleep, on the other hand, is an altered state of consciousness familiar to all. And sleep too has befriended the author. Robert Louis Stevenson dreamed many of his tales, especially when he was short of money and needed a story to sell. His 'brownies' gave him better tales in his dreams, he said, than he could fashion for himself. They could also tell him a story piece by piece, as a serial, and keep him ignorant of where they aimed. *Dr Jekyll and Mr Hyde* was one of the brownies' products. And in a similar horrific vein, Mary Shelley dreamed one night, when in her early twenties, the central themes of her novel *Frankenstein*.

The unconscious is not only a consummate raconteur, but also an inventor, as Elias Howe discovered. After years of frustration over his failure to perfect a sewing machine, Howe dreamed (according to one version of the story) that he had been captured by savages who dragged him before their king. The king gave him an ultimatum: produce a sewing machine within twenty-four hours or die by the spear. Howe failed to meet the deadline and saw his executioners approaching. But, as the spears rose to pierce him, his fear vanished when he noticed the spearheads had eye-shaped holes in their tips. Awakening with the insight that the eye of the sewing-machine needle should be near its point, he rushed to his workshop to make a model. And the blessings of ready-to-wear were soon upon us.

Nor does the unconscious neglect science. Friedrich von Kekulé, a great nineteenth-century chemist, had a dream of swirling atoms in 1865:

My mental eye, rendered more acute by repeated visions of

> this kind, could now distinguish larger structures, of manifold conformation: long rows, sometimes more closely fitted together, all turning and twisting in snake-like motion. But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I woke.

Kekulé had tried for many years to find the molecular structure of benzene without success. But his unconscious did not fail and presented the solution to his dreaming consciousness in its customary symbolic form – which he fortunately understood. The dream made him realize that benzene is a closed carbon ring, a discovery of enormous importance to chemistry.

Savages and snakes. Why does the unconscious use such a roundabout way to tell the dreamer what he needs to know? Why not tell him directly? Sometimes it does and may even furnish an instructor who gets right to the point, as it did for Herman Hilprecht, professor of Assyrian at the University of Pennsylvania, who was visited one night by a forty-year-old priest of ancient Nippur. Hilprecht had worked late one evening in 1893 trying to decipher the cuneiform inscriptions on two fragments of agate, found in the ruins of a temple, that he believed were Babylonian finger rings. He thought one fragment belonged to a particular period but the other was a puzzle.

Fatigued, Hilprecht went to bed about midnight still preoccupied with the rings. As he slept, the priest appeared and led him to the treasure chamber of the temple of Bel where they entered a small windowless room containing a large wooden chest and, scattered on the floor, scraps of agate and lapis lazuli. Here the tall, thin priest revealed his mission:

> The two fragments which you have published separately upon pages 22 and 26, belong together, are not finger-rings, and their history is as follows: King Kurigalzu (circa 1300 B.C.) once sent to the temple of Bel, among other articles of agate and lapis-lazuli, an inscribed votive cylinder of agate. Then we priests suddenly received the command to make for the statue of the god Ninib a pair of earrings of agate. We were in great dismay, since there was no agate as

> raw material at hand. In order to execute the command there was nothing for us to do but cut the votive cylinder into three parts, thus making three rings, each of which contained a portion of the original inscription. The first two rings served as earrings for the statue of the god; the two fragments which have given you so much trouble are portions of them. If you will put the two together you will have confirmation of my words. But the third ring you have not yet found in the course of your excavations, and you will never find it.

The priest then disappeared and Hilprecht awakened at once to tell his wife the dream so that he wouldn't forget it. 'Next morning – Sunday – I examined the fragments once more in the light of these disclosures,' he said, 'and to my astonishment found all the details of the dream precisely verified . . . ' Here we see the unconscious not only as a scholar and inveterate dramatist, but as an individual. It has assumed the role of a distinct personality, an ancient priest, to disclose its knowledge in the most exact possible manner. Leland would not have been ashamed to acknowledge Hilprecht's dream artist. But the creation of seemingly independent personalities is a common ploy of the unconscious – it creates them every night in our dreams – and sometimes, as we shall see, that is a source of mischief.

These events suggest that even after the unconscious has solved a problem, made a discovery, it may have difficulty in communicating its discovery to consciousness, which hints that creative people may not possess any greater fundamental creative ability than others, only a greater openness to messages from the unconscious. These stories of snakes, priests, and savages also tell us that the unconscious must be primed with a great deal of knowledge before it rewards us with insights. There is no free lunch.

Creative insights rise to consciousness very much as though they come from some alien source. As Thackeray said in the *Roundabout Papers*: 'I have been surprised at the observations made by some of my characters. It seems as if an occult power was moving the pen.' Remarking on that strange

sensation, Keats said that he had 'not been aware of the beauty of some thought or expression' until after he had written it down when it then struck him with astonishment and seemed rather to have been written by someone else. Others have also confessed their talent was not strictly theirs: George Sand said that in her work 'It is the other who sings as he likes, well or ill.' And George Eliot likewise said that in her best writing something 'not herself' took possession of her and that she was merely its instrument. The disquieting trend in these examples is concluded by Blake who wrote, in discussing his poem *Milton* 'I have written this poem from immediate dictation, twelve or sometimes twenty or thirty lines at a time, without premeditation, and *even against my will*.' (Italics added.)

Thackeray and Sand remind us of what every novelist knows: characters do not always behave as their author intended but have a penchant for developing their own roles – playing ones larger or smaller than, or even different from, those their author had planned. Like Hilprecht's priest, they may display a will of their own. And sometimes, not content to move in dreams or on the periphery of awareness, they step boldly into waking life. Sir Francis Galton was informed by a novelist that she once saw the main character in one of her books come through the door and glide towards her. Dickens and Sand also had characters that were occasionally externalized and spoke to them.

Hilprecht's priest appeared only once, and in a dream. Yet these entities from the unconscious may establish more enduring relations with consciousness, as in the strange history of Patience Worth. 'Many moons ago I lived. Again I come. Patience Worth my name.' That quaint message spelled out by an Ouija board in the early 1900s began a remarkable literary career for Mrs Pearl Curran, a St Louis housewife with an elementary education. She read little, except for a light novel or a magazine, and her knowledge of history was rudimentary – she thought Henry VIII was beheaded for adultery. Nor had she traveled abroad. Nevertheless, over a period of nearly twenty-five years 'Patience Worth' wrote millions of words drawing on historical themes – seven novels, a number of short stories, and thousands of poems.

After a time Mrs Curran dispensed with the Ouija board because she could 'hear' Patience's voice in her mind. Now Mrs Curran was able to take dictation. She wrote rapidly and the manuscripts she produced were never revised or corrected. And when she resumed writing a particular work, she picked up exactly where she left off in the previous session. Switching easily from one to another, she worked on several different manuscripts simultaneously.

It is difficult to believe that such slapdash habits could lead to anything of merit, but her works were roundly applauded by critics and 'near great' to 'greater than Shakespeare' were used to describe them. We may not share in that admiration today, but we may concede that Mrs Curran's scanty education and limited abilities would have seemed inadequate to explain the work of the Patience Worth personality. Although she was a poser for investigators of the time, we are not as astonished by her as were her contemporaries because we know the unconscious can be amazingly creative with its store of knowledge. We may be impressed by the ingenuity funneled through Patience Worth, but we are not entirely mystified by it. Mrs Curran, of course, thought she was communicating with a wholly separate, if disembodied, person. The evidence, on the other hand, would not permit that explanation even for those otherwise favorable to it. Though few may enjoy Mrs Curran's success, many more authors are visited by 'ghost' writers than one might suppose.

Still, the behaviour of these 'entities' raises a peculiar question: Are they conscious? Admittedly, we haven't the least idea what consciousness is in terms of any 'objective' criteria, but we shall see that they may be, at least in the same sense that we impute consciousness to anyone other than ourselves. Now we may return to Blake's disturbing portent '*and even against my will.*' These entities may not only disagree with consciousness, they may even impose their will on it. But whether independently conscious or not, these incursions of the unconscious at times strongly resemble the popular idea of possession. Mrs Curran was not possessed, according to the ordinary definition of the term, anyway, yet guests such as Patience Worth have been known to kidnap their hosts.

One victim was a young woman jilted by a lover to whom

she remained passionately attached. Although he had ended all association with her, she persisted in believing that he was still in love with her. A short time later she developed involuntary movements of her hands and fits of sobbing without discernible reason. Then, as a family member looked on, she said she was possessed by her former sweetheart's spirit. While 'possessed' she imitated his words, speech mannerisms, and gestures; and afterwards she held conversations with his spirit, which would either speak through her mouth or speak to her with an 'inner voice,' such as the one that whispered to Mrs Curran. Occasionally the 'possessing spirit' scribbled messages through her hand that resembled her sweetheart's writing.

The alternate personality, possessing entity, may not be content with seizing a mere organ or two, but may insist on the whole body and evict its usual tenant. And a common instance of that appears in somnambulism – sleepwalking. Somnambulism occurs in about 5 percent of the population and more often among children than adults. It is sometimes linked to psychomotor epilepsy and is related to amnesia, fugue, and multiple personality. Indeed, somnambulism is a kind of fugue. Somnambulists seem to behave in a more or less conscious, rational way, certainly manifest some sort of personality, and then have amnesia for the episode. Fugue differs only in that it isn't particularly associated with sleep and its victim exhibits a degree of consciousness and purposive action that renders it indistinguishable from an ordinary waking state – but not with the original personality intact. In somnambulism, on the other hand, the level of awareness appears lower, though maundering somnambulists are aware of their surroundings and will reply if spoken to. Fugue also differs in that it may last for prolonged periods, whereas 'natural' somnambulism seldom lasts for more than half an hour. Still, their differences are quantitative, as we can see in the experience of Ansel Bourne.

An explosive sound jarred Ansel Bourne to wakefulness. As dreams gave way to daylight, he was nonplussed to find himself in a strange bed in a strange room. Disoriented, he went to the window and was frightened to see an unfamiliar street. His last memory was of leaving his home in Coventry,

Rhode Island, during January 1887, for a routine business trip to Providence. Ansel anxiously opened the door to investigate his peculiar situation and was greeted by a stranger who said, 'Good morning, Mr Brown.' When 'Mr Brown' replied that he was not Mr Brown, but Ansel Bourne, that he was in Providence and not Norristown, and that it was January and not March, the stranger, Mr Earle, reasonably concluded that Mr Brown was out of his mind and sent for a doctor. Subsequently reunited with his family, Ansel remained very confused about his singular adventure. He remembered nothing at all of the eight weeks he had been 'A.J. Brown' who had opened a small business in Norristown, Pennsylvania.

William James heard of Bourne's experience and wondered if the memory of it could be recovered through hypnosis. Bourne agreed to be hypnotized and went to Boston where James conducted the investigation. James discovered that while hypnotized Bourne recalled his life as A.J. Brown, but in that condition knew nothing of Bourne. As Brown he said that he was born in Newton, New Hampshire, July 8, 1826 – Bourne was born in New York City, July 8, 1826. Brown, then, constructed a different history for himself which he accepted as valid.

Bourne's experience lies at the extreme of the continuum beginning with insight. The unconscious may speak to creative people through sudden flashes or symbolic dreams. Authors have sensed an alien source for their work and have been surprised by their characters' independence. And for Professor Hilprecht the unconscious created a distinct entity to communicate with him, even though in a dream. But Patience Worth was an entity that insinuated herself into waking life, and with Ansel Bourne the personality emerging from the unconscious took over. These odd usurpations may not be commonplace, but neither are they rarities. And, as we shall see, these uninvited guests sometimes have companions.

Multiple personality resembles a chaotic fugue, as the case of Miss Beauchamp illustrates. Christine Beauchamp, a twenty-three-year-old college student, came to Morton Prince for an assortment of ills: headaches, insomnia, bodily pains, and persistent fatigue. During the course of her treatment, Christine developed four different personalities that

alternated from time to time, often from hour to hour, and her memories altered with each change. Prince remarked,

> I say different, because although making use of the same body, each, nevertheless, has a distinctly different character; a difference manifested by different views, beliefs, ideals, and temperament, and by different acquisitions, tastes, habits, experiences and memories.

Sally, the impish personality, delighted in playing pranks on Christine, the original Miss Beauchamp. One of her pranks exploited Christine's terror of spiders. One day Christine found a small box in her room, neatly wrapped as though a present, and opened it. Six spiders ran out. Sally had gone into the country to gather them as a surprise for Christine.

Sally did no more than play pranks, but Dr Jekyll's savage alter ego was fictional only in particulars. Thelma Moss reported the case of an attractive but drab young married woman, Ellen, who had been admitted to the Neuropsychiatric Institute of the University of California at Los Angeles for headaches, blackouts, and suicide attempts. One day her therapist arrived for their session to find a mischievous, witty young woman who knew all about Ellen and detested her. The intruder, Letty, enjoyed taking control of Ellen's body, buying clothes Ellen would never buy, and having 'fun.' But the critical attitude of the second personality went beyond a few light-hearted pranks and – like Mr Hyde – dabbled in murder. Letty tried to kill Ellen during one of Ellen's blackouts by rushing into the middle of a busy highway and 'leaving' Ellen there to save her own life. Shortly after Letty revealed herself, a third personality appeared that was even more hostile than Letty; she threatened to kill the therapist and may have made one serious attempt to carry out her threat. The newcomer, curiously, was totally insensitive to pain.

Multiple personality is hardly an ordinary psychological disorder, but Moss reported that over the next twelve months three additional cases appeared on the wards of the Neuropsychiatric Institute. A great many cases have been published in the scientific literature, with some manifesting more than a dozen distinct personalities alternating in a jumbled

sequence – to inflict blackouts on the primary personality that lasted for months, sometimes for years, and sometimes for life.

We generally regard our egos as the unique and supreme lords of our bodies, yet the unconscious is a regicide that may replace them with usurpers of its own making. It is able to create entities with minds of their own and is also, as we shall shortly learn, heir to a few whom our ancestors knew as gods. These entities seem to be actuated by secret, unsuspected purposes, purposes that may sometimes be repugnant or even hostile to our conscious wishes.

Maurice Maeterlinck shared Leland's uneasiness with these stealthy denizens of the psyche and remarked on the strange and whimsical nature of the unknown entity within us that 'seems to live on nothing but nondescript fare borrowed from worlds to which our intelligence as yet has no access.' But not everyone is disturbed to learn that an unknown king is enthroned beyond our ken. Aldous Huxley for one:

> Personally I find it extremely comforting to think that I have somewhere at the back of my skull something which is absolutely indifferent to me and even absolutely indifferent to the human race. I think this is something very satisfying, that there is an area of the mind which doesn't care about what I am doing, but which is concerned with something quite, quite different.

The sorcerer would agree with Huxley; he, too, is especially satisfied that that 'something' at the back of the skull is absolutely indifferent to him and to the human race. It is his ally and accomplice.

There is a related phenomenon that appears akin to multiple personality, priests of Nippur, and characters with a saucy disregard for their author's wishes. It is not uncommon to find two or three people, usually in a family, who share a delusion. For many months Jule Eisenbud studied a group of such people, living in a rural area, who were troubled by a visitor, Becky, that behaved much like a traditional ghost. Becky was 'seen' by two of the group, 'heard' by five, and 'felt' by five. Sometimes two or more of them simultaneously experienced Becky's visits through several senses. Becky was nevertheless

the joint unconscious elaboration of the group. Eisenbud, hardly narrow-minded about such matters, wrote, 'There was no evidence whatsoever that this extremely well-organized, visible, audible, and in other ways experienceable entity had any existence apart from these persons.' For this group Becky was a pathological accident, but others have deliberately produced such 'entities.' Whatever else these peculiar events tell us, they at any rate intimate that group hallucinations are possible.

The weird distortions, incongruities, and generally bizarre incidents that characterize dreams are examples of 'primary process' thinking. It forms a language often and fluently employed by the unconscious, but one very poorly understood. We recognize it in Pharoah's dream of the seven fat and seven lean kine that Joseph interpreted. And another ancient example is attributed to Alexander the Great who was troubled by a dream during the seige of Tyre (*Tyros* in Greek) in which he saw a satyr (*satyros*) dancing on a shield. His soothsayer noticed that the dream sprang from a pun if he interpreted it to mean Tyre would fall, since *satyros* could also mean *sa Tyros* ('Tyre is yours'). Hardly a reckless interpretation, considering that it was Alexander's dream. But we see the same process perfusing the dreams of scientists, inventors, and authors.

The unconscious may express itself to consciousness in primary process, but we find it difficult to believe the unconscious thinks in it. The computational powers of the unconscious and its ability to unravel abstruse problems would seem to require a more rigorous language than that of vague, ambiguous symbols, snakes swallowing their tails. One either assumes a precise vehicle for its logic in which only its conclusions are framed and given to awareness in primary process, or one must conclude the unconscious does in fact think in that enigmatic idiom and admit that its dancing satyrs are far more sophisticated than we ever imagined. Perhaps its myths are a streaming of knowledge from beyond space-time that eludes our vainglorious logic as the end of a rainbow eludes and teases a searching child. Ernst Cassirer argued that beneath both language and myth lies an unconscious

'grammar' whose laws are not those of logic. He pointed out that this prelogical 'logic' is not an undeveloped state of rationality, but something fundamentally different, and that it has great power to direct even our most critical thought.

A beaver colony builds its dams and ponds and lodges by the beavers working in concert, which they can do only if the colony has enough beavers, as Europeans found out. After the European beaver was hunted nearly to extinction for its fur, only a few tiny colonies remained and they built nothing at all. For centuries Western Europe had neither beaver dams nor lodges until the French government protected the beavers in the Rhône Valley. Slowly their population increased over several decades until, finally, the beavers resumed their architectural labors. After a lapse of centuries beaver ponds and dams again dotted the tributaries of the Rhône River. And they were not in the least different from the works of their American cousins five thousand miles away.

Whether animals are conscious is moot, but they certainly have something that corresponds to the human unconscious. The level of a beaver's mind that attends to the housekeeping chores – pulse, respiration, digestion – may also swallow up in forgetfulness the sunny days of youth and the parental lodge. Yet beneath that lies a level of instinctive knowledge, common to all beavers, that teaches how to fell trees, build dams, and mate. Sir Alister Hardy called the inherited 'knowledge' thus shared by a species its 'psychic blueprint.' It emerges from a collective or racial unconscious.

Do human beings share a collective unconscious? If so, we should expect it to be much more subtle and mazy than in simpler animals and suspect its specific manifestations would be shaped by experience. Many scientists, Hardy among them, think we have such an unconscious and a growing amount of evidence, albeit queer, appears to admit no other view. Although the possibility that mankind has inherited a body of unconscious knowledge should snare scientific attention, research into the matter is unfortunately discouraged today. Even so, ethological findings clearly demonstrate the existence of a collective unconscious among our mammalian brethren. And we are mammals in good standing.

Carl Jung, one of the most original psychological theorists and an early investigator of the collective unconscious, reported the case of a man hospitalized for paranoid schizophrenia while in his early twenties. In his thirties, when Jung saw him, he was described as a strange mixture of 'intelligence, wrong-headedness, and fantastic ideas.' Although he was very disturbed and suffered frequent hallucinations, he also enjoyed quiet periods in which he was allowed to go unattended in the corridor. One day Jung found him there, staring out the window at the sun and moving his head from side to side in a peculiar manner. 'He took me by the arm,' Jung related, 'and said he wanted to show me something. He said I must look at the sun with eyes half shut, and then I could see the sun's phallus. If I moved my head from side to side the sun-phallus would move too, and that was the origin of the wind.' Their strange conversation took place in 1906. When Jung was later engrossed in mythological studies in 1910, he discovered a book, part of the *Paris Magic Papyrus*, thought to be a liturgy of the ancient Mithraic cult. It consisted of a series of visions, instructions, and invocations – one of which Jung recognized with a shock:

> And likewise the so-called tube, the origin of the ministering wind. For you will see hanging down from the disc of the sun something that looks like a tube. And towards the regions westward it is as though there were an infinite east wind. But if the other wind should prevail towards the regions of the east, you will in like manner see the vision veering in that direction.

Jung's patient was committed in 1903. His vision was in 1906, and the Greek text of the liturgy was first edited in 1910. These dates were too far apart, Jung thought, for the patient to have picked up the theme for his vision from reading on his own or by mind-reading (from Jung). He noted that in certain medieval paintings the tube is actually shown as a sort of hose, reaching down from heaven to Mary, through which the Holy Ghost descends in the form of a dove. Jung pointed out that, as is known from the Miracle of Pentacost, the Holy Ghost was originally conceived of as a mighty wind. He concluded, 'I cannot, therefore, discover anything fortuitous in these

visions, but simply the revival of possibilities of ideas that have always existed, that can be found again in the most diverse minds and in all epochs. . .' We were, perhaps, correct in assuming that the contents of the human collective unconscious would be more varied, complex, and colorful than anything afforded by beavers.

But we need not await the visions of psychotics to descry these shades wavering on the horizons of mind. Masters and Houston pioneered the investigation of psychedelic substances and made regular expeditions into the 'mythic' mind, the region of the collective unconscious glimpsed by Jung's patient, before governments, in their eternal frights, declared scientists were neither intelligent nor responsible enough to experiment with them. Under the influence of psychedelics in a controlled environment, their subjects were able to move in unconscious realms ordinarily closed. Masters and Houston noted that some of their subjects said (relevant to Jung's observations) they felt the wind stands to man in a kind of ruler-ruled or even God-man relationship. They experienced the wind as 'God's breath' or 'nature's exhalations.' They continued the parallel by perceiving the sun in a 'distinctly antique aspect' and describing it as a direct life-giving principle that contains a sense of penetration – thus the phallus. Some female subjects experienced the sun's penetration as sexual and spoke of the sun as a 'cosmic lover.'

Most of the themes of ancient mythologies visited their subjects. In over two hundred psychedelic subjects, 67 percent experienced images of ancient Greek, Roman, Mesopotamian, Egyptian, and similar religious rites. Only 8 percent experienced imagery of contemporary religions. The ancient gods and myths, apparently an inheritance, still reside in the unconscious. Jung called them 'archetypes' and observed that they seemed independent, behaving quite as though they had an intelligence and will of their own. Yet how are these phenomena to be explained except in the same way that a beaver builds a dam exactly like those of his ancestors when no such dams has existed for centuries?

It would be remarkable if these archaic symbols, myths, and entities served no purpose whatever except to lurk in remote regions of the mind for the amusement of psychedelic

voyagers, contemplatives, psychotics, and others who have turned aside from 'reality.' Well, then, what do they do?

We may think of the unconscious as a many-roomed mansion of meandering corridors where monsters roam, chambers where hidden things are kept, halls where gods hold revel, towers where mathematicians meditate, and Freudian hidy-holes where the jetsam of our personal lives collects. But it may well be that it is rather a doorway that opens not to rooms but to endless space. If, as suggested by physicists such as Eddington, Schrödinger, and Wigner, the universe is ultimately mental, the unconscious may represent the contact of our individual minds with the 'mind-stuff' composing the universe. Or it may be, as Costa de Beauregard proposed, coextensive with the universe.

The unconscious is described by a variety of terms, often by those which suit some narrow concern of the writer. And it is referred to so frequently and casually that it has become humdrum. It clearly is not. The term 'unconscious' as used here generally encompasses all the regions of mind that are not conscious, including the collective unconscious and the mythic mind. But it remains a poor, shop-worn term that conveys little hint of the majestic worlds ranging beyond consciousness. When this uncharted space is referred to without restriction, it might be better designated the 'chthonic' mind (a thing, not an un-thing). 'Chthonic,' derived from the Greek for 'earth,' refers to the dark, primitive, and mysterious, and to the underworld of spirits and gods. It seems aptly to characterize the larger, neglected dimensions of mind, and its rather bizarre spelling serves as a reminder that it does. The term will be used from time to time to emphasize that the unconscious spoken of here is far more than the banal dustbin of repressed sexual fantasies and forgotten trivia that finds its way into dinner-table chatter. It is an awful and abyssal deep on which our awareness floats like a tiny, fragile boat on a voyage to an unknown shore.

And it is one the sorcerer must learn to navigate.

Chapter 3

Thoughts in flesh

A brick curved through the air towards a young coast guardsman's head. He saw it coming, in seeming slow motion, but couldn't dodge and was struck above the left eye. After recovering consciousness he could not see. But he wasn't blinded by the brick – at least not in the way one might think. An examination at the United States Marine Hospital in New York disclosed no physical reason for his loss of sight. It was as though he suffered a kind of amnesia for sight alone, that his unconscious had erased vision but left his sensorium unaffected. His unconscious, on the other hand, was unimpaired and hypnotism was able to recover what he saw while 'blind.'

We have observed the immense power of the chthonic mind over consciousness. And in this chapter we shall see that its power over the body is no less, beginning with cases such as the coast guardsman's in which the distinctions between mental and physical symptoms are blurred. His affliction, hysterical* or conversion blindness, is not a rare curiosity but a relative commonplace. One large medical clinic, treating 5000 general medical patients a year, found 18 percent of its patients suffered conversion symptoms.

Everyone is familiar with 'butterflies in the stomach,' tension headaches, and similar physical responses to anxiety or stress. Even if anxiety is entirely unconscious, it can still

*"Hysteria" is a scientific term for a group of related disorders that includes conversion reactions, amnesia, fugue states, and multiple personality. The term is used here only in its scientific sense, which has nothing in common with its popular usage.

exert pressure that may escape in physical symptoms – conversion reactions – which assume many and protean forms, such as deafness, blindness, seizures, tics, tremors, numbness, or paralysis. But a conversion reaction, converting anxiety into some symptom or bodily pain, does not involve physical damage to the body. It is a condition in which the mind acts on the mind alone and not on the body – though it seems to. In conversion blindness, as in the coast guardsman's case, nothing is wrong with the eyes, optic nerve, or brain. And if the underlying emotional conflict is resolved, dispelling the source of anxiety, sight is restored. Though their problems are not physical, conversion patients are not pretending; their pains or other symptoms are quite real to them and may be completely disabling.

Although the psychological causes of conversion reactions, the 'dynamics,' are often complex and obscure, fortunately for the purposes of illustration, some are transparent. A young man provided one example when he got a toothache almost halfway through his wife's first pregnancy when she was hospitalized for a complication. His dentist failed to find any reason for it and painkillers had little effect. The toothache persisted until his wife was discharged from the hospital, whereupon it vanished. But it returned during her labor and didn't cease hurting until the baby was born. A great many men on the threshold of fatherhood suffer from so-called couvade symptoms as their wives approach childbirth, and toothache is a common one. Investigators think that may be because of a widespread belief that pregnancy affects a mother's teeth, as reflected in the old saying, For every child a tooth.

Can the unconscious, however, prevent as well as inflict pain? A psychotic girl answered that question by calmly tearing her eyes from their sockets. When a horrified witness asked if it hurt, she replied: 'Not at all. They just popped out.' Shattuck told of a schizophrenic patient who gave an even more decisive answer by wrapping herself in a blanket and setting it afire. She was found two hours later sitting contentedly on the floor. The charred bones of her legs were exposed and severe burns covered her trunk and hands. She nevertheless spoke pleasantly, asked to be left where she was,

and discussed philosophically whether the lack of religious beliefs was a matter of importance in her condition. Repeatedly denying that she was in any pain, she remained cheerful and argumentative for half an hour. But when she was lifted with difficulty from the smoldering floorboards, she complained of pain in her shoulders – the only unburned part of her body – and died a few minutes later.

The mind's ability to eliminate pain is not confined to strange psychoses, but may become commonplace among ordinary people in extraordinary situations. While attending wounded soldiers at Anzio during the Second World War, Henry Beecher was astonished to find only a quarter of the severely wounded were sufficiently troubled by pain to ask for relief. Beecher thought that perhaps it was because the war was over for them.

Some people have learned to control the normally unconscious process that suppresses pain, which has permitted a few chronic pain patients to resume a normal life. C. Norman Shealy described a concentration technique that enabled 84 percent of these patients to reduce their pain 50 percent or more, and 20 percent of them achieved total relief after an average of four weeks, even though most had been invalids. But not many have learned to harness the pain-suppressing process as well as Jack Schwarz, which he proves by nonchalantly shoving a six-inch sailmaker's needle through his arm or the palm of his hand without a twinge. He does not have hypalgesia, a dangerous medical condition that would make him impervious to pain, but finds pain as unpleasant as anyone unless he prevents it. He has demonstrated his enviable ability to a number of medical groups and was the subject of an investigation by Elmer Green at the Menninger Clinic that we shall look at shortly.

Toy racing cars whiz about their track – accelerating, slowing, shooting the curves, and crossing. The 'drivers' controlling them sit motionless, watching. Their hands touch nothing. They are operating the cars with their brain waves alone. That is one of the more theatrical experiments of biofeedback research, an area of investigation that has attracted wide-

spread attention in recent times and may, at least in part, explain Jack Schwarz's abilities.

We have seen what a little electricity can do to the brain, but the brain also produces electricity. And the electrical activity of its thousands of millions of cells may be detected by electrodes attached to the head. An electroencephalograph (EEG) can amplify and record that electrical activity as brain waves. The 'drivers' controlled their cars in the above experiment by producing alpha waves (about ten cycles per second). The more alpha waves they produced, the faster their cars moved. Usually, of course, more respectably scientific lights or tones are used instead of toy racing cars, and a subject learning to control his alpha waves will recognize his success when a light goes on. The light translates the task of controlling brain waves of which he is unconscious into a task of which he *is* conscious. The subject learns, somehow, to keep the light on for longer and longer periods; that is, he learns to produce alpha waves. But he is no more aware of how he does it than of how he moves his finger. He just does it. Consciousness supplies the goal; the unconscious performs the work, which it alone knows how to do. In a similar way the many involuntary processes of the body – such as heartbeat, blood pressure, temperature, and the electrical activity of the skin – can be revealed to consciousness by physiological monitoring instruments and to some extent brought under conscious control.

One of the most astonishing discoveries of this research is that the mind can control a *single cell* among the sixty million millions composing the body. And the stimulation of a single cell can bring about large-scale effects. Yet a single cell in the human body is as seemingly anonymous as a grain of sand on a beach; consciousness does not know where it is or even what it looks like. But the unconscious does. And Barbara Brown, physiologist and dean of biofeedback research, commented on what that entails:

> The microsystems that are necessary both to conduct and not to conduct a nerve impulse are biochemical in nature. If an individual activates one cell at will, then he is also affecting the internal chemistry of the cell at the same time.

> More remarkably, he is simultaneously turning off the electrochemistry of tens of hundreds of other cells which must be suppressed in the process of isolating a single cell for activation.

If that ability were fully realized, she noted, even genetic engineering could, in theory, be brought about solely by mental control. That is, the mind could manipulate the stuff of life itself and, among other things, direct the course of evolution. Perhaps it already has.

The pinpoint accuracy with which the mind can influence a single cell and its chemistry has provocative implications for medicine. Brown added:

> The fact that many and diverse cellular processes are involved in bio-feedback hint another future for its ability to control complex patterns of body activities effectively, one that may one day be used to control one's own endocrine or metabolic life. Perhaps never to grow old or infirm.

That a prominent, knowledgeable and serious, if enthusiastic, scientist suggests that we have stumbled on the key to eradicating disease and aging – the attainment of physical immortality – must be one of the more arresting news items of recent times. But we shall see ample evidence that her speculations are not as overweening as they may at first appear.

Biofeedback is in its infancy, but it has already been used to treat more than fifty major ills of the mind and body as successfully as, if not more successfully than, conventional treatments. The ailments that respond to biofeedback therapy range over the spectrum of those that people suffer, emotional and physical. 'The trick in biofeedback is to get the consciousness out of the picture,' Brown said. 'Let the information pour in, and let whatever mental giant resides in the great unconscious use that information to put our body's activities aright without our conscious interference.' Brown added, 'The patient, with some latent capacity of his mental processes, possesses the magical therapeutic powers to rid the

body of the excesses of inappropriate reactions or misdirected physiology.' We shall see much more of this 'mental giant.'

The victim of a conversion reaction feels ill because of underlying psychological stress, but his body remains physically undamaged. Although biofeedback readily demonstrates that the mind can physically affect the body, that was recognized in ancient times and discussed by Galen in the second century. Any illness, we now know, may have a number of contributory components: allergens, germs or viruses, genetic predisposition, and psychological stress. And illness in which the body is physically affected and the psychological component is paramount, its principal or exclusive cause, is called 'psychosomatic.' As time passes, an ever-widening number of human ills are being acknowledged as either psychosomatic or involving marked psychosomatic elements – including cancer. Unlike conversion reactions, psychosomatic illness can ravage the body and kill.

Illnesses of psychological origin are common; so common that in the aggregate they surpass in frequency those arising from all other causes combined. In one representative study of a thousand patients referred to the diagnostic clinic at Mount Sinai Hospital in New York, investigators found that 81 percent had emotional problems as the bases of their complaints and that 69 percent had no physical problems at all. About the same percentage will be found in the typical family doctor's waiting room.

When the pressure is great enough, something must give. In one famous experiment nine women sought help for habitual abortion (a condition, often psychosomatic, in which a woman has had at least three miscarriages without ever having gone to term). They were 'forced' to carry their babies to term by an operation to prevent cervical dilation. But as their pregnancies progressed, three became sufficiently disturbed to enter psychotherapy. They were the lucky ones. After delivery five of the remaining six women became psychotic. Deprived of their accustomed psychosomatic release, miscarriage, their minds caved in. These women consciously wanted children and were willing to try anything to have them. But their unconscious minds did not agree.

Because it is so often a source of anxiety, one would ruefully expect sexual functioning to be a favorite target of psychosomatic nastiness. And so it is. Menstrual problems are generally psychosomatic, as are frigidity, impotence, and so many others that we can be surprised at the birth rate – if not the divorce rate.

Men have fewer sexual functions to disrupt than women, but those they have the psyche strikes with a vengeance. Impotence is psychogenic 95 percent of the time, and certainly most men who have survived adolescence know the devilry in a restive mind. But it is somewhat surprising that sterility is frequently psychogenic as well. Palti of Hadassah University said there is little doubt that male sterility may result from emotional stress acting on sperm production and cited the case of Chris. Chris was a mild-mannered, diffident man without sexual experience before his marriage. He wanted children but failed to have any after seven years of regular sexual relations. Why? Chris's physician found that his sperm was normal during or just after his wife's menses – when it is well known that women are usually infertile and fusty couples eschew sex anyway. But two weeks later, when she approached a fertile period, Chris produced semen without living sperm. One must be impressed with the knowledge, cunning, and economy of effort displayed by the unconscious in doing precisely what is needed at the exact time to achieve its goal, and no more.

The feminine psyche is no less cunning. We saw that a woman's unconscious could produce abortion if it objected to children, but it can also clamp the Fallopian tubes closed during ovulation to prevent the egg's fertilization in the first place. Other women may unconsciously avoid pregnancy by becoming ill or (actually) very tired at their fertile times. Still others will simply fail to ovulate at all. The frequent occurrence and perversity of psychogenic sterility is revealed by how commonly the wife of a childless couple becomes pregnant as soon as they adopt a child.

Illnesses are not always what they seem. Nor are accidents. One of the leading investigators of psychosomatic illness, H.F. Dunbar, needed a group of patients with other problems to use as controls in her research. Because Dunbar assumed

that anyone could break a bone, she began to select fracture patients as controls. But she was surprised to find they averaged four serious accidents each with, in many instances, the same arm or leg broken repeatedly. The accidents, then, were not just accidents. Dunbar had in fact uncovered a new psychogenic 'illness,' accident proneness – and one of the most lethal. People killed in accidents, Dunbar found, had usually worked up to the fatal injury through several lesser ones. Accident proneness has since been identified by many investigators as one of the most clearly defined as well as deadly psychogenic disorders.

The skin is unusually vulnerable to emotional stress, and even baldness may be a psychosomatic symptom in some cases. The victim may lose hair in patches or become totally bald, losing even his eyebrows. Lubowe and Cohen noted that a sudden shock often precedes the condition, such as the loss of a loved one, an accident, or a financial reverse. A large number of other skin problems are frequently psychosomatic: pruritus, eczema, psoriasis, and neurodermatitis are among the more common. But some are decidedly odd.

One such oddity is painful spontaneous bruising. It usually affects women and is signaled by a sudden pain in some part of the body. A lump appears and then discoloration as blood rises to the surface. Sometimes the victim bleeds through the skin; it does not generally break, but the blood seems to ooze up through the hair follicles. And the resulting bruises may be quite large and even disabling.

Again the cause – if not the how – is often clear. One woman suffered spontaneous bruising on the back of her hand after she had stifled an impulse to hit someone who was irritating her. As she walked away she felt a burning sensation and saw the back of her hand turning black. A second bruising occurred when she was about to scold her son for a careless accident. When she saw him covered with bandages, however, she become tense and was stung by a burning sensation on the back of her leg. A red lump slowly developed into a huge black-and-blue mark that required her hospitalization.

Obermayer cited the more dramatic experience of the sister of a soldier condemned to run the gantlet; that is, to

run stripped to the waist between lines of soldiers ordered to strike him on the back.

> At the hour assigned for the punishment she felt, when at home with her family, the sensation of the wounds her brother was receiving. In an ecstatic state, moaning and groaning, she fainted and was placed in bed. It was discovered that she bled from wound-like lesions on her back.

If a lash swung in the mind leaves stripes on the back, dream figures may be dangerous. So a man discovered after he heard his mentally ill daughter crying out. Entering her room, he found her struggling in seeming terror, though still fast asleep. Later she called for her sister as blood streamed from her right eye and ear. She was fully awake but had no idea why she was bleeding. Mitchell, who was studying her illness (multiple personality), hypnotized her and she was then able to remember that during the night a 'nasty man' had attacked her and hit her on the head with a hammer.

Here we can see the existence of bodily processes that can account for stigmata. John Evelyn in the seventeenth century reported on a serving maid who fell into a convulsive fit. After the maid revived, Evelyn saw that her arm was 'poudred with red Crosses, set in most exact & wonderfull order.' These slowly faded but were replaced by sets of other crosses, and always in a uniform pattern. But generally stigmata reveal their religious nature more directly and mimic the wounds of Christ on the cross. Theologians, incidentally, do not usually suppose there is anything miraculous about it.

More than three hundred stigmatics have been recorded over the centuries, but except for St Francis, there are only three reliable reports of men among them – all in the present century. Padre Pio was perhaps the most famous. His wounds appeared during prayer in the second decade of this century. The thirty-four-year-old friar suddenly cried out and fell senseless to the floor, bleeding from his hands, feet, and side. A physician reported that the lesions on his hands were covered with a fine, pink membrane – without fissures, swelling, or inflamation – that exuded nearly a glassful of blood and water daily. Stigmatics typically bleed during the

Easter period (and the stigmata are consequently called the 'Easter bleeding syndrome' at times), but Padre Pio's wounds never disappeared and bled copiously while he celebrated Mass. Although many stigmatics have shown unquestioned signs of having suffered hysterical disorders at some time in their lives, Padre Pio apparently did not – but a curious event in his earlier life is suggestive. As a novice at Benevento he occasionally ran a very high fever and special measurements found his blood temperature at 112°F.

The Easter bleeding syndrome is not restricted to the clergy or Catholics. Cloretta Robertson, a ten-year-old Protestant girl in Oakland, California, became stigmatic over a nineteen-day period before Easter in 1972. Early and Lifschultz investigated and found that blood appeared on her palms, feet, right side, and chest. There was no damage to the skin. Cloretta's stigmata appeared to have been precipitated by a television film of the Crucifixion she saw four days before the blood flowed. Here, beyond quibbling, is one instance of television's having influenced a child.

If the mind can cause bleeding, then it should be able to staunch it. Jack Schwarz, who painlessly shoves huge needles through his arms, is luckily one of those with such a mind. As Schwarz began the first trial with a needle during his demonstration at the Menninger Clinic, Green asked, 'Will it bleed?' It bled for about fifteen seconds. 'Now it stops,' said Schwarz, and it stopped. Green than asked him to prevent bleeding on the next trial. Schwarz complied and even though the needle passed through a small vein he didn't bleed when it was removed. The wounds closed as Schwarz withdrew the needle, leaving two small red spots and no detectable bleeding beneath the skin. The puncture site was not discolored the next day and in twenty-four hours one of the holes had disappeared. In seventy-two hours both had vanished. Although Schwarz has skewered himself hundreds of times, his skin remains smooth and unblemished.

Schwarz demonstrated control not only of pain and bleeding but also of infection. The needles he uses receive no special attention, occasionally fall to the floor, and are often dirty – sometimes deliberately so – but his wounds do not become infected. 'Infection is not possible,' Schwarz said,

'because my mind will not allow it.' Pharmaceutical companies would fall on evil days if his abilities were more common: he need not spend money on Band-Aids, aspirin, antiseptics, or antibiotics – the mainstays of medical consumerism. It is possible, however, for others to learn the trick.

As the needle penetrates his flesh, Schwarz's brain waves immediately slow to an alpha rhythm. Is that the mechanism? If so, others may learn to duplicate Schwarz's feats through biofeedback training. With that hypothesis in mind, Pelletier found a subject who already had excellent control over autonomic functions. And after training in the production of alpha waves, he too was able to pierce his biceps with a stout needle without pain or bleeding.

The extraordinary swiftness with which his wounds heal indicates that Schwarz has gone beyond the elimination of pain, bleeding and infection. The control he evinces over his body's tissues also appears to confer a degree of immunity to fire. He may not be able to relax in a furnace like Schadrach, but he is able to press a burning cigarette to his skin for as long as twenty seconds without harm. Green reported that Schwarz plunged his hands into a large brazier of burning coals and picked up a double handful which he carried about the room. When the coals were dumped on newspapers, the papers burst into flames. But Schwarz's hands, examined before and after the demonstration, bore no marks of the fire.

As with the soldiers at Anzio, unexceptional people in exceptional situations sometimes manifest these queer talents. Berthold Schwarz, a psychiatrist, observed members of the Free Pentacostal Holiness Church when 'saints' of the church in a religious frenzy, underwent ordeals by fire, strychnine, and poisonous snakes. Schwarz witnessed a 'saint' who 'turned to a coal fire of an hour's duration, picked up a flaming "stone-coal" the size of a hen's egg and held it in the palms of his hands for sixty-five seconds while he walked among the congregation.' Schwarz, bravely using himself as a control, could not touch a piece of the burning coal for even less than a second without being blistered.

The control of bleeding and infection, and the rapid healing

of wounds, suggest the chthonic mind may have powers to heal no less than to kill and maim. It does, and that can be seen to occur routinely in the use of placebos. A placebo (meaning 'I shall please' in Latin) is a sugar pill or some pharmacologically inert substance incapable of producing an effect by chemical or biological means. Nevertheless, it has long been known that a placebo could sometimes cure even intractable illnesses – the 'placebo effect' – and it remains one of the most potent 'drugs' in the pharmacopeia. Physicians of the nineteenth and earlier centuries did achieve cures with their nostrums and leeches, but only because of the placebo effect. Medicine had little else for thousands of years; with few exceptions, drugs were either pharmacologically worthless or injurious.

Because any drug, even a real one, can produce the placebo effect, a clinician testing a new drug will give half his subjects the experimental drug and the other half a placebo of identical appearance. Today these experiments are usually conducted 'double-blind,' a procedure in which the observers do not know which subjects received the drug and the subjects do not know that some of them have been given placebos. That way the experimenter hopes to equalize all the nonspecific elements of the study, such as the added attention and the desire to please the doctor. The only presumed difference between the two groups of subjects is the presence or absence of the trial drug.

In a study of Mephenesin's effect on anxiety, for example, the drug was found to produce such adverse reactions as nausea, palpitations, and dizziness. Were these merely the expected unpleasant side effects? A placebo was substituted for the drug and it produced identical reactions in an identical percentage of doses. One patient developed a rash after taking the placebos that disappeared immediately after he stopped taking them. And another actually collapsed in anaphylactic shock when she later took the real drug.

Placebos are perhaps best known for relieving pain, a job they do rather well. Over two decades ago Henry Beecher, a Harvard anesthetist, reviewed fifteen clinical studies and concluded that placebos reduced severe pain by half in 35 percent of over a thousand patients. Evans reviewed eleven double-

blind studies published since Beecher's report and also found that placebos reduced severe pain in about the same percentage of nearly a thousand patients. A placebo, then, cuts pain in half for about one person in three. And what Jack Schwarz does can be unwittingly duplicated, in part, by others who simply swallow a large purple placebo.

Placebo analgesics perform well when it is considered that even the most powerful analgesic does not necessarily eliminate pain, but may merely succeed in reducing it to tolerable levels for some and not at all for others. Three patients out of twelve typically gain no relief from anything. Neither a placebo nor a standard dose of morphine helps these unfortunates. Five of the twelve will greatly benefit from morphine but little or not at all from a placebo. The remaining four – one third of the patients – will have their pain reduced equally well by either morphine or a placebo. The placebo responders, moreover, have a strong advantage when they take other painkillers because they are more responsive to them. One study found that a standard dose of morphine was only 54 percent effective for patients insensitive to placebos, but 95 percent effective for placebo responders. Here we see that the placebo effect may accompany and augment the pharmacological action of a 'real' drug.

Evans found that a placebo is 56 percent as effective as morphine. But amazingly, he discovered that it is also 54 percent as effective as Darvon and 54 percent as effective as aspirin – though the drugs vary greatly in potency. That is, the degree of relief obtained from a placebo is a stable percentage of the relief expected from a specific dose of some comparison drug – regardless of what that drug is. How does a placebo know which is which?

The efficacy of a placebo, then, is directly proportional to the apparent efficacy of the active drug the physician *thinks* he is using. When he assumes the drug is strong, the placebo effect is strong; when he thinks it is mild, the placebo effect is also mild. That is a singular result and one difficult to reconcile with the way we think our world operates. We shall return to it later.

Most investigators have assumed that a placebo is a form of suggestion. Evans disagreed. He emphasized that careful

studies have failed to find any relation between suggestibility and sensitivity to placebos, though of course he acknowledged the importance of suggestion in making a placebo more efficacious. A placebo pill, we know, should taste slightly bitter; it also works better if it is large and purple or brown, or small and red or yellow. Two work better than one and a placebo injection is usually more effective than a pill or capsule. When hypodermic needles were introduced about a century ago, physicians noticed that injections of plain water appeared to control pain as well as morphine. Yet after an initial burst of excitement the novelty wore off and the procedure became little more effective than other placebos.

But not all placebo needles are hypodermic. Stephen Berk and his associates performed an experiment with forty two sufferers of tendonitis or bursitis of the shoulder. All the subjects thought they were receiving orthodox acupuncture treatment, but only half did; the other half were given a placebo treatment (the needles weren't stuck in the right places). The investigators found that nearly 70 percent of all subjects reported some relief, and the placebo group improved as much as the acupuncture group. They also found that neither the subjects' conscious beliefs nor expectations before treatment had any effect on the outcome. Their results also confirmed Evans's findings in showing no relation between improvement and tests of suggestibility given before the experiment.

A 'new' placebo, as any new drug, seems to be affected by the well-known decline effect. Trousseau said in 1833, 'You should treat as many patients as possible with the new drugs, while they still have the power to heal.' Though he didn't know it, Trousseau was actually speaking of placebos, since with two or three exceptions no drugs in 1833 had the power to heal any other way. But genuine drugs and procedures also tend to be the most successful, sometimes fantastically so, in their earliest trials and in the hands of their discoverers. Later, as others explore their use, their potency declines until it reaches some stable level or the drugs are abandoned.

A heartbreaking example of that is found in the work of William Coley. In 1894 he reported curing cancer patients with injections of *Streptococcus erysipelatus*. And for the next

forty-five years Coley and physicians associated with him cured almost half of over eight hundred patients with proved cancers. But others did not obtain his results, and after his death in 1936 his therapy disappeared. If his therapy was a placebo, he showed that a placebo can cure 50 percent of cancer patients – in the right hands. If it was a 'real' treatment that was simply eroded by the decline effect, we are still troubled by a mystery. Yet it may be that the placebo effect can combine in some unguessed-at synergistic way with 'real' medicines to produce results not otherwise obtainable.

The placebo effect is not limited to pills and injections, of course, but can be seen in a variety of procedures. Dr Perkins, an American physician practicing in London during the late 1700s, introduced what he called 'metallic tractors.' Used in pairs, metallic tractors were two small pieces of magnetized metal that were moved gently about the afflicted part of the body to cure most of the ailments known to man. That the tractors cured could not be doubted, but Dr Haygarth, an eminent physician of Bath, suspected the cures were effected by the power of 'imagination.' Anticipating methods of future centuries, he and Dr Falconer made wooden tractors, which they painted to resemble the steel ones, and used them to treat patients. The fake was exposed. Haygarth discovered that wooden tractors would permit the crippled to walk just as well as those of steel. And the tractors were laughed out of England.

Science triumphed. Those who had been freed of pain and disease were now compelled to return to their suffering. Medicine had committed itself to the principle that legitimate cures could result only from the knife or chemicals or leeches, and those who could not be cured by these were honor bound to suffer. The astonishing power of 'imagination' to heal was a signal for neither its deliberate use nor investigation. And it remains largely neglected today.

A few enlightened physicians now and then made deliberate use of the placebo effect. One amusing case of centuries past was told by Dean Granville. A man in Provence, France, was depressed and convinced that he was possessed by a devil (an illness that seems to be recovering popularity). His canny doctor visited him in the company of a priest and a surgeon

and a bat in a bag. The doctor explained to his patient that a slight operation would cure him. Prayers were said and the surgeon made a small incision in the man's side. Then the doctor having held the bat in readiness as the incision was made, released it to flutter about the room and cried out, 'Behold, there the divel is gon.' The man was cured. The same man in the hands of a psychologist or psychiatrist nowadays would undergo lengthy, expensive treatment and, as likely as not, would still be annoyed by his devil.

It must not be supposed that placebos are effective only against pain, 'imaginary' illnesses, or disorders pigeonholed as entirely or predominantly psychosomatic. Shapiro wrote that 'placebos can have profound effects on organic illness, including incurable malignancies.' Steven Black told of an African with skin cancer, definitely diagnosed by biopsy at the Lagos General Hospital, who was cured by a witch doctor's ointment. The ointment was sent to London for analysis and found to contain nothing but soap and wood ash. Whatever spells the witch doctor may have mumbled over it, of course, did not emerge in the analysis.

We have witch doctors in the West too. Bruno Klopfer reported the case of Mr Wright who suffered a generalized and far advanced malignancy, lymphosarcoma, that resisted all treatment. Mr Wright had huge tumors the size of oranges lodged in his neck, armpits, groin, chest, and abdomen. His spleen and liver were also enormously enlarged, and several liters of fluid had to be drained from his chest every other day. Mr Wright was often on oxygen and, in his physician's opinion, would soon die, probably within two weeks.

Mr Wright had not lost hope, however, although his physician had none. The newspapers had reported a new cancer drug (Krebiozen), and he heard that the clinic treating him was one of the facilities chosen by the American Medical Association for its evaluation. But Mr Wright was too near death to be included in the experimental group. New drugs, after all, are seldom tested on the hopeless. Nevertheless, when the drug arrived Mr Wright was so insistent in pleading for his 'golden opportunity' that his physician, Philip West, did not have the heart to exclude him – though he acted

against his own judgment and the rules of the evaluation committee.

Mr Wright received his first injection on Friday. Dr West did not see him until the following Monday, when he expected him to be moribund or dead. But on Monday he was pleasantly shocked to see Mr Wright ambling cheerfully about the ward. The excited physician rushed to examine the other patients who had received their injections at the same time. His hopes crashed. They were either unchanged or had changed for the worse. For Mr Wright, on the other hand, the tumors 'had melted like snow balls on a hot stove' and were now half their original size. Mr Wright was given his subsequent injections by the puzzled physician and within ten days was discharged from the hospital with little sign of disease. No longer in need of oxygen, he was breathing normally and took off in his airplane to fly at twelve thousand feet without discomfort, an altitude at which oxygen is recommended.

Mr Wright, obviously no bumpkin, continued to follow the medical news and became alarmed when it began to appear that his life-saving drug was worthless. As the dismal reports persisted, he relapsed into his original condition and returned to the hospital to die.

Dr West, who also knew the drug was ineffective, decided he had an opportunity to perform an important experiment, one that could not hurt and might possibly help his patient. He now knew that Mr Wright was a splendid placebo reactor, for he knew that what was essentially a placebo had previously cured him. He told Mr Wright not to believe the newspapers, an easy matter for a man of his evident intelligence, because the drug was in fact very promising. When his patient asked why, then, he had relapsed, Dr West told him the drug deteriorated on standing, but a new 'super-refined, double-strength product' would be delivered the following day. Mr Wright's gloom vanished. The next day he was given his promised injection, but now it was plain water. West reported that his patient's recovery from the second 'terminal' condition was even more dramatic than the first. The tumors evaporated and, glowing with health, he resumed flying. And Philip West had shown his colleagues they should try a

'super-refined, double-strength product' on their hopeless patients – some of them might be Mr Wrights.

Again Mr Wright was symptom-free for over two months. Then the American Medical Association announced to the press that the drug he had taken, and thought he had taken, was useless in the treatment of cancer. Within a few days of that dreadful news Mr Wright was readmitted to the hospital where he died in less than two days. Had he not been so fond of reading, he might be alive still. And perhaps cancer has been so remorselessly fatal because we have believed it is.

Mr Wright's belief seemed to affect his disease. But what of the physician's? Francis Bacon in his *Sylva Sylvarum* (1626) described how to heal a sick gentleman by faith:

> First pick out one of his servants who is naturally very credulous; while the gentleman is asleep, hand the servant some harmless concoction and tell him that it will cure his master in a certain space of time. The [energies] of the servant, made receptive by his complete faith in your medical powers, will be powerfully stamped with the image of this future cure; they will flow out and similarly stamp the [energies] of his master, also in a state of receptivity because he is asleep.

Bacon not only recognized the efficacy of a placebo, but also the rather surprising circumstance that it's the healer's belief that is important (the 'healer' being the one who actually administers the medicine). We saw that when a physician thought he was using a powerful drug, but unknowingly used a placebo, he got a powerful effect – regardless of what his patient thought. But if the physician thought he was using a weak drug, he got a weak effect. The physician as an individual determines what a placebo will do, and different physicians may even get contradictory results. Bernard Grad of McGill University wrote of two investigators who measured the gastric secretions of healthy people in response to an oral placebo. The first as consistently got a 12 percent increase in gastric acidity as the second did an 18 percent decrease.

Grad said that 'the first person who must have faith is the physician or healer, and this is more important than the

patient having the same faith.' A striking example of that was provided by a physician conducting experiments with a severe asthmatic. He found that a certain new drug was helpful but a placebo was not. Unknown to him, however, the drug company had substituted a placebo for the active drug. Both 'drugs' were placebos, yet the only one that worked was the one the physician *thought* was genuine. The positive results he secured, then, were entirely a consequence of his own belief and not the patient's.

There are thus two placebo effects: The first is exogenous, arising from the healer; we have met it earlier as the Pygmalion effect, the effect that leads to an experiment's turning out as the experimenter expected. The second is endogenous, arising from the patient's belief or expectation. Of course the two effects may be often difficult to separate in practice, since they usually work together, but they are different and the distinction will prove useful.

A physician may deliberately use a placebo, knowing it to be a placebo, and obtain cures – if he believes that a placebo can cure, as did Philip West or Granville's doctor with a bat in a bag. Or if the physician feels his belief is unsteady, he may follow Bacon's advice and have his potion administered by someone who does not doubt its effectiveness. Of course a physician may enlist the aid of others in awakening the placebo effect even when he knows quite well a placebo will cure. Hippolyte Bernheim, a noted French physician of Nancy, placed a bottle of water in full view in the room where he received patients. After examining the children brought to him, he pointed out the bottle to their mothers and told them it was a potent remedy that would certainly heal their children. And he took care to keep them in the room for some time to create a general atmosphere of belief in the medicine. He gave details of twenty-six cases of children with various infantile maladies, varying in age from nineteen days to thirty-three months, except for one child age five. In several cases ordinary medical treatment had failed. But Bernheim had only one failure; nineteen were cured and six improved. In three suffering eye problems he had them bathe their eyelids with the water as well as take it internally. We are not likely to think a nineteen-day-old infant is susceptible to

verbal suggestion or, for similar reasons the (endogenous) placebo effect. Most of the children, then, must have responded to the Pygmalion effect originating primarily with their parents who had been primed by Bernheim.

Physicians, we see, are clearly not the only ones who may elicit the Pygmalion effect. And it is reasonable to suppose the effect may flow from all those about the patient – which intimates that nurses should be more effective when they question neither the omnipotence of physicians nor the infallibility of chemistry. Perhaps we err in educating them.

'Faith' and 'belief,' by the way, have no religious connotations as used here. Preachers, priests, holy men, holy wells, holy shrines and images, prayers, relics, and 'special agents of God' have undoubtedly produced genuine cures – even of grave illnesses. Yet those who profess to worship an almighty God should find a hint of blasphemy in the notion that these cures are obtained through his intervention. An almighty God could quite as easily restore severed heads or missing eyes as he could cure asthma. That does not appear to happen (which is not to say that it could not). So if a patient is cured by water from a 'holy' well or a big purple pill, we shall assume that God does not particularly sanction either and that the Pygmalion and placebo effects are active in both instances.

The placebo meets all the criteria of a true wonder drug and has proved effective in all the ills of mankind. And it may conceal the germ of a panacea. Unfortunately it is erratic, working for some patients some of the time, and for some physicians some of the time, but not for others. Still, if it works at all, it should be possible to make it work better and more predictably. Despite its medical potential, however, the placebo has not stirred up much scientific interest and its boundaries remain unsurveyed. Perhaps it is ignored because it insults the spirit of chemistry pervading medicine, or perhaps because its active ingredient seems to lie in some paranormal gloaming. And, obviously, there is little profit in sugar pills. But the principal reason is no doubt that such an investigation is not an investigation of a pill at all, but of the chthonic mind.

If a placebo heals, it can also kill. The coroner of the City of

Baltimore, R.S. Fisher, remarked that people died every year of absurd suicidal gestures – merely scratching their skin, for example, or taking a few aspirin tablets. And Wolf noted the similar marvel that 85 percent of the people who die of snake bite do not have enough venom in their blood to kill them. These people appear to die because they expect to.

A lethal placebo may also tick away like a time bomb. Cannon told of a young African who unknowingly breakfasted on wild hen while staying with a friend. Several years later when his friend asked him if he would eat wild hen, the other answered that he couldn't because it was taboo. His 'friend' laughed and pointed out that he had eaten it before while at his home. On hearing that he began to tremble and died within twenty-four hours.

As with other placebos, the lethal ones need not be something taken internally. Carl Schleich saw a patient who was in a very confused state and wanted Schleich to amputate his arm. After pricking it with a pen, he became obsessed with the fear that he would die of blood poisoning if his arm wasn't removed straight away. Several surgeons had already refused, as Schleich was of course compelled to do. The patient's wound was trivial, but he could not be convinced that it was. And when he died the following morning an autopsy revealed no cause.

A placebo of any description obviously neither heals nor kills by its own virtue; that is an act of the chthonic mind. A placebo is merely a method, a simulacrum of ordinary medicine, to inveigle the chthonic mind into bestowing a favor. It is simply the medical version of a broad range of things, including holy wells, that can stimulate the mind to act on the body. Alexis Carrel, Nobel laureate in medicine, accompanied a group of patients to Lourdes in the early 1900s. Among them was Marie Bailly, a young woman in the final stages of tubercular peritonitis, a diagnosis confirmed by two other physicians. Tubercular lesions riddled her lungs and skin; the infection had spread to the lining of the body cavity and Carrel expected her to die at any moment, certainly within a day or two. Yet when she was taken to the Grotto, he observed an extraordinary transformation. Her pulse and

breathing rapidly returned to normal; her distended abdomen began shrinking to its normal size, and color tinged her livid, emaciated face. That evening he examined her thoroughly in the presence of three other physicians. There was no doubt about it. She was completely cured.

These events have prompted a few bold physicians, such as Carl Simonton, to seek more reliable ways to coerce the mind into healing. He has his cancer patients go through a meditation and self-healing 'ritual' three times a day. They relax, then visualize their cancer and the action of the body's defense mechanisms. Simonton said his recovery rate is statistically much higher than would result from radiation therapy alone. He described the case of a man, age sixty-one, with extensive cancer of the throat who had been given a 5 percent chance of recovery. The man's weight had plunged to seventy-five pounds and he couldn't take solid food. But with meditation therapy he recovered. Understandably enthusiastic about the technique, he then used it on his arthritis – to eliminate that as well. Sex was next. After suffering impotence for many years he resumed regular sexual intercourse following only ten days of Simonton's meditation therapy. A veritable elixir of life, at least for him. It would be interesting to know what he meditated on afterwards.

Chapter 4

Perceptive trances

School in the Philippines can be as dull as elsewhere and boredom is always an incitement to pranks. A boy yawned and decided to break the buzzing monotony with a shrill, abrupt shout. Moments later the teacher, a young woman, began undressing before her pupils. The rascal who had shouted was now slowly unbuttoning his shirt, deliberately and with mischief aforethought. And the teacher was imitating him – but not willingly. Like a number of Filipinos, she was subject to *lata*, a trance state brought on by a startling sound in which susceptible people will compulsively imitate actions they see or words they hear. That reaction to startle is sufficiently widespread in the Philippines for the headhunters of Luzon to have turned it to practical use. They developed sharp, piercing cries to startle their victims into a brief paralysis that made gathering trophies a less hazardous sport.

The two previous chapters set forth evidence that a person's unconscious can affect his body and conscious mind in innumerable ways. It has the ability to cure, though whimsically, everything from impotence to cancer, or it may cause blindness, sterility, bald heads, or death. And in addition to composing poems and solving problems, it can create delusions, hallucinations, and false memories – or sweep the conscious personality from the body and install another in its place.

In this chapter, with *lata* pointing the way, we shall look at one of the most potent means for one person to sway that 'mental giant' residing in the unconscious of another, the sorcerer's ally that is indifferent to the human race.

Spontaneous trance states of heightened suggestibility are common among many primitive peoples throughout the world. But they are not confined to remote countries or obscure tribes; we perceive in *lata* the characteristics of hypnosis, which were known to the civilized nations of antiquity. At least one ancient Egyptian papyrus exists, stemming from early dynastic times, that describes recognizable hypnotic induction procedures. And Thelma Moss, a University of California psychologist, reported the remarkable hypnotic powers of a Peruvian Indian, an inheritor of an ancient tradition, who 'felled a Ph. D. anthropologist to the floor like a rag doll' without a word or gesture, but with his eyes alone. Yet whatever knowledge of hypnosis existed in the West vanished until rediscovered by Mesmer in the late eighteenth century.

Mesmer had a very limited understanding of the trances he produced, but he practiced the rudiments of hypnotism with a rococo showmanship that attracted wide attention. Mesmer, a physician, developed his technique to treat illness and, probably because it was successful, it naturally incited an acrimonious and determined attack by his colleagues. The establishment, preoccupied with the science of leechcraft, knew that mesmerism was a humbug. And a governmental commission 'investigated' the phenomenon to report in 1784 that it was all 'imagination' – just as with the metallic tractors. That was not an explanation, of course, but an effort to explain it away. The same commission, by the way, had two years previously announced that meteors were impossible because there were no stones in the sky. But whether or not it was imagination, Mesmer's 'animal magnetism,' continued to cure.

The Marquis de Puységur became fascinated with the reports of these cures and persuaded Mesmer, for a consideration, to teach him how they were accomplished. Puységur was then delighted to find he was able to relieve several of his servants of toothaches. He was attempting to treat another servant, twenty-three-year-old Victor Race, for a mild case of pleurisy and was making the required passes with his hands when, to his surprise, Victor fell into what appeared to be a deep sleep. But it was a sleep of no ordinary kind – Victor

began talking. And that was the first reported occurrence in the West of induced somnambulism.* The strange condition captured Puységur's interest and he began its exploration.

Puységur probably deserves the credit for introducing hypnotism to the West. And by 1825 he and the other early magnetizers had discovered most of the phenomena of what is now hypnosis. Clark Hull noted that nothing new of any importance has been discovered since. Puységur borrowed from Mesmer and called it 'animal magnetism,' but that simply reflected the fashion of his age to supply at least something resembling a mechanical explanation for everything. The idea of an 'electric fluid' was popular at the time and was evoked to explain a variety of ills, such as cholera, for which a 'miasmatic electric effluvium' was the favored explanation. One physician asserted that just as thunderstorms turned milk sour, atmospheric electricity could turn bodily fluids acid and thus cause cholera. Trenchant logic, but 'animal magnetism' proved to be a poor choice that irritated the establishment instead of appeasing it, though the word in vogue today, 'hypnotism,' is scarcely better.

One of the earliest findings was that magnetism could make any desired part of the body insensitive to pain. Its anesthetic value would seem to have been of obvious importance, especially in surgery, before the days of chemical anesthetics. And a few did perceive its value. As early as 1797 Dubois amputated a breast while his patient slumbered in a magnetic coma and other operations followed sporadically over the years. In 1842, for example, W.S. Ward demonstrated that magnetic anesthesia could make surgery painless. But his report was stricken from the minutes of the Royal Medical Society on the grounds that his patient was a fraud. The operation, incidentally, was that of having his leg cut off at the thigh.

With these attitudes it isn't surprising that the first large-scale demonstration of magnetic anesthesia took place beyond the pale of Western censure. James Esdaile, a Scot-

* 'Somnambulism,' which in other contexts means 'sleep-walking,' is a term for a very deep stage of hypnosis in which the subject may appear to be awake and behaving normally. The somnambulist, however, is nonetheless profoundly hypnotized and will exhibit most of the deep trance phenomena.

tish surgeon practicing at a large charity hospital in India during the middle 1800s, performed 261 major operations and thousands of minor ones on patients anesthetized by magnetism. The operations often lasted three hours or more and included amputations, the removal of tumors, as well as the cleaning of abcesses and other painful procedures. Only sixteen deaths occurred – these were not from surgery – and the wounds healed with unusual rapidity (as they appear to heal among people who are able to control pain). That was an astonishing record in the years before sterile techniques and undreamed of antibiotics. Even today surgery has a death rate that may be as high as 2 percent. Nevertheless, his confreres predictably denounced him as a quack and dismissed his patients as 'determined imposters.' Esdaile described, in gory detail, an operation in which he removed a large tumor from one determined imposter's head. After a bravura performance of pretending peaceful sleep while large parts of his face and head were sliced, he impishly feigned recovery as Esdaile was suturing the incisions and denied any memory of pain or discomfort. We can pardon Esdaile for being taken in by these crafty Indians who, for inscrutable reasons, joined by the thousands in a conspiracy to deceive them.

Today it is difficult for us to see what all the pother was about. Hypnotism has become a widely if seldom used therapeutic tool that has attained a humdrum respectability. Even the American Medical Association pronounced it to be a legitimate medical technique and Parliament enacted the Hypnotism Act to control its use. Indeed, hypnotists now have an establishment of their own that works as hard as any to root out and punish heretics. Although no single theory of hypnosis has achieved consensus – that is, we have no idea how it works – hypnosis is now viewed as one of many possible altered states of consciousness. And it may turn out that a number of these states now subsumed under 'hypnosis' are qualitatively different despite their superficial resemblance; they may even be as distinctly individual as those who experience them. Yet if the fundamental nature of hypnosis eludes us, just as all other mental phenomena, we have still learned a good deal about it.

Hypnosis may be brought about by suggestion as well as by other means, but most investigators agree that hypnosis and suggestion are not identical. Regardless of how it is brought about, however, hypnosis is a state in which suggestion has its most powerful effect. Nevertheless, suggestion alone can be surprisingly effective without evident hypnosis. Bernheim cited cases in which he easily caused non-hypnotized subjects to believe they had been either witnesses to a crime or victims of one; they were absolutely sure of their suggested memories and would swear to their truth in court – a possibility that should disturb judges.

But in hypnosis the efficacy of suggestion is much more pronounced. Even bodily functions normally beyond conscious control can be manipulated. The stomach contractions of hunger can be eliminated by suggesting to a hypnotized subject that he has had a large meal. Similarly, the heart can be speeded up or slowed down and the amount of blood circulating in any one limb can be increased. And if the subject 'drinks' suggested water, a corresponding increase in urinary output follows (with the water drawn from the body's tissues).

Sometimes the responses are more puzzling. A hypnotized subject was given a concentrated sugar solution and told it was only distilled water, and his blood sugar level did not increase. In a seemingly related experiment Platonov reversed the old stage trick of making subjects drunk on plain water by giving them large quantities of alcohol and keeping them sober, both while hypnotized and afterwards. And it was likewise found possible to prevent the toxic effects of massive doses of morphine.

The hypnotic control of bodily fluids clearly has many practical applications. One was found by Forel and Bramwell who were able to cause or stop menstruation and regulate its duration and intensity. That raises the possibility of controlling conception by hypnotism – which has been done. Erskine remarked that sterility could also be produced hypnotically and added that abortion could be produced as easily.

If a child arrives anyway, hypnotism still has its uses. Although Esdaile reported that he was able to stop the secretion of milk by hypnotism, Braid did the opposite. He

hypnotized a patient who was nursing her child and suggested the secretion of milk would increase in one breast. She didn't recall the suggestion after awakening, but she did complain of a feeling of tightness and tension in the breast indicated. Her husband then told her what Braid had suggested. She was doubtful because her child was fourteen months old and the milk had nearly disappeared. Nevertheless, her breast quickly became engorged with milk – and her figure embarrassingly lopsided. More for cosmetic than nutritional reasons, Braid hypnotized her again and suggested the other breast would also increase its secretion of milk. She was then able to nurse her child for another six months with a supply of milk, symmetrically distributed, more abundant than ever.

It is clear that hypnotism can produce psychosomatic reactions – even the more unusual ones, such as spontaneous bruising. V. Bakhtiarov at the surgical clinic of the Saratov Medical Institute in 1928 described an experiment in which a hypnotized subject was given a suggested blow to the forearm. Several hours later a bruise appeared. Even the related stigmata can be produced. An Austrian peasant girl was under treatment by Alfred Lechler for hysteria. On Good Friday in 1932 she was greatly affected by pictures depicting the suffering and death of Christ. That evening Lechler gave her the hypnotic suggestion that wounds would develop in her feet and hands. And moist wounds appeared during the night. Further suggestions deepened them and also brought about tears of blood, the Crown of Thorns, and an inflamed, sagging shoulder.

The skin's sensitivity to suggestion has been shown in a variety of ways. The hypnotic production of blisters is a fairly common experiment and Frank Pattie has cited a number of examples. In one representative experiment an investigator touched a hypnotized subject lightly on the arm with an unlit match and suggested that a blister would form. After waking the subject, two observers watched his arm continuously. Three minutes later his skin had reddened where it was touched and in six minutes more a flabby, thin-walled blister the size of a bean appeared.

Even if the body fails to carry out a suggestion in a direct physiological manner, it may still be indirectly accomplished

by 'fakery.' Jolowicz reported an attempt to hypnotically induce a blister on an entranced subject's right forearm. But nothing happened at the time and the subject did not recall the suggestion. Several days later, however, she 'accidentally' scalded herself while making coffee and was blistered on the exact spot suggested. Accident proneness, as we saw, may be highly specific.

The body is clearly sensitive to hypnotic suggestion, and consciousness is no less so. We have already seen examples of the use of hypnotism in recovering memories, but it may also suppress or change them. We saw that through suggestion alone Bernheim could cause subjects to 'remember' fictitious events they would swear really happened to them. And it is possible to make a good subject forget his own name and address, or even to make him believe he has quite different ones – which happened spontaneously to Ansel Bourne when he became A.J. Brown. In response to hypnotic suggestion a good subject will not recognize his best friends or will warmly greet a stranger he is told is a friend.

The senses may also be manipulated by hypnotic suggestion. Black gave hypnotized subjects the direct suggestion that they would not be able to hear a tone at the frequency of 575 cycles per second. In later tests they showed no physiological startle reaction to the tone when it was suddenly blared at high volume. They were also unable to feel a tuning fork vibrating at the same frequency when it touched their skin.

Vision may be similarly affected and suggestion can bring about myopia, color-blindness – complete with afterimages in the appropriate complementary colors – or blindness. In one study of hypnotic blindness, Loomis found that subjects not only said they could not see, but their brains no longer reacted normally to bright light. An entranced subject may also be made blind to specific things. If he is given the suggestion or posthypnotic* suggestion that a certain person is no longer in the room, the person will disappear. And the subject will

*Posthypnotic suggestions are those given to an entranced subject that are intended to take effect *after* he has awakened from trance and is in his ordinary conscious state. The suggestion is usually scheduled to take effect on the occurrence of some word or signal that is part of the suggestion, such as 'Your foot will itch when you hear the word "tiger." '

experience a negative hallucination, not seeing what is there. The unconscious artist who paints the picture of the external world takes the suggestion, eliminates the person from the picture, and fills in the background with the same convincing strokes that it used to create the entire visual world of Lhermitte's patient. That can cause some puzzling experiences for the subject. If someone hands the 'invisible' person, say, a glass of wine, it will seem to the subject that it's suspended in midair.

Positive hallucinations, seeing what is not there, can also be induced by hypnotic suggestion and may be very convincing to those who experience them. Activating the same mechanisms that caused Ruth to be harrassed by a hallucination of her father, hypnotism can create hallucinations in the trance state or, posthypnotically, in the waking state. And in the waking state, as in the case of Ruth, these may blend in flawlessly with the ordinary waking environment. George Estabrooks, an authority on hypnotism, commented on a 'pet' polar bear he conjured up as a hallucination that later became something of a nuisance. At first Estabrooks was able to bring about the hallucination at will and enjoyed materializing it for himself during idle hours. But after a while the bear began to appear spontaneously, without being called, and fell into the unpleasant habit of turning up in unexpected places and dark corners at night (how like chthonic creatures). Even though he knew it was a hallucination, it was nevertheless a very real bear to him and it eventually became unnerving. And with Estabrooks's bear we see that suggestions made to an entranced subject may remain fully active while he is later in a normal state of consciousness. We may also see a little of the process that summoned the disturbing entity Becky, the 'ghost' that annoyed the group studied by Eisenbud.

Carl Jung reported an incident that took place when he was demonstrating the therapeutic use of hypnotism to a group of medical students. His patient was a middle-aged woman who had been afflicted with a painful paralysis of the left leg for seventeen years. Jung customarily asked his patients for a brief history before inducing hypnosis. This one obliged too

well and dilated on her condition in garrulous detail. Jung finally interrupted her: 'Well, now, we have no more time for so much talk. I am now going to hypnotize you.' Jung had scarcely said the words when her eyes closed and she fell into a deep trance without 'any hypnosis at all.' Nonplussed and becoming increasingly uncomfortable as twenty students waited for the demonstration to begin, Jung decided to simply awaken her. To his discomfiture, it required ten minutes.

The woman finally came to, giddy and confused. Jung said to her, 'I am the doctor and everything is all right.' At that she cried out, 'But I am cured!' threw away her crutches and walked. Flushed with embarrassment, Jung told the students, 'Now you've seen what can be done with hypnosis.' He actually had not the slightest idea what had happened, but the woman had in fact been cured. That is the stuff of miracles. What was a contretemps to a scientific audience would have been evidence of supernatural power to rustics. A good many gurus have set up shop with far poorer credentials.

Hypnotism has been used to treat a large number of human ills, including one of the most seemingly trivial, warts. In one study fourteen patients with longstanding warts all over their bodies were given the suggestion that the warts on one side of their bodies would vanish. And in five weeks they were gone. Warts may be a paltry matter, except to those who have them, but the implications of their hypnotic removal are not paltry.

Lewis Thomas pondered the implications: 'I have been trying to figure out the nature of the instructions issued by the unconscious mind,' he said, 'whatever that is, under hypnosis. It seems to me hardly enough for the mind to say, simply get off, eliminate yourselves, without providing something in the way of specifications as to how to go about it.' And because warts are caused by a virus, we face an additional complication. 'If my unconscious can figure out how to manipulate the mechanisms needed for getting around that virus,' he said, 'and for deploying all the various cells in the correct order for tissue rejection, then all I have to say is that my unconscious is a lot further along than I am.' He saw that the unconscious had to control intricate processes 'beyond anyone's comprehension,' and that it must be a 'cell biologist of world class' able to sort through the various kinds of cells,

all with different functions, to mobilize the right ones and exclude the wrong ones for the specific task at hand.

Thomas did not hesitate to put his finger on the crux of the matter, and Barbara Brown's 'mental giant' becomes even more clearly a 'who': 'Well, then, who does supervise this kind of operation?' he asked. 'Someone's got to, you know. You can't sit there under hypnosis, taking suggestions in and having them acted on with accuracy and precision, without assuming the existence of something like a controller.' Although Thomas thinks it would be wonderful if we had any idea of what went on when a wart is hypnotized away, he is rather uneasy about what *is* going on. 'Some intelligence or other knows how to get rid of warts,' he said, 'and this is a disquieting thought.' But that issue is not confined to hypnosis; it also lurks in psychosomatic reactions, biofeedback, and a number of other phenomena discussed so far. It is only that investigators usually avoid confronting the problem of *how* the unconscious does what it does and '*who*' in the unconscious directs it. 'Someone's got to, you know.' And that someone appears to be completely unconcerned with human values.

The 'controller' in the unconscious may be persuaded to do more than cure warts, however remarkable even that may be to a biologist. Cioppa and Thal reported on a ten-year-old girl who suffered a juvenile rheumatoid arthritis that didn't respond to conventional treatment. Her ankles and knees were so grossly swollen she had to use a wheelchair. After all else failed, her physicians decided to try hypnotism. She was wheeled to her second hypnotic session unable to walk and understandably depressed. Yet four hours later she rode her bicycle without pain. The swelling in her knees and ankles quickly subsided and she was able to resume a normal life, free of arthritis.

Well, it might be argued, arthritis is a capricious disease that has been cured at one time or another by a variety of things, even copper bracelets. Perhaps cancer is a better test. Elmer Green reported the case of a man dying with bladder cancer; metastatic tumors were scattered throughout his body and he was considered hopeless. But since he was a good hypnotic subject, hypnotism was used in an effort to control

his pain. It then occurred to his physician that he would be a good patient for an experiment in blood control. Because of urinary complications a catheter had been inserted, and the blood-and-urine mixture in the transparent catheter gave an immediate indication of the amount of bleeding in the cancerous area. The physician thought that if, by using hypnosis and visualization techniques, he could cut off the blood supply to the tumor, he could reduce the bleeding and perhaps starve the tumor at the same time. Except for the overt use of hypnotism, his approach resembles the one adopted by Carl Simonton discussed previously.

Soon after he made the attempt blood disappeared from the urine and bleeding had almost entirely stopped within a week. The patient's health improved to the extent that he was permitted to go home for a week. Unfortunately, on his return to the hospital a ward physician accidentally killed him with a cystoscopic examination. An autopsy disclosed that the bladder cancer had shrunk to the size of a golfball and the metastatic tumors had vanished.

Yet the unconscious is more than a cell biologist of world class, as a sixteen-year-old boy with Brocq's disease proved. Except for his head, his entire body was covered with a black, horny layer of scaly 'skin.' It was as hard as a fingernail and so brittle that it cracked and bled on any attempt at bending. These cracks became infected and, compounding his misery, surrounded him with a stench. He had been born with his condition – it is hereditary. And since the victims of the disease have it throughout their lives, their lives are usually short. It was considered incurable until 1951.

In that year, as a last resort, the boy was referred to A.A. Mason of the Queen Victoria Hospital in London for hypnotherapy. The first hypnotic session concentrated on the left arm. A week later the scales had sloughed off the arm to leave it soft and pink. Mason repeated the procedure, shifting his attention from one part of the boy's body to another. And after several months of this his patient was able to live a normal, symptom-free life.

Barbara Brown thought that through biofeedback it would be possible for 'genetic engineering' to take place by mental control. Her expectations are realized in the hypnotic cure of

Brocq's disease. For Brocq's disease is genetic – the reason it was regarded as incurable. But in the boy's case hypnotic suggestion either changed his genetic instructions or overruled them, which adds up to the same thing. Nor was his cure unique: other congenital disorders have also yielded to hypnotism. And we must recognize that the unconscious can manipulate the fundamental processes of life.

In addition to warts, cancer, arthritis, and congenital disorders, hypnotism has been successfully used to treat nearly all human ills, though seldom with the dramatic outcome that bewildered Jung. But it is not yet the great cure-all for human woes. Like placebos, it doesn't always work. It may fail to heal even good subjects, those able to enter a deep trance, and it may occasionally bring about cures in relatively poor subjects. If hypnosis is fickle, however, that is what we have come to expect of unconscious processes.

Hypnotism may be an uncertain therapy, but some obstacles to its medical use were reduced by the finding that many patients with medical emergencies are already in a trance state that physicians may use to their advantage. 'In emergency situations of exsanguinating hemorrhage we have, in hypnosis,' said David Cheek, 'a tool which can be of lifesaving value. It is easy to hypnotize such subjects for they are often in hypnosis already.' Cheek successfully stopped massive bleeding in childbirth with only a few suggestions 'under the assumption that the patient was already in trance.'

L.S. Wolfe exploited these trances for surgical purposes. He reported seeing a seventeen-year-old-boy on the operating table awaiting an emergency appendectomy. Noticing that the boy was 'obviously in a spontaneous trance,' Wolfe shook a few drops of alcohol in a small beaker of soap and rubbed it on the boy's arm saying, 'I want you to notice that within fifteen seconds this medicine will make your entire body completely numb.' That was the one and only suggestion made and he was not given any premedication. The boy remained alert and chatted while his inflamed appendix was removed.

Wolfe used direct verbal suggestion together with a placebo. But sometimes the peculiarities of the placebo may carry the decisive part of the suggestion. Harold Johnson

reported a method used by Dr Yang, a Honolulu physician, to treat people who thought they were victims of a *kahuna*, a Hawaiian sorcerer. Because that 'illness' is often fatal, Yang would pessimistically inform the terrified patient that he would probably die, but there was a powerful remedy that sometimes worked and was at least worth trying. Yang then gave him three methylene blue tablets and said that *if* (and he wasn't hopeful) his urine turned blue, the spell was broken. The traumatized and presumably hypnoidal patient's urine naturally turned blue, and he was saved.

Of course suggestion need not be either oral or direct, and a placebo can be any chance object. Barker reported that during the Second World War a Western physician accompanied another physician, Captain Chaudhuri, who was wise in the ways of native medicine. On a forest path in Burma they came upon a cluster of people about a man lying on the ground. He had been stung by a scorpion; his leg was swollen and he seemed in great pain. Captain Chaudhuri took the stub of a red crayon from his pocket and drew a circle round the man's wound, then stepped back to light a cigarette. Before he finished smoking, the injured man was up; he seemed free of pain and the swelling had visibly diminished. Not a word had been spoken.

Although sometimes helpful to the physician, the heightened suggestibility of people undergoing a trauma occasionally has unpleasant consequences. Platonov told of a young man who said he suffered impotence because at age thirteen he fell off a horse and injured his testicles. The patient recalled that his grandmother cried, while he was injured, that he would be impotent – a direct verbal suggestion. At the age of eighteen he was having sexual relations when he was startled by a loud noise in an adjoining room. His erection wilted and couldn't be regained. The idea of impotence of course passed through his mind and he then remembered his grandmother's warning. His next attempt at sexual relations was a disconcerting failure that persuaded him his grandmother was right. Despite a lusty nature, he remained impotent until, six years later, his problem was solved in a few hypnotic sessions.

Sometimes completely silly remarks become powerful sug-

gestions. Platonov related the bizarre problem of a young woman who complained of an overwhelming desire to bark like a dog. Her barking was disastrous for her social life – and no doubt intimidated cats – but the urge to bark became even stronger when she was alone. Her strange compulsion emerged a month before, after she was frightened by a dog that had bitten her. During her fright she recalled hearing that 'those who are bitten by a dog begin to bark.' In her traumatized condition that foolish saying became a direct suggestion that forced her to bark almost constantly – until the odd compulsion was eliminated in a few hypnotic sessions.

Almost any remark may become a suggestion – except those originating with the person himself. The unconscious appears much more resistant to suggestions made by its own conscious pole, which is why self-hypnotism and autosuggestion are seldom able to achieve the results of ordinary hypnotism. Wherever the words came from, however, these incidents show that a few of them lying about in the unconscious may surface years later during a time of stress, of heightened suggestibility, to assume the form of direct suggestions. That should alert physicians, nurses, and others who deal with people in reduced states of consciousness to be careful of what they say. But we should all be cautious of our tongues and recognize that, at the right time, a word can kill or have other long-range effects as astonishing as they are unpleasant.

Of course some people know that and choose evil words deliberately. R.J.W. Burrell of Capetown told a medical audience in Detroit that he saw an old woman cast a spell on a man. '"You will die before sunset," she said. And he did.' An autopsy disclosed no cause of death. Probably the witch's threat was a sufficient trauma for her Bantu victim who then died just as people die of snakebites lacking the venom to kill – assuming, that is, that no spell was cast.

William Sargant, a psychiatrist who made an extensive study of hypnoidal states, noted the variety of experiences that may increase suggestibility, such as fright, anger, frenzy, excitement, sexual orgasm, sleeplessness, confusion and hunger – many of which are deliberately used for trance induction. He said that in a hypnoidal state a person's 'previous intellectual

training and habits of rational thought have no influence in preventing the acceptance of ideas which he would normally find repellent or even patently nonsensical. . .' After irrational beliefs have been accepted, he added, they may then 'live cheek by jowl with rational and critical thinking about other topics.'

Sargant investigated religious groups round the world that exploit these techniques to gather docile converts, from congregations wracked by the Holy Ghost to those possessed by Voodoo gods. He observed that one may be brainwashed even with foreknowledge of what is taking place. 'I myself was sometimes affected by the techniques I was observing,' he said, 'even though I was on my guard against them. A knowledge of the mechanism at work may be no safeguard once emotion is aroused and the brain begins to function abnormally.' If a scientifc specialist in brainwashing is vulnerable, what of the average person?

At lively fundamentalist religious meetings, those in which the services become increasingly frenetic with people suffering convulsions and 'speaking in tongues,' Sargant noted, the worshipers enter hypnotic states that persist for some time afterwards. And the flock's lingering suggestibility following the services has not gone unnoticed. Men in need of a casual orgasm solicited women as they left these meetings and found them agreeable to any adventure. But if the same women were approached later by their former partners for another tumble, the women indignantly denied any interest. As well they might – their previous coupling, after all, was a form of rape.

Whatever doubts may have remained about the power of cults to ensnare minds (through suggestion) must be laid to rest with the nine hundred victims of Jonestown's mass suicide – who drank poison prepared by an accredited physician. No other explanation offers itself for their immolation of themselves and their children en masse simply because their paranoid leader was irked by a politician. That hecatomb is a monument to a total slavery that may explain more of history than we care to think about.

J.B.S. Haldane scarcely understated the situation when he said:

> Anyone who has seen even a single example of the power of hypnosis and suggestion must realize that the face of the world and the possibilities of existence will be totally altered when we can control their effects and standardize their application.

We have seen that suggestibility may vary with circumstances. It may, among other things, be enhanced by injury, religious frenzy, sexual excitement, and anesthesia. In fact, a few whiffs of chloroform, far less than can induce sleep, may bring about a heightened state of suggestibility. Indeed, sleep itself may enhance suggestibility.

Some part of the mind remains alert to the external world while consciousness roams in dreams, and a mother may hear her infant's slightest whimper even though she sleeps undisturbed as airliners thunder overhead. Since what every mother knows cannot be accorded scientific recognition, however, Ian Oswald of the University of Edinburgh gave this common knowledge its cachet of experiment. He played a lengthy tape recording of fifty-six names called out one after the other in various orders to sleeping subjects. He discovered that the slow brain waves of sleep were most disturbed by the subject's own name or that of someone important to him. A male subject on 'hearing' his sweetheart's name, although he slept soundly, would exhibit violent oscillations in his brain waves and a huge change in his skin's electrical resistance.

If a sleeping subject can 'hear' names, he may also hear suggestions. In one sleep laboratory experimenters whispered suggestions to sleeping subjects, such as 'Whenever you hear the word "blanket," you will feel cold until you pull up the blanket' or 'Whenever you hear the word "itch," your nose will itch until you scratch it.' Unlike the lively response to certain names, an EEG indicated no change in the brain waves of quiet sleep as the suggestions were made, and the subjects didn't recall them on awakening. Nevertheless, on the following night they responded to them, and one continued to respond five months later. That was, however, not a new discovery. Coué recommended long ago that parents use

the technique to improve their children's health and conduct.

Obviously if a sleeping subject can act on suggestions, he is also open to those intended to increase suggestibility itself; that is, to induce a hypnotic state. Estabrooks said that it is easy to approach sleeping subjects and turn them into somnambulists and ventured that about 20 percent were amenable to the procedure. Bernheim earlier commented that it could be done and added that people who talk in their sleep and answer questions are particularly susceptible. Hypnoidal states, then, far from being exotic, are natural and commonplace.

That should overturn the popular myth that a person cannot be hypnotized without his knowledge. And we saw, moreover, that people are entranced without their knowledge when traumatized or in a religious frenzy. Hypnosis may also steal over those who are merely witnessing a hypnotic induction, or it may occur when the effects of suggestion are only being demonstrated. Simply making suggestions to test a person's susceptibility to hypnosis may sometimes result in a deep trance the operator had no intention of inducing and the subject did not in the least expect.

Another erroneous idea is that people can't be hypnotized against their will. Clearly if people are hypnotized without their knowledge, they may be hypnotized whether they 'will' it or not. But can people who know what is being attempted and actively resist be hypnotized? Yes, and hypnotists have several dodges to accomplish it, including deception. Simeon Edmunds told of a subject hypnotized against her will by the hypnotist's telling her, untruthfully, that her tea had been hocused with a powerful hypnotic drug and that she was becoming aware of its influence. After five minutes she was in a deep trance.

Wells noted that although it is easier to hypnotize a cooperative subject, it is also possible to hypnotize a person against his will and while he actively resists:

> I have insisted that they [his subjects] should resist each hypnotic command to the full extent of their ability, since I am not satisfied with the success of hypnosis except as the subject becomes helpless to resist.

Wells added that scoffers and skeptics are often the best subjects; for their belief that they are insusceptible is no deterrent and may even be an advantage.

If people can be hypnotized without their knowledge and even against their will, another popular notion is also in jeopardy – that a hypnotized person will not do anything contrary to his fundamental wishes or ethics. That is refuted by people who die of suggestion; obviously few of them consciously want to die. Besides, our knowledge of psychosomatic reactions and other devilries brewed in the unconscious should banish any idea that it is governed by the Golden Rule. These observations of course raise the possibility of using hypnotism for criminal purposes, a possibility that has been largely ignored by science – but not, as we now know, by intelligence agencies. Estabrooks said the FBI knows all there is to be known about criminal hypnotism, and the CIA has recently been found equally up to date.

Liégeois caused hypnotized subjects to commit a variety of 'crimes' in an experiment by simply telling them to – without resort to subterfuge. A subject would, for example, fire a pistol at her mother on Liégeois's command. He estimated that about 4 percent of the population would obey overtly criminal suggestions. And Wells said that he 'found it less difficult to bring about criminal acts in unwilling subjects through hypnotic methods than to bring about hallucinations and anesthesia sufficient for surgical purposes in willing subjects. . .' He remarked that 'any hypnotist who cannot succeed in such experiments is simply admitting that he has not yet learned an adequate hypnotic technique.' Wells emphasized that 'the whole point as to the essential nature of hypnosis is missed unless the fact is recognized that even so extreme a phenomenon as real crime against the will of the fully forewarned subject can be produced by means of it.' He observed that a thousand failures because of poor technique or poor subjects do not discount the efficacy of adequate techniques used on suitable subjects. The criminal hypnotist, moreover, could prevent conflict in his subjects by conjuring up suitable hallucinations and delusions. He could also produce amnesia in the subject for everything said to him and for

the fact that he had ever been hypnotized. And he could conclude with a posthypnotic inhibition against anyone else's hypnotizing him.

It might be argued that a subject in an experimental hypnotic crime recognizes it is an experiment and that a genuine crime would not be permitted. Lingering doubts could be swept away only by showing that genuine crimes have been committed by means of hypnotism, – something obviously impossible in a scientific setting. Straightforward murder ill suits the academic temper. But if hypnotism has been used to commit real crimes, at least by a hypnotist who isn't a fool, they will be very difficult to detect. Evidence of genuine crimes, then, will not be common – even if such crimes are. Yet a few have been unearthed. And a number, mostly sexual, were reported by nineteenth-century investigators. Moll, for example, cited several; among them the case of Lévy, a randy dentist of Rouen, who was sentenced to prison for sexually assaulting a magnetized girl while she occupied his dental chair. The crime is curious because the girl's mother was present but didn't observe anything unusual taking place.

Instances of criminal hypnotism have also been reported in our own time. In Copenhagen a man strolled into a bank in 1951, took a pistol from his briefcase and, scorning stealth, fired a warning shot at the ceiling. After attracting respectful attention, he threw the briefcase on the counter and demanded the cashier fill it with money. The cashier, Kaj Moller, hesitated and the robber promptly killed him. To show he wasn't fooling, he also shot the manager. But the Viking spirit apparently lives on in Danish bankers; another employee did succeed in sounding an alarm and the robber fled, threatening to kill anyone who got in his way. No one did.

But the police caught him a short time later as he was about to enter a building. Inside, they found a drunken old woman who told them the man they had arrested, Pelle Hardrup, was a friend of her nephew, Björn Nielsen, who was away in the country with a nightclub dancer. The police learned that Nielsen was a habitual criminal who had served a term in prison for robbery – where he met Hardrup. Although Hardrup had been confined for political reasons and not for a

traditional felony, he nevertheless insisted that his friend had nothing to do with the robbery. And after the police had Hardrup in custody, they found he had robbed another bank a year before. A confirmed bank robber? The police were still not satisfied.

Hardrup's behavior after his arrest was so patently abnormal that he was examined by a police psychiatrist. Hardrup, who suffered hallucinations and paranoid delusions, said he had committed the crime at the command of a 'good angel' or 'guardian spirit' for the benefit of a secret and illegal political organization – a motive that would have been consistent with his character. But apart from his delusions, he revealed little except that he had no accomplice. The case nevertheless had other eccentricities that led Geert Jorgensen, the psychiatrist, to suspect Hardrup's psychosis was not entirely natural. His suspicions gained credibility when an anonymous informant called the police to report that he had been in prison with Hardrup and Nielsen. He said Nielsen was a hypnotist who had gained complete control of Hardrup and added that although Hardrup may have held the gun, he was undoubtedly under Nielsen's control.

Jorgensen had already noticed Hardrup's steadfast denials that Nielsen was implicated in the robbery seemed wooden and repetitious. And when a specialist, Max Schmidt, asked Hardrup what he knew of hypnosis and whether he had ever been hypnotized, Hardrup became disturbed and replied that his 'good angel' would not permit him to answer. His 'good angel' told him when to remember.

Paul Reiter, a leading Danish psychiatrist, consultant to the Ministry of Justice and an authority on hypnotism, was asked for assistance. He found Hardrup impossible to hypnotize for the first few months and suspected that posthypnotic suggestions prevented it. Finally, almost a year after the robbery, Reiter succeeded in overcoming the barrier and could entrance Hardrup with a word. Now it was possible to uncover the details of what had happened. And he discovered that both crimes as well as Hardrup's psychosis were hypnotically induced by Nielsen, who was later found guilty and sentenced to life in prison.

Crimes committed by means of hypnotism may be rare, but

that is speculation. As the case just cited indicates, hypnotism may permit such nearly perfect crimes that only luck will expose them. Clearly, the authorities would like to pretend that it is too improbable to be of concern. But over nine hundred people at Jonestown, Guiana, offered the ultimate testimony to the power of brainwashing, a feeble cousin of hypnotism, and multitudes of others, similarly conditioned, wander the world's streets or skulk in dark corners – awaiting orders.

Some of the phenomena noted in the days of the magnetizers are seldom seen today. But as Weitzenhoffer remarked, much of the recent experimental work in hypnosis has not touched the depths of trance explored by earlier investigators and consequently cannot speak with authority about the properties of deep trance states. That must be kept in mind when evaluating what present-day 'experts' say hypnosis can and cannot accomplish. Many of the modern investigators have been graduate students making a few observations and then dropping the study, whereas investigators such as Bramwell devoted many years to it and dealt personally with hundreds of subjects. Hull's book on hypnosis is an example: often cited as a model of experimental procedure, it is based largely on the work of amateur hypnotists, students with little experience, and refers mainly to light trances induced by a few minutes with the experimenter or even with a recording. That contrasts sharply with Charles Richet's experiments with Léonie. Richet would spend many hours with his subject to get the results that interested him; he mentioned two and a half months of hypnotizing before beginning one of his experiments – and Léonie was an exceptional subject to begin with. That dogged thoroughness could be expected to yield more than a few minutes with a recording.

Hypnotists as well as subjects, moreover, are individuals whose talents may vary widely, and the results obtained by a powerful hypnotist are likely to prove beyond the mediocre one. Even powerful hypnotists, it must be added, may not always get the same results from one occasion to the next and their abilities may also decline with time. Richet said that early in his career he could quite easily entrance even insensi-

tive people, but that in his later life he could scarcely ever succeed in entrancing anyone, despite his greater experience and knowledge of technique. Drs Maingot and Magnan, who were once powerful magnetizers, told Richet that, though they were not old men, they were surprised at their inability to induce deep hypnosis. Perhaps long experience with hypnotism simply eroded their interest and enthusiasm and, as with medicines and placebos, the decline effect set in.

We must also entertain another strange possibility when we compare the phenomena obtained during the early days with those of today, and one we have met before. In 1865, when Elliotson was nearing eighty, he sadly reminisced that neither he nor others were securing the striking results once so commonplace. If his powers were not just casualties of the decline effect, it may be, as Elliotson supposed, that special periods of time favor magnetic phenomena, and that one such period was ending. If so, their passing is not unprecedented: perhaps some of the more curious features of magnetism departed with Charcot's *grande hystérie*.

It may also be that the magnetizers' procedures resulted in a trance qualitatively different from the one induced by modern hypnotism. Certainly the magnetizers and hypnotists held very dissimilar views. And contrary to the prevailing ideas of today, the magnetizers thought the operator's belief in his own powers and a strong will were the requisites for success and the subjects' beliefs of no particular importance. Perhaps we have again encountered the ubiquitous Pygmalion effect, which seems to intrude into all that human beings do. And hypnosis tends to become what hypnotists think it is.

One of the more telling demonstrations of the Pygmalion effect in hypnosis is to be found in Braid's book *Neuropnology*, which reported experiments he conducted in 'phrenomagnetism,' a combination of magnetism and phrenology devised by J. Stanley Grimes. Phrenology held that human faculties and character are localized in the brain and cause bumps on the head. And in phrenomagnetism the operator could stimulate any specific faculty by merely pressing its associated bump on an entranced subject's head. That is, if the operator touched the bump of 'amativeness,' his subject is likely to kiss him (at least). And Grimes said that by pressing

a bump he assumed to be responsible for the trance state he could evoke magnetic trances directly. Grimes was probably successful at that, even though there are no phrenological bumps.

Braid took great care in selecting for his experiments subjects who knew little or nothing of phrenology. He also punctiliously avoided giving the hypnotized subjects any hint of the particular faculty he stimulated. Nonetheless, his subjects usually responded immediately and in the way Braid expected. When he touched a young woman's bump of friendship, she clasped him in her arms. And when he touched the bump of acquisitiveness, she stole everything in sight. On Braid's touching her bump of destructiveness, which he remarked was largely developed, she 'struck her father such a blow on the chest as nearly laid him on the floor.' Because phrenology proved to have no physical basis, however, his subjects' behavior was a lucid display of the Pygmalion effect. But phrenology passed, and Braid appears to have been embarrassed by these successful experiments: he didn't mention them in later years.

Although Braid was almost certainly unaware of it, with phrenomagnetism – as we shall see in the following pages – he crossed the line into genuine sorcery.

Chapter 5

The unconscious sense

A sorcerer strives to communicate with the same mental giant or controller in the unconscious as a hypnotist, and for similar reasons, but he does so in a different way and through a different medium. In this chapter we shall explore the nature of that medium and the sorcerer's communication channel, beginning with an inspection of some of the spontaneous messages that occasionally flash through it – the first contributed by a British diplomat.

'Oh I wish papa only knew that Robert is ill.' Sir John Drummond Hay, a minister to Morocco, was awakened one night in 1879 by hearing his daughter-in-law speak those words. A few minutes later he heard her repeat them and recorded the experience in his diary. Sir John thought it worth recording because she was three hundred miles away at the time. His son, whom he thought to be in excellent health, had fallen ill with typhoid fever and his anxious daughter-in-law had spoken the identical words on the night he had awakened hearing them.

Ralph Banay, an editor of a psychiatric journal, was awakened with a start from a dream in which he saw his mother gasping for air and suffocating. He related:

> I hardly had time to clear my mind, when the telephone rang and I was informed that she had suffered a heart attack. There had been no anxiety about her health, no recent discussion with anyone about her, no relation of similar stories, and I was in a completely sterile state of mind when this occurred.

His mother had been independent, active, and in good health; he had no objective reason for concern.

Hans Berger, as an astronomy student at the University of Berlin, was riding near Würzburg in 1893 when he tumbled from his horse into the path of a cannon drawn by six horses. He expected a swift death under its wheels, but the horses stopped just in time for him to suffer no more than a fright. Later that day he received a telegram from his father asking about his well-being – the only time in his life he had received such a query. Berger later found that his eldest sister, who was particularly close to him, was responsible for the telegram. She told their parents she knew without doubt that Hans had met with an accident. The experience taught Berger that the greatest mysteries lie not in the stars but in the mind, and he abandoned astronomy for psychiatry. In 1924 he was the first to successfully record brain waves, creating in the EEG a tool that would ultimately prove useful in probing events of the kind he had shared with his sister on that day near Würzburg.

Mark Twain was honored with a reception in Montreal in the early afternoon. Among the many guests was Mrs R., who had been a good friend of his long before in Carson City, Nevada, but he had neither seen nor heard of her for twenty years. He had not been thinking about her: 'To me she had long ago ceased to exist,' he said, 'and had disappeared from my consciousness.'

Twain had not the slightest doubt that it was she; he spotted her several times – the last time at a distance of twenty-five feet. He was puzzled and disappointed when she didn't come to him. But the riddle was solved when he arrived at the lecture hall where he was to speak that evening and was told that someone wanted to meet him. It was Mrs R., dressed exactly as he had seen her. 'I knew you the moment you appeared at the reception this afternoon,' Twain said on seeing her. With a surprised look she replied: 'But I was not at the reception. I have just arrived from Quebec, and have not been in town an hour.' 'Those are the facts,' Twain concluded.

She was not at the reception at all, or anywhere near it; but I saw her there nevertheless, and most clearly and

> unmistakably. To that I could make oath . . . I was not thinking of her at the time; had not thought of her for years. But she had been thinking of me, no doubt; did her thoughts flit through leagues of air to me, and bring with it that clear and pleasant vision of herself: I think so.

Telepathic incidents of these kinds have been reported in abundance by all peoples in all ages.* They whisper to the solitary savage, send searching tendrils into the dreams of scientists, or pierce a mother's heart. Sometimes trifling, sometimes as memorable as first love, they are rare events in the lives of most people and, as the city-dweller's first unblemished view of the night sky, usually arouse a sense of wonder. And these meteoric flashes from beyond our workaday existence merit wonder, but perhaps no more so than the other marvels emerging from the same space – perception, love, science, poetry, music, psychosomatic illness, miracle cures, laughter.

And they add the last data to the reasoning that leads to undoubted sorcery.

Telepathy has been recognized since ancient times. The Greeks of course proposed theories for it, but its fundamental mechanisms, as those of mind generally, continue to elude us. Yet we may hope to learn as much about it as we have learned about any other aspect of the mind. If everything in the universe is connected, as modern physical theory insists, telepathy is no alien intruder in the world disclosed by physics. Indeed, physicists seem to have taken a particular interest in telepathy – trying, among other traps, to catch it with quantum theory – perhaps because, as Einstein said, 'This has probably more relation to physics than to psychology.'

Nobel Laureate Brian Josephson of Cambridge, for example, is one of many eminent physicists interested in the physics of telepathy. He thinks it is to be found in Bell's theorem, which he regards as the most important recent

*A number of surveys have found that approximately three out of five people will report having had at least one telepathic or ESP experience.

advance in physics. Bell's theorem shows, in impeccable mathematics, that two systems that have been together will retain some kind of 'physical' connection after they are apart which allows immediate communication regardless of the distance between them.

To separate theory from evidence, however, 'psi' has been adopted as a theoretically neutral word to describe telepathy and allied phenomena, and it will be used here occasionally even though our chief concern is with telepathy. The term is useful because the phenomena it embraces are difficult and sometimes impossible to untangle in practice; they are frequently found in association and appear to be fostered by similar conditions. Because no theoretically neutral words are available for 'transmit' and 'receive,' on the other hand, we must be aware when we use these words in connection with telepathy, as we must for convenience, that their use does not imply any actual transmission occurs – as it does, for example, in television.

Although Soviet-bloc scientists generally still espouse the theoretical position that telepathy is carried by some type of wave, probably electromagnetic, most Western scientists, with a few exceptions, do not. Michael Persinger at Laurentian University is one of the exceptions. He hypothesizes that extremely low frequency Shumann waves may be the carrier for psi information and cites supporting evidence. Those who are more comfortable with nineteenth-century materialism, then, are still marginally at liberty to regard telepathy as some sort of electromagnetic process.

Bell's theorem, quantum interconnectedness, Shumann waves. . . Whatever it was that linked Sir John to his daughter-in-law, he did not hear her voice through the vibrations of his eardrums; nor did Twain see his friend through the stimulation of his retina. Because telepathy does not appear to act on a special organ of its own, their perceptions were essentially synesthetic; that is, they originated with a telepathic stimulus in much the same way as the visual hallucinations of playing cards originated with the sense of touch. We saw that in synesthesia raw sensory data could be perceived by senses other than the ones they ordinarily stimulate. And given information of any kind, including telepathic, the un-

conscious can readily create the appropriate hallucinations for any or all the senses.

A scientific approach to an investigation of psychical events, such as those introducing this chapter, was inaugurated in the seventeenth century by Joseph Glanvill, the spokesman of the newly formed Royal Society. Early investigators approached psychical phenomena as naturalists, trying to classify individual events and searching for regularities that implied lawful behavior. Nor has the laboratory wholly eclipsed that method. In 1968 and 1970 Ian Stevenson published his analyses of spontaneous cases in which the person receiving the telepathic information (the 'percipient') knew that something was wrong with a particular person (the 'agent'), or at a particular place, but was unaware of the details. His findings showed that when the agent was thinking about or calling for the percipient during his trouble, the percipient was more likely to take some specific action, such as sending a telegram or changing travel plans to go to the agent. He also found that nearly a third of the incidents occurring in a family took place between parents and children, about 15 percent between siblings, and slightly less between spouses; members of the extended family were involved at a decreasing rate. Stevenson does emphasize, however, that for telepathy the ties of emotion are more important than those of biology.

Stevenson's statistical findings add only a little weight to what people have always known and have even expressed in literature. When Moll Flanders's one true love left her, she fell into a violent fit of weeping and called, 'O Jemmy! come back, come back.' Although he was many miles away at the time, he returned and said, 'If ever I heard your voice in my life, I heard you call me aloud.' And he repeated the words she had spoken. For Moll and Jemmy it was a precious experience that betokened the special bond they shared. Such was the character of telepathy as our seventeenth-century ancestors knew it, and as we know it today.

Some sciences are perhaps forever tied to an examination of spontaneous events. Certainly astronomy is one that can do little to control the objects of its study or perform experi-

ments in the usual sense. Yet despite the achievements of a few disciplines necessarily resigned to observing whatever nature chooses to offer, those imbued with the scientific spirit are as obliged to experiment as those afflicted with scabies are obliged to scratch.

But is it possible to capture psi in the laboratory? Scientists at the close of the last century resolved to find out and spread the toils of experiment to catch it. A good deal of experimentation, often casual, was conducted in the early days of modern psychical research. Even Thomas A. Edison, alert to all the events of his day, performed a few modest but successful experiments in telepathy. Although most early experiments were qualitative and hence not altogether respectable by the standards of the computer age, they still revealed many of the attributes of telepathy and, more important, proved it was not beyond experimentation.

And experimentation would permit first-hand experience of telepathy for those who had not been touched by it spontaneously. In the 1880s Malcolm Guthrie and James Berchall carried out a series of 246 experiments in the telepathic transmission of drawings to percipients who seemed to have a gift for it. Sir Oliver Lodge, a noted physicist, later took complete control of the experiments. Imposing his own conditions, Lodge became convinced that one 'acquires a belief in the phenomenon observed quite comparable to that induced by the repetition of ordinary physical experiments.'

Experiments continued to use pictures or other complex targets. In 1930, Upton Sinclair published *Mental Radio*, which described more than a hundred picture-drawing experiments he and others conducted with his wife, Mary Craig-Sinclair, a sensitive percipient. Following the experiments with interest, Albert Einstein witnessed several and wrote a foreword to Sinclair's book. An agent, often Upton, would try to send Mary a simple drawing, sometimes over long distances. She would try to visualize the drawing and then attempt to reproduce and describe it. In 290 experiments there were 23 percent successes, 53 percent partial successes, and 24 percent failures. The partial successes often revealed more of the telepathic process than the clear-cut hits. Once Upton drew a volcano belching black smoke. She drew an

excellent reproduction of it but could not decide what it was and finally described it as a black beetle. Her telepathic impression was clearly correct if judged from the drawing, but a failure if judged from the verbal response. Although investigations such as Sinclair's provided worthwhile information, the use of pictures was largely discarded until recent times in favor of experimental designs having greater statistical simplicity.

There were many direct hits in these experiments, though the percipients' responses to the target more often contained distortions in which we can spot the intrusion of primary process thinking. Because telepathic information appears first in the unconscious and can only manifest as a kind of synesthetic hallucination, it isn't surprising that it is often 'interpreted' or distorted before being offered to consciousness. Warcollier discovered the distortions are not random, but fall into distinct categories. In the telepathic transmission of geometrical figures, the components of the figure may be disjointed and seemingly received independently of one another. Or the figure may not be consciously perceived when sent, but may lie in the unconscious for a few minutes or a few days before it is reassembled and communicated to consciousness. The separate elements of the target might be amalgamated into a single whole, or a vague whole might be received with little detail. Occasionally, the target image and its background are merged into a single whole as though both were equally important. Telepathy, then, follows laws, and they resemble those governing subliminal perception.

Jan Ehrenwald said the distortions characteristic of pictures received by telepathy are almost indistinguishable from those of pictures drawn by brain-damaged patients. He remarked that when he showed drawings of brain-damaged patients to an audience of graduate students, they mistook them for unconvincing samples of telepathic drawing tests from the Sinclair or Warcollier series. That and other evidence led Ehrenwald to hypothesize the right hemisphere as the part of the brain concerned with receiving and processing incoming telepathic messages.

Qualitative experiments had shown that telepathy could be studied in an experimental setting and indicated something of

the way in which it manifested. Yet science was restless. One may know it to be highly improbable that, say, Mary Sinclair would duplicate the drawing of a volcano by coincidence (whatever that is), but how improbable is improbable? Science dotes on numbers and is not interested in knowing merely that a ball rolls down an inclined plane – it demands to know how fast in feet per second. How impossible is improbable? Science wants a number.

Charles Richet, Nobel-prize-winning physiologist and early investigator of telepathy, suggested in 1874 that the calculus of probability might be used to evaluate the results of experimental telepathy; that is, to calculate the odds against an experimental result's having occurred by chance. Several fledgling experiments received that treatment, but the necessary statistical techniques were not to reach maturity for decades.

As statistical techniques became available, however, experimental designs were contrived to fit them. One ingenious experiment and harbinger of things to come was performed in 1920 at Gronigen University in the Netherlands. Professor Heymans conceived the experiment when he found that a student, A. Van Dam, was a sensitive percipient. The experiment used two rooms of the psychological laboratory, one above the other. The experimenters ran their tests from the upper room while their subject was in the lower room. A window was cut in the intervening floor, and acoustically sealed, to permit the experimenters to observe Van Dam in the room below. Blindfolded, Van Dam sat in front of a screen concealed by a curtain. Only his hand extended through the curtain to a kind of checkerboard with letter and number squares. He was to move his hand over that visually isolated board and stop at the square, randomly determined by a shuffled pack of cards, on which the experimenters were concentrating in the room above. Van Dam was also connected to a physiological monitoring device that would indicate when he was in the passive state Heymans thought facilitated telepathy.

Van Dam chose the correct square 60 out of 180 times. And because the odds for each success were exactly 1 in 48, the

results were computed to have the mind-boggling odds of 79,000,000,000,000,000,000 to 1 against their having occurred by chance. Although the experiment was unusually innovative, it also foreshadowed an absurd trend in parapsychology. Only in this field would scientists bother to statistically evaluate results so obvious that the odds against their chance occurrence are patently astronomical. Today it is often nothing more than a bootless ritual required by fashion.

Earlier experimenters, such as Heymans, would run a few experiments in telepathy and then return to their usual pursuits. J.B. Rhine, on the other hand, determined to devote his scientific career to psi, a commitment that enabled him to adopt the long-range strategies that would lay the foundations of modern parapsychology. His was the first sustained program to study telepathy in the laboratory in which the methods of the exact sciences were used to organize experiments and check their results. Rhine pioneered the pack of twenty-five cards containing five sets of five simple figures – star, cross, wavy lines, circle, and square – the so-called Zener cards, that his students worked with for endless hours, year after year, in experiments that required the long-suffering percipients to guess what Zener figure an agent was looking at. Though psi may on rare occasions break through with great clarity, in ordinary life it is a dim flicker resembling a weak television signal that fades in and out unpredictably. The 'signal' may be received on one guess and not on another. Researchers attempt to overcome this problem in experimental work by finding good subjects, those with keen 'eyes,' and making many guesses. Rhine did both.

His monograph, published in 1934, was a milestone. It described the experimental work, running into thousands of trials, that he had undertaken with his students. And the approach he established was to guide parapsychology for many years. The results of these large-scale statistical studies were persuasive, but others, Albert Einstein among them, thought experiments such as Sinclair's were more informative.

Although Rhine's methodology was fruitful, the disadvantages of simple quantitative experiments began to reveal themselves as time passed. To achieve numerical signifi-

cance, the investigators, agents, and percipients need boundless patience. In the early days of quantitative work, especially with Zener cards, experiments fell to a nadir of monotony. Scientists did not sufficiently appreciate that human beings, even sensitive percipients, could not maintain a sparkling performance at the task of endlessly concentrating on five elementary figures. Even good subjects began to suffer the effects of tedium and their scores fell.

Richet and others noted long ago that a subject's performance falls off as he continues with repetitive telepathic experiments – the familiar decline effect. But with Rhine's work it became one of the most salient, regular features of the data. Researchers found that if some novelty was introduced into the target materials, however, their subjects' average scores would rise and then – as it eroded into dull familiarity – fall again. The decline effect is just the tail end of 'beginner's luck' (beginnings are usually novel), which has been recognized by gamblers since time began. Parapsychologists, who do not countenance luck, call it the 'first-time effect' and have experimentally verified its occurrence. But in recent years parapsychologists have attempted to maintain novelty and interest throughout the course of their work, as we shall see, and think they have found ways to stave off the decline effect or even reverse it, allowing their subjects to improve with practice.

Novelty, of course, is only one of a number of influences affecting telepathy, some of which are or should be obvious. Stuart, like Stevenson, found that percipients were more successful when their agents were relatives. Casper and others also noted a significant difference in scores when percipients worked with agents they liked most and those they liked least. And it even had to be shown that subjects respond to kindness. Honorton reported a study in which it was found that whether the experimenters smiled and greeted their subjects in a cold or friendly manner had a noticable effect on their scores.

As the spontaneous cases suggest, we seldom exchange telepathic messages with strangers. In a review of the literature, Karlis Osis found that psi depends on some sort of personal connection, which may be formed as a result of

direct acquaintance, correspondence, or even a telephone conversation. Merely a secondhand acquaintance, knowing someone in common, could sometimes provide a link.

John Hasted and David Bohm, physicists who have conducted their own research in psi, wrote:

> We have come to realize that in certain ways the traditional ideal of the completely impersonal approach of the natural sciences to experimentation will not be adequate in this domain. Rather there is a personal aspect that has to be taken into account. . .

They really did no more than restate the truism that people are not machines, insensitive to their treatment, their ambiance, and the attitudes of those about them. Scarcely a notable revelation, but it's remarkable how often such an evident consideration has been ignored in 'scientific' studies of human beings.

Gertrude Schmeidler at the City College of New York discovered another important influence on experimental telepathy in 1946 that she wryly termed the 'sheep-goat effect.' Investigators have since found repeatedly that subjects with a favorable attitude towards telepathy, 'sheep,' tend to score far better than those with an unfavorable attitude, 'goats.' The goats, in fact, may score as significantly *below* the level expected by chance as the sheep score above it. That so-called psi-missing does not represent a failure in telepathic communication, as some people seem to think, because psi-missers perform as consistently as those who score hits.

Nor is that oddity confined to telepathy experiments – we have encountered it before in medical research. In the experiment in which two physicians dispensed placebos to study their influence on gastric acidity, for example, we saw that whereas one of the physicians consistently obtained a marked increase in his subjects' gastric secretions, the other consistently obtained an even greater decrease. Placebo-missing?

When the sheep-goat effect is applied to experimenters instead of their subjects, we have another version of the Pygmalion effect. The Pygmalion effect, casting its spell over science generally, appears to become more robust as the subject investigated becomes more complex. And we should

expect that it would surge to prominence in parapsychological experiments, which deal with the subtlest of mental phenomena. If the Pygmalion effect can exert predominance over stomach secretions, what must it do to those capricious and fleeting sparks from the unconscious? Substantial evidence has now accumulated indicating that an experimenter may have more influence on telepathy tests than his subjects. How much influence? Rhea White concluded that it could be total.

Because of the importance of attitude, one conduit for the sheep-goat-Pygmalion effect in telepathy may be emotionality. Certain spontaneous telepathic events are often instinct with powerful emotions arising from a crisis in an agent's life. And the mental qualities enhancing experimental telepathy, such as interest and motivation, clearly touch the emotions. Is emotion a key? Sigmund Freud thought it was. After conducting telepathy experiments with his friends, he remarked, 'Strongly emotionally colored recollections can be successfully transferred without much difficulty.'

An experiment by Fisk and West illustrates the role of emotion. Although Zener cards are about as stimulating as last year's calendar, Fisk and West had one subject who was excited by at least two of them. The subject, a young man who had just taken up homosexual relations, was deeply preoccupied with sex. They noticed that in his ESP trials he called the cross and circle correctly more often than the other three symbols. The subject explained that the cross and circle were emotionally arousing because they reminded him of the male and female genital organs respectively. If such sterile symbols were titillating, the scientists speculated, what would overtly sexual targets produce? They followed up by substituting erotic pictures for the cross and circle in the Zener pack – and his scores promptly soared above chance by 1,400 to 1. But when these were broken down into the scores obtained on the five separate pictures, they found his high scores occurred on only the erotic pictures; the three neutral ones evoked no ESP at all. His scores on the male picture, not surprisingly, were the highest, with odds of more than 100,000 to 1 against their chance occurrence; the scores on the female picture had odds of about 100 to 1; the others were not perceived. That is also

an example of 'focusing,' a common event in which percipients score well with some targets and not others.

Thelma Moss of the University of California stresses the importance of emotionally colored material in successful telepathy research. In one well-designed experiment, conducted between Los Angeles and Sussex, Moss and her associates used emotional and non-emotional targets. The percipients scored with a 2,000 to 1 probability against chance on the emotional targets, but only at chance with the non-emotional ones. In her search for stimulating targets, Moss has also used living scenes.

In one of these experiments a percipient, Barry Taff, then a graduate psychology student, performed particularly well in a long series of trials in which an agent would try to transmit a theme from an isolation booth five stories above where he sat recording his impressions. Moss reported that on one occasion the agent, a young girl, was asked to dress like a hippie. The experimenter removed some scarves, a kaftan, and several strands of beads from a small suitcase and placed them on a table. The agent, Miss K., said, 'I think Barry would appreciate me more with nothing on!' (Evidentally the truth.) 'Would you prefer to take things off?' the experimenter asked. Miss K. laughed and said 'No!' Taff recorded his impression of their exchange: 'Somebody pulling something out of a suitcase or briefcase . . . like pouring something on a table . . . like beads or small things. . . They told her to take something off, and she made a joke about it, like clothing or something.'

Moss noted that a percipient picks up information from a target that resonates with his personality and interests. Taff was alive to the sexual aspects of a target; a businessman might isolate another. Suppose the target were a pretty girl in a black mini-skirt who wore a large crucifix and held a box of money. Taff might focus on the girl's image, how pretty she was, and perhaps even her name (which he did several times). A banker might see a teller with a bankbox. A third might see a nun holding a reliquary, and so on. Although selective perception shapes ordinary sensory information, it operates with fewer hindrances on telepathic data.

Moss's excellent work represents the trend towards using

more complex targets that offer novelty and spark emotion. Picture targets have consequently returned to telepathy research after long disuse and, with new procedures, are proving their worth in the laboratories of the present generation of parapsychologists.

The instances of telepathy noted so far have depended on their being registered by consciousness. But we have seen there appears to be a barrier between the unconscious and conscious minds, and we might wonder if there are telepathic perceptions that never enter conscious awareness at all. Because, as in all perceptions, telepathic data are first perceived on an unconscious level to which consciousness has limited entrée, we may suspect that telepathy is far more common than its forays into consciousness would hint. And since telepathy, like creativity, may find the penetration of consciousness its greatest obstacle, it would be useful if some way could be found to short-circuit consciousness and observe telepathic events directly at the unconscious level. Experiments in subliminal perception, biofeedback, and hypnosis have demonstrated that a person can respond to stimuli that are not consciously perceived. But what if the stimuli are telepathic?

Stefan Figar, a Czech neurophysiologist and an authority on the plethysmograph, found out. A plethysmograph is an instrument that registers minute blood volume changes in the extremities. These are among the many subtle physiological changes that reflect bodily response to anger, fear, pain, mental effort, and so on. Figar was investigating blood volume changes in response to mental effort by giving his subjects various tasks to perform, such as multiplying two numbers mentally, while they were connected to a plethysmograph. As soon as a subject began calculating, the instrument recorded a vasoconstriction, a sharp drop in blood volume. Figar was surprised to find that several of his subjects showed vasoconstrictions just before he gave them a problem; that is, while he was thinking it was time to give them a problem, the recording pen indicated a drop in blood volume. It was as though his subjects had read his mind. Further experimentation proved to Figar that they had done precisely

that; the plethysmograph could mark the occurrence of 'bio-communication' (the Soviet-bloc term for telepathy). Figar wasn't interested in parapsychological research, but he recognized that others might find his results of interest.

They did. Particularly E. Douglas Dean and Karlis Osis, who began a series of experiments in 1960 with some technical assistance from Figar. We saw that the brain waves of a sleeping subject would respond when he 'heard' his own name or that of someone important to him. Would the unconscious similarly respond if the names were whispered telepathically? That was the approach adopted by Dean and Osis. Their percipients were asked to submit the names of five people they knew, such as sweetheart, spouse, boss. The agents also submitted the names of five people they knew, and the experimenters added five more from a telephone directory – chosen to resemble the ones submitted by the percipient. If he gave, say, Italian names, Dean and Osis chose Italian names so that the agent couldn't distinguish among them. The percipient, connected to a plethysmograph, knew only that an agent in another room or another state was looking at names on cards. He knew nothing else, not even when the experiment began or ended. The twenty-second transmitting periods were marked on the plethysmograms. Later, independent judges who didn't know the order of the names measured the vasoconstrictions that appeared as 'dips' on the graph. The dips for each category of names were averaged and then matched with the names.

Dean and Osis found that when an agent concentrated on names known to his percipient, the percipient's plethysmograph tracing jumped about 50 percent over the times when the agent concentrated on names known only to himself or on those known to neither. Although the percipients responded to the names of people they knew, and to some more than others, they were not consciously aware of it.

The researchers got 'superb plethysmograph reactions' from a talented psychic, but most of their subjects were unselected with respect to previously demonstrated telepathic ability. They were thus surprised to find that one in four subjects succeeded in these experiments, and Dean speculated that the other three may have succeeded with a

different agent. That was an important result, as Dean enthusiastically reported: 'It finally sank in on me – we've found a method whereby anybody can set up a lab any time and do telepathy whenever he or she wants!' And the decline effect did not appear, presumably because they evaded the interference of the conscious mind.

In the same experiment the targets had emotional content only for the percipient, but in spontaneous cases it is more often the agent's emotions that are aroused. That fact provided the rationale for an experiment devised by Charles Tart. After connecting his percipient to an EEG, a plethysmograph, and an instrument to measure the skin's electrical resistance, he periodically gave a mild electric shock to an agent in another room. Because an electric shock emotionally stimulates most people, Tart suspected that shocking an agent would give a fillip to telepathy. It did. Although the percipients did not consciously know when the agent was shocked, their physiological records indicated when it happened.

A provocative experiment along these lines was reported in 1973 by D.H. Lloyd. Researchers in Toronto beeped a single note in short, rhythmic bursts at a subject. Whenever the tone sounded, an EEG displayed the brain-wave pattern it elicited. Next, however, the experimenters turned off the sound generator and exchanged it for a telepathic agent whose thoughts were to replace the tone. And they found that rhythmically pulsed telepathic thoughts directed at the percipient 'evoked responses in the EEG which are similar in form, and comparable in magnitude, to those evoked by physical stimuli such as sounds.' The experiment again demonstrated that a telepathic stimulus can be correlated with a clearly observable event in the percipient's brain, whether it enters awareness or not.

Puthoff and Targ of the Stanford Research Institute knew that when a person is stimulated by a low-frequency flashing light, less than twenty cycles per second, an EEG will indicate a reduction of the resting alpha brain-wave pattern and a driving of the brain waves at the frequency of the flashes. They hypothesized that if a telepathic agent was stimulated in that fashion, the EEG of a percipient in another room might

show changes resembling those occurring in the agent.

In 1974 they tested their hypothesis in an experiment with Hella Hammid. She was told that at certain times a light would be flashed in the agent's eyes in another room, and that if she perceived the event, consciously or unconsciously, it might be indicated by the EEG. Seated in a visually, acoustically, and electrically shielded double-walled steel room twenty-five feet from the agent, she was asked to signal with a telegraph key whether the light was flashing and, if it was, at what frequency. They found that Hammid's alpha activity dropped significantly in average power and peak power during a sixteen-per-second flash as compared with the no-flash period. Her conscious guesses about when the light was flashing, on the other hand, were no better than would be expected by chance. 'Hence,' the scientists concluded, 'the experiment provided direct physiological (EEG) evidence of perception of a remote strobe light *even in the absence of overt conscious response*.'

Because the conscious mind is not a necessary partner in the telepathic process, there is no reason why subjects need to know they are participating in a telepathy experiment. In the study just mentioned in which he gave the agents an electric shock, Tart didn't tell the percipients that it was a telepathy experiment. They thought they were subjects in a study of subliminal perception – of the usual kind. But their ignorance of the conditions and failure to consciously recognize the signals did not prevent their bodies' responding to them.

The evidence is clear on this point: We can receive telepathic signals, and our bodies may respond to them, without our being conscious of the signals or that anyone is aiming them at us.

Although telepathy can be demonstrated in a laboratory, there it is a puny spark compared with its sometimes powerful visitations in life. Dean estimated that the experiments at the Newark College of Engineering involved a telepathic communications channel of about one bit each five minutes with a 67 percent reliability, and a Soviet investigator, Kogan, arrived at a similar figure. (One bit is the amount of information needed to determine the answer to a yes or no question when either answer is equally likely.) Laboratory telepathy is

obviously no threat to telephone companies – yet.

Nevertheless, with EEG's, computers, plethysmographs, has practical telepathic communication arrived? Schmeidler, in her 1971 address to the Parapsychological Association, stated:

> I therefore put it to you that accurate communication by ESP is possible. It may be expensive; it may take many man-hours; but it can be done. Suppose someone asked us, 'if we give you a large budget to pay for the transmission, can this short message be transmitted by ESP?' I suggest that by now our answer should be 'Yes.' We know how to do it.

That's undeniable progress, but would anyone ever want to? Well, hang the expense (governments can), it may be vital to communicate with a spy – or a star ship on that far day when we have broken free of our solar system.

The experiments we have looked at and Schmeidler's remarks seem to indicate that any practical use of telepathy demands costly equipment and elaborate procedures. Not so. Sensitive percipients (psychics), with only their minds, regularly demonstrate the practical applications of psi in psychical diagnostics. We have seen that the controller in an agent's unconscious must necessarily be informed about all aspects of the body and its functioning, and we have also seen that a psychic may pick up information about events in an agent's body, such as its reactions to a strobe light, an electric shock, or a heart attack. These findings suggest that a psychic may be able to tune in on – diagnose – physical problems. It is possible. And far from being one of the more unusual manifestations of psi, it is one of the commonest and most reliable. In fact, psychics do as well as or better than physicians, and their accuracy is so consistently high that psychical diagnostics is one of the easiest demonstrations of psi.

C. Norman Shealy, a neurosurgeon who studied under Eccles, reported on a conference sponsored by the Research Department of the Menninger Foundation in which psychics were compared with physicians in the accuracy of their di-

agnoses. Patients were brought in from outlying hospitals and a panel of five physicians were permitted to examine them however they wished and to consult their medical records. Then the psychics were called in to 'examine' the patients – a process that consisted of merely looking at them from a distance or passing their hands over them without contact. Yet the psychics were 80 to 90 percent accurate. And Shealy said, 'Physicians don't do any better than this.'

Shealy conducted additional research on his own. And on an initial trial, in which eight psychics were allowed to see but not question seventeen patients, he found they were as much as 98 percent accurate. He then carefully selected a group of seventy-eight patients, but this time permitted no direct contact with them. Shealy chose pain patients because their problems lend themselves to statistical analysis and it was simple to verify the location of pain. The psychics were to specify in which of twenty-two areas of the body pain was experienced and the condition causing it – cancer, infection, amputation, and so on. Even though they had no contact with the patients, the psychics were still 75 percent accurate in their findings.

Shealy concluded:

> Data from various investigators and people who are interested confirm my own computerized study which proves in scientific terms and figures that psychic diagnosis is valid, that psychic diagnosticians are virtually as accurate as doctors with all their X-rays and devices and laboratory tests.

Shealy and other physicians now routinely use psychics for diagnostic purposes, a practice recently permitted by the American Medical Association. Of course it's only an aid, but adding the psychics' diagnoses to those arrived at by conventional means, Shealy believes, will permit diagnostic accuracy to approach a 100 percent. And at least in this area psi has already proved its practicality.

Why does telepathic information so often fail to attract conscious attention after its arrival in the unconscious? Perhaps because consciousness is flooded by far more cla-

mant stimuli flowing from the senses. But if that torrent from the outer world is deflected to allow the senses a holiday, as in sensory deprivation or isolation experiments, could we hear the murmerings of the chthonic world more clearly?

An early investigator of sensory deprivation, Woodburn Heron of McGill University, was not in the least interested in investigating telepathy. But it nonetheless arose spontaneously in his experiments. Some of his subjects received telepathic impressions from distant friends or 'saw' researchers in other parts of the building. He reported they were so impressed by their experiences that as soon as possible they went to the library in search of books on telepathy.

Relaxed people are also somewhat disconnected from the clamor of the senses. What would happen if subjects were deeply relaxed, as by the Jacobson progressive relaxation technique? William Braud of the University of Houston wondered if that would enhance telepathy. His percipients were trained to develop deeply relaxed states and, while relaxed, an agent on a different floor of the building was given a randomly selected target picture from a pool of art prints and magazine clippings. The agent was instructed to concentrate on the target picture, especially on its raw sensory qualities. Braud wanted to involve all the senses: the agent was to trace the outlines of the shapes and to imagine as vividly as possible the textures, tastes, odors, and sounds the picture suggested. One target was a Coca-Cola advertisement illustrating two bottles surrounded by ice cubes; in the upper center was an antique car and a man on a motorcycle. The percipient, an assistant professor of psychology, reported: 'I vividly saw a glass, a frosted glass filled with Coca-Cola. This glass appeared to be in the upper right-hand area. . . Some secondary images . . . a road in the center of the photo.'

In the first series of experiments with ten subjects, all scored hits, and seven were direct hits. In all, between November 1969 and January 1972, Braud experimented with twenty-two subjects. Of these, nineteen repeatedly scored hits and only three failed to receive any telepathic impressions.

These techniques diminish sensory stimulation or its effects, but that isn't all that happens. In sensory deprivation,

for example, the subject loses ordinary consciousness after a time and his mind turns inward. Vivid hallucinations may then parade before him, which he watches as he would television. If he remains in the experimental situation, however, the hallucinations pass and he slips into unconsciousness. We are thus led to suspect that it may not be the alteration of the sensory environment itself that produces the effects encouraging telepathy but the ensuing state of consciousness.

Of course sleep is an altered state of consciousness. And if the chthonic landscape can be glimpsed as the outer world fades, we should expect sleep to foster telepathy. Democritus thought it did. In the fifth century BC he argued that dreams were caused by thoughts that leaked from other minds. Although Freud certainly believed dreams also had other causes, he did say that it was 'incontestable' that 'sleep creates favourable conditions for telepathy.' Jung concurred: 'I have found that telepathy does, in fact, influence dreams, as has been asserted since ancient times.'

Spontaneous telepathic events, such as those introducing this chapter, support the views of those two great explorers of the unconscious. The Duke collection of spontaneous psi events contained over ten thousand cases by 1963. These were classified in four ways: 30 percent as intuitive impressions, 13 percent as hallucinatory visions, 18 percent as unrealistic dreams, and 39 percent as realistic dreams. Although people spend less than a third of their time sleeping, and less in dreaming, dreams nevertheless account for over half the spontaneous cases. Clearly, dreaming promotes telepathy, or at least its conscious recognition – when the dreams are recalled, that is.

Dreams may be the commonest natural source of recognized telepathic experiences, but they were of little use to experimental science. Because people have difficulty remembering their dreams at best, and some deny dreaming at all, dreams appeared immune to the prying of science until, in the 1950's, Eugene Aserinsky and Nethanial Kleitman at the University of Chicago began an EEG study of sleeping. At their sleep laboratory they monitored the brain waves of subjects as they slept throughout the night. They found a

periodically occurring phase of sleep characterized by rapid eye movements – as though the subjects were watching things in motion – and EEG activity that resembled the waking state. Far from being wakeful, however, they were less responsive to the outer world than at any other time. These periods of rapid eye movement (rems) occurred four to seven times during a typical sleep of seven hours. But their important discovery was that when the EEG registered a pattern called 'emergent stage I sleep' and the eye channels indicated rems, the subject would report a dream if awakened. Yet if awakened only five minutes after the rem period, he could not recall having had a dream. These experiments showed that everyone dreams; and the dreams could now be recalled and recorded on the spot – all of them.

The means were now at hand to investigate the influence of telepathy on dreams. Montague Ullman and Stanley Krippner at the Maimonides Medical Center's Dream Laboratory accepted the challenge and began a long series of experiments in dream telepathy. While a percipient slept in an isolated room, monitored by an EEG, an agent in a distant room attempted to transmit the image of a randomly selected picture, the same picture, throughout the night. When the EEG technician noticed that a percipient was dreaming, he was awakened to recount his dream. Later, the tapes of the dream reports and the target pictures were given to outside judges for matching.

One of their target pictures was Tamayo's *Animals* in which two large dogs with conspicuously white teeth seem to be snarling in defense of a piece of meat. Sol Feldstein, then a graduate student at the City College of New York, was the agent. The percipient was a young teacher from New York. Feldstein concentrated on the details of the picture, its forms and colors. He felt the picture and traced its outlines with his finger as he tried to visualize the percipient's face and project the target into her dreams. After the EEG indicated that she had been dreaming for several minutes, the percipient was awakened to report her dream:

> I was at this banquet, and I was eating something like rib steak. And this friend of mine was there . . and people

> were talking about how she wasn't very good to invite for dinner because she was very conscious of other people getting more to eat than she got, especially meat, because in Israel they don't have so much meat. . . That was the most important part of the dream, that dinner. . . And I was chewing a piece of . . . rib steak. . .

The dream does not include dogs, but her emphasis on greed and eating made it easy for the judges to match it with the target.

Wherever it gets its thread, the unconscious artist weaves a tapestry of the dreamer's hopes, fears, lusts, and conflicts – depicted in symbol, myth, personal memories, and monstrous shapes. The dream above clearly expresses the theme of *Animals* in terms of the dreamer's personal experience. But in some dreams, for unknown reasons, the telepathic image appears undisguised. Ullman and Krippner's study contains many of these. George Bellow's *Dempsy and Firpo* was the target for one such dream. The picture portrays two boxers, one in the ring and the other tumbling over the ropes, toward the right corner of the picture, into a crowd of spectators. The percipient's dream contained little personal material: 'Something about posts,' he reported. 'Just posts standing up from the ground and nothing else. There is some kind of feeling of movement. . . Ah, something about Madison Square Garden and a boxing fight. An angular shape . . . an irregular shape coming down from the right.'

Calvin Hall of the University of Virginia conducted a similar study of dream telepathy in which he particularly emphasized the agent's active role. The agent was told to pantomime a randomly selected scene and to think, feel, and believably act out the theme of the target. Hall also added a twist. Some of his subjects knew they were to be percipients in a telepathy study, but the others thought they were participants in a sleep study. Hall found that in twenty-nine of thirty-six cases direct elements of the pantomime were unmistakably included in the percipients' dreams. And that happened whether or not the percipient knew he was in a telepathy study. Again, knowledge that a message will be sent apparently no more increases the likelihood that it will be

received in the dreaming state than in the waking state, and the percipient in these experiments seems to be a passive receiver. But one of the more important findings of these studies is that while sleeping the average person has a telepathic sensitivity equal to that of the talented psychic.

On the basis of long experience, Richet said, 'It is in no way doubtful that [psi] is developed by means of hypnotism, magnetism, and somnambulism. . .' Puységur observed telepathy in the first known instance of magnetic somnambulism. He was astonished to find that Victor would respond to his unspoken suggestions and even repeat the words of a song that he sang mentally. Puységur said that he had no need to speak to Victor, but merely to think and he would understand and reply. He later achieved these results with another subject, Madeleine, whom he could place in rapport with others so that they, too, might communicate with her telepathically. Telepathy and hypnosis were thus linked from the beginning and were frequently seen in company by the early experimenters. Alexandre Bertrand, a distinguished French physician, published a treatise on induced somnambulism in 1823 that included many experiments he had witnessed in which telepathy was a prominent feature. Another important investigator, Alphonse Teste, published his influential handbook on magnetism in 1845 in which he described a number of telepathic incidents that took place in his own experiments. Indeed, telepathy was such a commonplace during the salad days of magnetism that it was regarded as self-evident.

Telepathy was one of the so-called higher phenomena of magnetism. Not all early investigators, however, were able to produce the higher phenomena. And it is perhaps significant that the few who failed in their production or found it very difficult were those who rejected the theory of animal magnetism for suggestion, such as Braid and Bertrand. Still, they were not generally critical of investigators who had produced them. Braid, for example, thought it improper to impugn the statements of other investigators, but he denied seeing evidence of even telepathy in his own work. It impudently appeared anyway; it was just that he failed to see it – he thought it was phrenomagnetism. But unlike Braid, most

investigators recognized telepathy when it appeared, and it continued to flicker about deep trance states throughout the nineteenth century. It was repeatedly observed in early experiments conducted by such eminent scientists as Sir William Barrett, Pierre Janet, and Charles Richet.

Hypnosis continued to be occasionally used in Western psi research. Reviews of the literature showed that hypnosis facilitated psi, and Van de Castle's review gave a pooled probability of 10,000 million to one for the difference between hypnotic and waking psi scores. Even so, as the nineteenth century waned, obvious telepathy was less and less often seen in association with hypnosis and, with the exception of a very few psi studies, was seldom mentioned. Why? One reason may lie in the general acceptance of the suggestion theory of hypnosis and the adoption of induction techniques compatible with it. The deep trances that had been central to early experiments became rarities; hypnotic research would now rely on the more easily and rapidly obtained light trances. And the higher phenomena, as so much else, became casualties of efficiency.

If telepathy had all but vanished in experimental hypnosis, it was still occasionally met with in other contexts. A neurologist serving with the Fourth Army of the Somme noticed that about fifteen percent of the soldiers were easily hypnotized immediately after the shock of exposure to shellfire 'and a large portion of these', he said, 'exhibited telepathic . . . powers.' Of course shell-fire is a tangy emotional tonic and the battlefield a school in which many have had their telepathic powers stimulated. Bombs, very possibly, have taught us more about psi than all the catchpenny gurus since time began.

Although the use of hypnosis to explore telepathy was supplanted by Zener cards in the West, it continued to kindle interest in the Soviet Union – of all places – where hundreds of experiments were performed, many by L.L. Vasiliev, the 'Russian Rhine.' He reported a study in which a hypnotist attempted to telepathically influence an entranced subject's grasp on a rubber bulb at random intervals. In 260 trials he encountered only 6 failures. 'It is to be regretted,' Vasiliev wrote, 'that the hypnogenic method of mental suggestion is

no longer used abroad. There can be no doubt that its elaboration and elucidation is a great achievement of Soviet researchers.' But Soviet scientists no longer monopolize the field; Western scientists have resumed their interest in the 'hypnogenic method,' at least in a small way.

Burton Glick, chief of psychiatric research at New York's Mount Sinai Hospital, was impressed by Ullman and Krippner's dream studies and wondered if hypnosis would yield similar results. A good hypnotic subject, a nurse at the Elmhurst Medical Center in New York, was entranced in 1971 and given Winslow Homer's *The Gulf Stream* as a target. It depicts a man lying alone athwart the deck of a small, dismasted sloop bobbing about helplessly in choppy seas; huge sharks circle the boat as the man looks at an approaching waterspout. She responded:

> There's a figure – the figure in the foreground – a figure that's suffering – more than suffering – the figure is in great pain. . . Everything is – the background is in perspective. It's just a beautiful scene, a scene of nature. It's very realistic but the figure is distorted. It's almost as though the figure is stretched out – on top of something; no, against something. Everything is going – everything is swirling around him, but nothing is really moving. I don't know if he's moving, swirling, spinning around. No. Everything around him is moving. He's standing still.

Charles Honorton, about the same time as Glick's study began an experiment with sixty subjects and a target pool of about 150 art prints that was conducted along the lines of the Maimonides dream telepathy experiments. The subjects were divided into two groups: one group was hypnotized and instructed to dream about the target; the other (control) group stayed awake and was told to daydream about it. They were given five minutes for their dreams and daydreams. Because he worked with a large number of subjects, Honorton saw a wide range of trance states and a variety of hits and misses. Some of his hits were remarkably exact, but he found these were rare among his subjects as a whole. For his best hypnotic subjects, those who entered a deep trance easily, however, direct hits were fairly common. Honorton's

study showed, as we might suspect, that the deeper the trance the more sensitive a subject becomes to telepathic impressions.

If hypnosis fosters telepathy, and the deeper the better, what of the deepest state of all, the plenary trance? It has unfortunately received little scientific attention – probably because it requires so much effort: long hypnotic training periods and lengthy inductions are the usual prerequisites. A good hypnotic subject who can become somnambulistic in moments may still need hours to reach a plenary trance. But Leslie LeCron thinks it is worth the trouble and merits attention for both its therapeutic value and its potential for the enhancement of psi. Certainly if telepathic ability becomes more pronounced as the trance deepens, it should flourish at the plenary level.

Robert Masters reported one subject, a woman in her twenties, who was able to enter a plenary trance after nearly a hundred hours of hypnotic training and remain in it for as long as two days at a time. Before she attained the plenary trance she failed to achieve significant scores on a battery of psi tests, but while in it her telepathic sensitivity appeared. Masters told of one incident in which she was given the name of someone unknown to her, but known to Masters, and asked to describe the person. It was a dark-haired woman, she said, probably in her mid-thirties, who was crippled and in a wheel chair. She said the woman was given to childlike temper tantrums in which she would curse and throw things. She then imitated a growling voice that closely resembled the woman's. All her impressions were correct. The initiative for telepathy in dreams is the agent's; here it is the percipient's.

Masters found it difficult to keep secrets from her. She often related details of experiments he was thinking about and sometimes mentioned highly personal information about his private life. His subject later discovered she was able to enter a self-induced trance in which she could pick up information telepathically. Masters, who has worked with a half-dozen plenary subjects, noted that he *always* observed some degree of telepathic ability in the plenary trance and concluded: 'These cases seem to offer good evidence that telepathy is a capacity of the average person.' And the timid

have an alternative to shell-fire for awakening their psi faculties.

Hypnosis appears to increase a percipient's sensitivity, but does it enhance an agent's ability to transmit? We saw that in spontaneous telepathic events the agent was often traumatized, which we know tends to produce a hypnoidal state. And that suggests that telepathic exchanges would be freer if both percipient and agent were entranced. Keeling found supportive evidence for this hypothesis in one of the very few studies to address itself to the question.

But Keeling's subjects were in ordinary hypnotic states. What if both percipient and agent were in the deepest state of all, the plenary trance? That was investigated by Charles Tart, who performed one of the most provocative experiments in hypnosis since the days of Puységur and arguably one of the most significant experiments since Galileo. Tart knew that 'rapport,' the special relationship between a hypnotist and his subject, seems to intensify as the trance deepens. He reasoned that anything increasing rapport would also deepen the trance and hit on the scheme of 'mutual hypnotism' in which two people hypnotize each other and each continues to deepen the other's trance. Tart thought plenary states could be brought about through mutual hypnotism even in people who were otherwise difficult to hypnotize.

Tart's technique accomplished all that he expected – and more. His first two subjects, Anne and Bill, entered plenary trances through mutual hypnotism and were able to explore other worlds together. On their third 'trip' they arrived at a place they described as a 'heaven' of some sort where the colors were superlatively vivid and even the stones were beautiful, translucent, and glowing. Its water, charged with huge bubbles, resembled champagne. They swam in it and found it extremely buoyant and 'bouncy' as well as delicious. The lush world in which they reveled was not a dream to them, but entirely real.

Anne and Bill assumed they were building their world jointly through ordinary suggestion in their conversation, which would be usual in hypnosis. And they thought they were talking continually when they had actually remained

silent and unresponsive for long periods. But after Tart finally contacted them, they reported that they *had* been talking to each other. Later on, when they read a transcript of the tapes made during the session, they were shocked to learn they had been silent during a large part of the time they were exploring their world. The verbal suggestions that should have evoked their shared experience were absent. Apparently they hallucinated speaking, hallucinated hearing (correctly), and together hallucinated a world they shared and perceived in the same way. It would seem that mutual suggestion had occurred telepathically – either that or they went to Heaven. And either alternative should appeal to the philosophically minded. Bishop Berkeley would have been delighted.

Tart repeated the experiment several months later with two other subjects who enjoyed similar adventures. In both cases the participants developed an intimate bond that grew too intense for the experiments to continue – the subjects were married, but not to their partners in the study. Thus ended, in the interests of marital tranquility, experiments as charged with provocative implications as any in the history of science. One implication, and the one of immediate interest, is that telepathy may proceed with such fluency that it goes unrecognized and becomes the primary means of communication for people who enter deep trances in rapport.

We saw that psychedelics permit excursions into distant regions of the chthonic mind. The state of consciousness needed for these voyages, we might suspect, is likely to be one favorable to telepathy. That has always been the contention of primitive peoples (and some not so primitive) who have traditionally used psychedelic substances for this purpose.

Kenneth Kensinger investigated the use of one of these substances, *ayahuasca*, by a tribe of Indians in Peru, the Cashinahua. After ritually ingesting a preparation of the plant, the Indians have hallucinations of remote and unfamiliar places. Kensinger remarked that several of the Indians, who had never been to Pulcallpa, a large town on the Ucayali River, or seen pictures of it, were nevertheless able to describe their *ayahuasca* visits to the town in sufficient detail for him to identify specific shops and sights. Apparently, as in

mutual hypnosis, they are able to see the same things. On the day following one *ayahuasca* session, six of the nine participants told Kensinger they had seen his uncle die. Two days later he was informed by radio of his uncle's death, just as the Indians had reported.

Ayahuasca (prepared from various species of the genus *Banisteriopsis*) is also known as *caapi* and *yagé*. Although we know very little about these preparations, they are widely used by South American Indians. William McGovern, assistant curator of South American Ethnology at the Field Museum of Natural History in Chicago, described the effects of one of these on the natives of an Amazon village. In his 1927 report he wrote that certain of the Indians would fall into a very deep trance in which they 'possessed what appeared to be telepathic powers.' Several of the men described what was happening at places hundreds of miles away, places they had never seen, but which tallied exactly with what McGovern knew of them. On one occasion the local witch doctor told him that the chief of a certain tribe on the faraway Pira Parana had suddenly died. 'I entered this statement in my diary,' McGovern said, 'and many weeks later, when we came to the tribe in question, I found the witch doctor's statement had been true in every detail.'

But technological man disdains weeds and ogles the test tube. Nor was he disappointed. The test tube was fruitful and brought forth science's contribution to the pharmacopeia of mystery – LSD. Before it was snatched from science, LSD offered interesting research possibilities and had been used in a few psi experiments. Masters and Houston noticed that psychedelic subjects appeared to pick up random images that crossed the experimenter's mind and were especially apt to do so if the images were emotionally charged.

That encouraged them to conduct a psychedelic experiment in telepathy. Ten images were written down and placed in envelopes. An experimenter acted as an agent and attempted to transmit the images to the percipient from a distance. A second experimenter accompanied the percipient to record his impressions. The target images were quite varied, and the percipients' responses were surprisingly free of distortions despite the influence of LSD. To the target image of a Viking

ship battling a storm, for example, one percipient (who got eight hits) saw a snake with an arched back swimming in stormy seas; to the target image of Atlas holding up the world, he saw Hercules tossing a ball up and down in his hand; and to the target of an Arab riding a camel by a pyramid, he saw a camel passing through the inside of a vast labyrinthine tomb.

Of the 62 subjects tested, 48 approximated the agent's image two or more times out of ten. Only 14 failed to receive less than two of the ten images. Is it possible that scientists have truly abandoned such promising research? Or have they merely gone underground like the anatomists of centuries past?

Chapter 6

The sum is sorcery

Sorcery unconscious, accidental, natural. Dora Martin fell victim to a spell and didn't know it – neither did the 'sorcerer.' Her experience and others like it will interest us because, certainly for sorcery, art imitates nature.

Information may be transmitted telepathically, and that information could well be in the form of a suggestion. And we have no reason to suppose it would be any less effective, if received than an ordinary suggestion. It may be transmitted, moreover, without the conscious awareness of either 'agent' or 'percipient.' With these insights we are prepared to add up the evidence thus far accumulated. And, as usual, nature has spontaneously done some of the addition for us, as it did in the case of Mrs Martin.

She was awakened one night with a severe chest pain and a peculiar fit of weeping while she and her husband, a physician, were travelling in Italy. Although his wife's pains were symptomatic of a collapsed lung, Dr Martin found nothing wrong and in a few hours she felt fine. Mrs Martin had never met with such pains before and said, 'It felt as if someone was taking the air out of my lungs.' Ten days later they discovered that her twin sister, Martha, had a very difficult, premature delivery. She went into shock, lost a great deal of blood, had blood clots in her lungs, and was unconscious for about four hours. That happened, Ian Stevenson reported, at the time Dora experienced her pain in Italy. And because Martha had not written to Dora in a long while and her delivery was premature, Dora had no reason to expect it.

Sympathetic pains or illnesses are unfortunately not limited to transient experiences. Bobbie and Betty were identical

twins who were almost constantly together. Bobbie was the dominant twin, with Betty reflecting her sister's thoughts and actions. Whenever Bobbie was ill, so too was Betty – even when the illness was schizophrenia. Both were committed to the Broughton State Hospital in 1961. But when they failed to improve after a year, it was decided to separate them for therapeutic reasons. The twins were placed in different wings of the hospital and allowed no communication with each other.

One spring night in 1962 the head nurse found Bobbie dead. Aware of the twin's affinity, she was concerned about Betty and telephoned her ward. Betty was also found dead on the floor; both were lying on their right sides in a fetal position. John Reece, former president of the state medical society and the North Carolina Pathological Society, performed the autopsies. He found no evidence of any injury or disease that could cause death. Of course the authorities were careful to exclude the possibility that their deaths were other than 'natural.' Further analyses for poisoning were made by the North Carolina Bureau of Investigation and again by the FBI. They also failed to find a cause of death.

Earlier we saw that experiments with the plethysmograph and EEG indicated that a telepathic stimulus may cause an unconscious physiological response in the percipient. And these spontaneous cases suggest that its effect on the body may be much more than a minute vasoconstriction or the wiggle of a brain wave. As the history of the schizophrenic twins points out, it may be profound and lethal.

Instances of bodily sympathy are not unusual. Louisa Rhine found that one-fourth of the telepathic hallucinations in her files were of hallucinations felt in the body. Berthold Schwarz, a psychiatrist who collected hundreds of these cases, described them as 'telesomatic reactions.' Knowing that telesomatic reactions occur, we are able to look at many events in a new light, and we may find that a few old wives' tales assume a new interest.

One of these tales, persistent and widespread, holds that a pregnant woman can 'mark' her unborn child as a result of a strong emotional experience. It seems to have been little doubted until recent times when it became a fashionable

object of ridicule; even Darwin reported a case. For those unfamiliar with that bit of folklore, a sample from the many recorded cases will illustrate it.

Baudouin related what happened to a young pregnant woman who was visited by a friend of her husband's whom she had never seen before. He had a malformed nail on his left forefinger that had been caused by an accident. It was thick and curved, and resembled a lion's claw. She couldn't take her eyes off his deformity and became obsessed with the fearful belief that her child would be born with a similar finger. And so it was. The child was born with a claw on the left index finger resembling that of her husband's friend. Her fear and intense preoccupation were the fuels for a telepathic discharge. Her fetus's controller then acted on her thought and obligingly altered the genetic code.

We have seen that telepathic events are more likely to take place between people who are emotionally linked, and the link is especially strong between mother and child. Indeed, incidents of mother-child telepathy are among the most common of the spontaneous cases. Nor should we suppose the link begins only at birth. Jan Ehrenwald called pregnancy the 'cradle of ESP' and suggested that the intimate physiological association of mother and fetus might extend into psychological areas. We also saw that the unconscious, under hypnotic urging, could affect genetic instructions to cure congenital disorders. If it can cure them, why should it not be able to inflict them? Fetal marking was rejected merely because the learned could not comprehend *how* it could occur – a feckless reason to deny anything, particularly the testimony of competent observers. But we and old wives know better, and obstetricians have another problem they could well do without.

Among the many striking phenomena seen during the heydey of magnetism was 'community of sensation,' a species of telesomatic reaction in which a magnetized subject experienced sensations originating with the magnetizer's senses. Bertrand noted in 1823 that some entranced subjects would respond to sensations experienced by the magnetizer; that the subject could, for instance, 'taste' substances put in the

magnetizer's mouth. Elliotson reported that he had performed the experiment successfully and it was observed by many other early investigators, one of whom, H.S. Thompson, recognized that it was essentially a telepathic phenomenon.

James Esdaile, the surgeon who magnetized so successfully in India during the mid-1800s, entranced a young Indian with whom he made a trial of community of sensation. Esdaile selected salt, lime, gentian, and brandy. As he tasted each, his subject named it correctly. Yet Esdaile denied having witnessed the higher phenomena; evidently he did not regard community of sensation as anything special.

Community of sensation continued to be observed and not only by scientists now largely forgotten, but by those closer to our own time. Schrenck-Notzing, in the last years of the nineteenth century, conducted a series of thirty-three experiments with an excellent subject, Lina. If he pricked himself with a needle, Lina would 'feel' it. She was also able to 'taste' a variety of substances put in his mouth – sweets, coffee, turpentine, pepper – and 'smell' odors that he sniffed.

About the same time Sir William Barrett undertook similar studies. His subject was a child able to attain a trance so deep that she would not respond to powerful electric shocks. After gathering a number of things from the pantry, he stood behind the girl, whose eyes were securely bandaged anyway, and put some salt in his mouth. Instantly she sputtered and exclaimed, 'What for are you putting salt in my mouth?' Then he tried sugar and she said, 'That's better.' When asked what it was like, she said 'Sweet.' Then mustard, pepper, ginger, and other substances followed; each was named. It didn't make any difference if the substances were tasted in another room or if everyone was excluded from the room but Sir William and his subject. He performed additional experiments over the years with the same results.

Pierre Janet successfully carried out nearly identical experiments in the late 1880s, and Gurney, Podmore, and Myers reported a number of studies conducted by themselves and others. But the faster pace of the new century allowed little of the time these exacting experiments demand, and they were largely forgotten in the West.

With one exception (noted in the next chapter), investigations into community of sensation as such were no longer conducted, but its essential features still arose in other contexts. Milan Ryzl described experiments in Czechoslovakia in which an agent was given a depressant drug and asked to concentrate on gloomy emotions. The percipient, showing an appropriate EEG response, began to suffer strong head pains and nausea. In another series of experiments the agent did not actually experience the sensations he telepathically transmitted, but imagined them. In one the agent and percipient were miles apart and the percipient wasn't told what transmissions were to be attempted. But at the precise moment the agent was asked to imagine that he had been buried alive, the percipient suffered an asthma attack – though he had never been troubled with breathing problems. And it appears that a vivid imagination can supplant real experiences.

Jule Eisenbud remarked:

> It is no more mysterious or supernatural for a telepathic stimulus to occasion an asthma attack or any other set of physiological events than it is, on one hand, for a telepathically perceived stimulus to be reacted to in a dream. . . In analysis I have seen several examples of psychosomatic developments on a telepathic basis. . .

If some entranced subjects can telepathically receive messages, including raw sensations – taste, smell, pain – from an agent or hypnotist, one might expect them to follow suggestions given mentally. That can happen. Puységur's subject and first-known magnetic somnambulist, Victor, obeyed telepathic suggestions. Bertrand's experiments also showed telepathic suggestions were sometimes as effective as oral ones. And their effectiveness continued to be witnessed down to the end of the nineteenth century. In 1886 Schrenck-Notzing published experiments he had conducted with Lina, who was able to follow complicated orders given mentally – one required her to go to a table, which had some books and papers on it, pick up a specific book, and put it in the pocket of his cloak in another room.

Posthypnotic suggestions may also be given mentally and

may provide the subject with experiences resembling the visits of Estabrooks's pet bear. A.A. Liébeault had a subject, Louise, who would orally answer questions put to her mentally while in a hypnotic trance. He once mentally suggested to her that she would see her black hat changed into a red one on awakening. When she was awake she denied that the hat was hers because it was red. She thought a joke had been played on her and insisted that her hat be returned. The hallucination was banished and her property restored by another suggestion.

Or the posthypnotic suggestion may be one that makes the subject sensitive to receiving telepathic suggestions while awake. Levinson instructed a deeply hypnotized subject that on awakening she would be given a telepathic instruction to get some object in the room and bring it to him. He then awakened her and she remained in her chair as they chatted. But during their conversation Levinson began concentrating on the object he had selected, a flashlight on his desk, and she fell quiet. Saying nothing, she got up, crossed the room to his desk, picked up the flashlight, and brought it to him without hesitation. Levinson pretended surprise, however, and refused to accept it. He had not asked for it, he told her, and added that since it was daylight he obviously had no need of it. She seemed to realize she had done something foolish and replaced it on his desk.

After she had returned to her chair and resumed the conversation, Levinson again concentrated on the posthypnotic suggestion. Immediately she became tense, got up, and went for the flashlight a second time. Again he refused it and asked why she thought he wanted a flashlight. She had no answer. She was clearly puzzled by this telepathic perfidy, but it did not enter her conscious awareness. Vexed, she returned the flashlight to his desk and slammed it down angrily. He was curious to know if the posthypnotic suggestion would become conscious, perhaps through frustration, if he persisted in refusing the flashlight. He concentrated on it for the third time. Again she brought it to him and said hotly, 'I just can't seem to get away from this flashlight.' Levinson, relenting, finally accepted it and explained what had happened.

Because the unconscious seems to notice telepathic

messages even if consciousness does not, and the hypnotic state is itself produced by the unconscious, an obvious step is the induction of hypnosis by telepathic suggestion. That was accomplished, as usual, by the early magnetizers – Puységur said that he had done it successfully. And another early magnetizer, Arnold Wienholt of Bremen, magnetized a patient of his from a distance several times when the patient had no means of knowing he intended it. A number of experiments were carried out under his direction at varying distances; all were successful. And in 1825 Du Potet and Huson, a member of the French Academy of Medicine, performed experiments in which they telepathically induced somnambulism in an unaware subject. Later, in the 1840s, Thompson reported hypnotizing subjects when they had no idea he intended it and then causing them to perform specific acts, while he was in another room, through mental suggestion.

The redoubtable Esdaile was also to perform experiments in what is now called telepathic hypnotism. 'I had been looking for a blind man on whom to test the imagination theory,' Esdaile wrote, 'and one at last presented himself. This man became so susceptible that, by making him the object of my attention, I could entrance him in whatever occupation he was engaged, and at any distance within the hospital enclosure.' On the first attempt the blind man was having dinner alone. Esdaile, some sixty feet away, gazed at him over a wall: 'He gradually ceased to eat, and in a quarter of an hour was profoundly entranced and cataleptic.' Esdaile repeated the experiment at the most untimely hours, when his subject could not possibly have known he was about, and always with the same results. But is it medically useful?

In the 1880s Dufay was treating a woman for headache. When the usual remedies failed he tried magnetism and five minutes later the pain was gone. Dufay continued to treat her attacks with magnetism, but at the height of one of them he was with another patient and unable to see her for several hours. Deciding to try suggestion at a distance, he told the patient's husband, who had been sent for him, that his wife would be asleep and well when he returned home. Later he called at her home, on the pretext that he had left an instrument there, to find she had fallen 'asleep' at the time of

his attempt and could not be awakened. Although Dufay didn't intend to tell her of his experiment, she recognized that it was he who had entranced her.

While Dufay was on a long holiday at a place some hundred kilometers distant, his patient suffered an attack and her husband notified Dufay by telegram. When the husband returned home from the telegraph office his wife was asleep. Dufay had mentally commanded her to sleep and not to awaken until four o'clock. He later received a telegram of thanks saying that his patient had awakened at four.

Successful experiments in telepathic hypnotism were conducted elsewhere, but they appear to have held a particular fascination for the French, and many investigators made their contributions – Dusart, Boirac, Héricourt, Gibotteau. And some of the best and most extensively documented experiments in telepathic hypnotism were conducted by scientists of the first water. Pierre Janet contributed two papers in 1886 on his investigations in collaboration with J.H.A. Gibert. Their subject, Léonie, was a remarkable somnambulist who was often hypnotized at a distance by mental suggestion. Léonie had 'natural' fits of somnambulism in her youth and had been a magnetic subject for many years. She was not, however, always complaisant; recognizing that someone was attempting to entrance her, she discovered tricks to prevent herself from succumbing. Once Gibert attemped to hypnotize her from a distance of a half mile and Janet found her awake. She knew very well that Gibert had tried to hypnotize her and balked him by putting her hands in a basin of water.

In the following year Janet and Gibert conducted further experiments with Léonie in which they were joined by a number of other investigators, including F.W.H. Myers, who coined the word 'telepathy.' Myers reported one of their experiments in which Gibert entranced Léonie from his home and summoned her to come to him. Four of the experimenters discreetly observed her unsteady progress from the rue de la Ferme to the rue Séry and Gibert's home. She entered and rushed from room to room in a somnambulistic trance until Gibert awakened her. They attempted twenty-two such experiments; six were failures and sixteen were successful. All incomplete trials were regarded as

failures as well as attempts in which trance did not occur within fifteen minutes. In certain trials posthypnotic suggestions were given mentally and carried out, such as taking a lamp into another room and lighting it during the day.

Léonie continued to be the subject of these experiments. Nobel Laureate Charles Richet in 1888 reported his work with her in which he telepathically entranced her at a distance in sixteen out of twenty attempts. His experiments were also witnessed by others who had no knowledge of when they were to occur.

But as the twentieth century rolled into the frenetic twenties and *la belle époque* became a memory, telepathic hypnotism disappeared from France and the West. Although the experiments were of extraordinary psychological interest, the Age of the Rat had arrived in progressive nations. Did the infant science of psychology turn to tiny rodents as a meet challenge to its skills? Yet the experiments were not abandoned by scientists everywhere. For unaccountable reasons the Russians picked up where the French left off, and telepathic hypnotism has held a prominent place in twentieth-century Russian research. Perhaps the reason lay in the Russian habit of imitating the French, a habit that outlasted the Tsars and will probably outlast the Bolsheviki.

However uncongenial Siberian air may be for a Gallic vine, there is no gainsaying that Russians carried the experiments further than anyone before them, and with such originality they merit a close look. L.L. Vasiliev chose telepathic hypnotism as the easiest means of experimenting with telepathy. That is, instead of a percipient's correctly 'guessing' the symbols on Zener cards some statistically significant number of times, he simply receives the command 'Sleep!'

Certainly that approach lends itself to dramatic experiments. A girl dancing a lively waltz abruptly stopped in midstep – she was telepathically hypnotized by K.I. Platonov. Platonov conducted a number of these experiments and reported several that were carried out in 1924 before a Soviet psychoneurology convention in Leningrad. The subject sat at the presidential table, opposite V.M. Bekhterev, one of the founding fathers of behaviorism; Platonov sat in a closed cabinet. On receiving Bekhterev's signal, Platonov began

concentrating. The subject was talking to V.M. Gerver, but she soon fell silent – entranced – in the middle of a sentence. She could be hypnotized at a considerable distance from Platonov, even when she was in another building, and regardless of what she was doing. Platonov emphasized that she was entirely unaware of the nature of the experiments and that they were performed without her knowledge or any preliminary conversation on the matter; she had not the least idea why she fell 'asleep' at such odd times. Bekhterev and Vasiliev successfully repeated Platonov's experiments with her.

Platonov also reported an arresting experiment he performed in collaboration with A.V. Dzhelikhovsky, professor of physics at Kharkov University, and R.P. Normak, a chemist. The subject was a young student at the university who was in excellent health and a 'perfect somnambulist.' The experimenters asked her permission to use her as an experimental subject. She readily agreed, but was given no hint of what the experiments would be, or when or where they would take place. And while she waited notification that they would begin, she was repeatedly hypnotized by mental suggestion. She remembered nothing of what happened while entranced; indeed, she was unaware she had ever been entranced. On one occasion she fell into a trance while standing and holding a test tube containing a preparation that Dzhelikhovsky had been showing her. When awakened, she continued to examine it as though nothing had happened and resumed speaking to the professor at the point her thought had been interrupted by hypnosis. She asked several times when the experiments were to begin, but they dissembled that she must wait a little longer because some necessary apparatus was not ready. From the beginning of the experiments to the end, she did not know their nature or that they had been performed.

They also investigated telepathic control in addition to telepathic trance induction, as in the experiments with Léonie. While Platonov was in his own apartment he commanded the subject to go to Normak's laboratory at a time prearranged by the experimenters. When asked why she came, she usually answered, with embarrassment, 'I don't know . . . I just did.' Thirty of these experiments were

performed and all were successful. But such sensitive subjects are a rarity. Platonov said that only 10 or 12 out of the 300 with whom he worked were able to demonstrate telepathic hypnotism with any regularity. These figures, perhaps by chance, are very close to the estimates of the frequency of natural somnambulists. Although subjects as sensitive as these may be rare from the point of view of scientists looking for subjects, 3 or 4 percent of the population is still an enormous number of people.

Another researcher, I.F. Tomashevsky, reported experiments with V. Krot, a peasant woman in her twenties who was an excellent subject. He was able to hypnotize her from a different room or building at the most inopportune times, while walking or talking, for example. Like the Kharkov student, she was completely amnesic after awakening and didn't recall being entranced. And in these experiments the subject's only hypnotic experience was through telepathic induction; she had never been hypnotized in the ordinary oral way.

Tomashevsky joined Vasiliev and Dubrovsky in a careful study beginning in 1933 with, principally, two excellent subjects, Ivanova and Fedorova, both hysteria patients. They found their subjects would become entranced within one to five minutes after mental suggestion began, remain entranced up to an hour or more, and awaken within one to three minutes after the mental suggestion to awaken – generally without being aware they had been hypnotized. Some of these experiments were conducted over long distances, most notably between Leningrad and Sebastopol. In Leningrad Ivanova would become entranced, in the presence of observers who didn't know the plan, at the precise time Tomashevsky began mental suggestion in Sebastopol.

Vasiliev found it was unnecessary for the agent to know where the subject was or in what direction, but it was vital for him to know his identity. He also discovered the best results were obtained when the agent strongly visualized an image of the subject in addition to concentrating on the suggestions he wished to make. Vasiliev's findings are again in agreement with those obtained by Western scientists in a variety of studies that also stressed the importance of imagination and visualization.

Although the West has ignored telepathic hypnotism for many years, signs are appearing of a renewed interest in it. An isolated case is reported now and then and one noteworthy experiment has been conducted. One of the isolated cases was reported by Reginald Weiler, a psychotherapist. He was treating a patient, described as an intelligent, well-educated professional woman, for a severe conversion reaction. During the midpoint of her treatment she needed extensive dental surgery, but was terrified at the thought of a needle puncture. Weiler offered to substitute hypnotic analgesia for the needle. She accepted, proved to be a very good subject, and became somnambulistic in two sessions. The hypnotic analgesia was successful during surgery and the postoperative period.

Eight months later she developed insomnia and Weiler decided to try helping her to sleep by telepathic hypnotism. At 2 a.m. he began to mentally recapitulate his previous induction procedure, including its automatic trance-inducing signal. The following noon he received a telephone call from her. She told him that she had had 'the queerest feeling' the previous night but then fell asleep and, for the first time in weeks, did not awaken until morning. 'It seems like I had a dream,' she said, 'in which I felt your hand on my forehead, just like you used to when you put me to sleep with hypnosis.'

Five months later he made another attempt at mental suggestion – this time with no excuse except scientific curiosity. Just before midnight he went through the induction in his mind, visualized placing his hand on her forehead, and mentally suggested that she awaken at 7 a.m. That night she dreamed that she felt his presence and the warm palm on her forehead. She was late for work the following morning because she slept through the alarm and awoke at 7 o'clock, although for ten years she had set her alarm for 6 and had never once slept through it, regardless of how little sleep she might have had.

Apart from a few isolated cases, however, the first and so far only substantial study of telepathic hypnotism in the West in this century was conducted by Lee Schaefer at Northwestern Illinois University in Chicago. Her work is notable not only because it confirmed previous European and Russian

findings, but also because it was a venturesome departure from them. Unlike earlier investigators, who had concentrated their attentions on a very few highly susceptible subjects, often hysterics, Schaefer's subjects were ordinary people without obvious illness. And instead of working with one subject at a time, she worked with as many as a dozen during a single session.

Schaefer selected eighty-two subjects, not counting controls, who were easily hypnotized: an assortment of students, housewives, and a professor. Beginning in 1972, she held twenty-five sessions involving 191 trials in which three hypnotists took part. Each subject was initially hypnotized and given the posthypnotic suggestion that when the hypnotist later thought of him he would reenter a hypnotic trance. Each subject also chose a key word the hypnotist would think of while mentally suggesting sleep.

The subjects for each session, an average of six, occupied a room with two experimenters who monitored the session, testing subjects who became entranced and noting the times they entered trance. The monitors did not know which of the subjects were to be selected for mental suggestion or the times it would occur. An effort was made to keep the subjects awake and alert by talking to them, by holding stimulating lectures or lively discussions, or by allowing them to watch an entertaining television program. The hypnotist, in an adjoining room with an experimenter, could see the subjects through a one-way glass, but didn't know which of them were to be targets for the session; these were randomly selected by the experimenter in the hypnotist's room just before mental suggestion began.

In her work, as in Vasiliev's, if the attempt succeeded, it usually followed mental suggestion within five minutes. And she found that 20.7 percent of the subjects were hypnotized through telepathy – a figure very close to the percentage of the population that can achieve a deep trance. Because American scientists would seem to be uncertain whether the sun was shining unless they knew its statistical probability, Schaefer meticulously went through the ceremony of providing it. (For those who become anxious without these things, the odds that all her subjects fell into trance by coincidence

are 1 in 3.21 x 10^{29} – the last number being somewhat larger than the radius of the universe measured in centimeters.)

Although 20.7 percent entered trance through mental suggestion, 34 percent got the message but were either unaffected by it or actively resisted succumbing. One subject attended the sessions with no other purpose than to see if he could block the hypnotists' efforts. 'He would begin to fall into trance when one of the hypnotists was thinking about him, catch himself, and begin talking animatedly to his neighbor, or get up and walk around the room.' Of course people differed in this experiment as they always do, hypnotists as well as subjects. One of the hypnotists was far more successful (more powerful?) than the others and, in terms of probabilities, by many orders of magnitude. Of the subjects, Schaefer found only four who became entranced reliably on mental command, a figure close to the success rate reported by Platonov. And she estimated that if subjects were completely unwilling and unknowing, with no previous trance experience, a success rate of 5 percent is probably the most that could be expected. But she warned:

> It would be naive of us to assume that control via telepathy has never been considered by someone, somewhere. Even if only 5 percent of the population is susceptible to hypnosis via telepathy, that 5 percent could be dangerous.

The experiments in telepathic hypnotism reported here were conducted while the subjects were alert and active. What if they were asleep or in another state of heightened suggestibility? What if the hypnotist spent not just a few minutes attempting mental suggestion, but hours, days, or weeks? And what if the hypnotist was a star motivated not by scientific curiosity, but by a powerful wish? What then?

Jule Eisenbud observed that the circumstance that a person can mentally influence not just the thoughts or dreams of other people at great distances but also their actions, 'must be one of the oldest "facts of nature" known to man.' Having successfully attempted suggestion at a distance with several of his patients, he was moved to say,

> It is time we rescued this and other nonstatistically

> straitjacketed aspects of psi from their status of isolated curiosities . . . and forthrightly thrust them as powerful conceptual weapons into the battles that rage on the broad turbulent fronts of life and science.

He is entirely correct. But they are more than conceptual weapons.

We have seen that the unconscious, the chthonic mind, forgets nothing, can operate like a computer, and creates the image of the world, of reality, that it projects into consciousness. It is an artist, dramatist, inventor, joker, and scientist. In its depths the most sophisticated reasoning processes live in amity with primary process thinking, myth and symbol. But it regrettably behaves as though unconcerned with conscious wishes or even with the body it is believed to inhabit.

In psychosomatic illness, biofeedback, the placebo effect, and miraculous cures, we have evidence that the chthonic mind is the master of both the body and consciousness. It may inflict skin diseases, baldness, allergies, frigidity, impotence, sterility, abortion – and dry up milk; when more irate, it may inflict duodenal ulcers, colitis, psychosis, asthma, arthritis, and blindness; when thoroughly annoyed, it can inflict death. Yet the chthonic mind may heal with equal facility and contribute to the healing of illnesses that it, perhaps, had no hand in bringing about. It has the power to melt the tumors of a moribund cancer victim before one's eyes or kill in moments without bothering with a physical cause. We have no idea how the chthonic mind does these things. We know only that it can.

We have seen that an entranced subject's unconscious may attend to the suggestions of the hypnotist who may then coax it to produce hallucinations, blisters, blood – or to cure Brocq's disease. The entire range of phenomena governed by the unconscious can, in principle, be made obedient to the hypnotist's will. And contrary to common opinion, it was shown that people may be entranced without their knowledge and against their will, and that they could even be compelled to commit crimes, including murder and suicide. These extreme results *may* be rare and difficult to bring about, but the

point is simply that they are possible. When one is able to communicate with another's unconscious, with its controller, he may then enlist its aid in carrying out his wishes for the other's benefit or annoyance.

Finally we saw that it is possible for one person to communicate with another's unconscious telepathically and over great distances. That means, and the evidence confirms, that it is possible for one person surreptitiously to command the powers of another's unconscious. The evidence accumulated from many nations over nearly two centuries of investigation by numerous scientists, many among the most illustrious mankind has produced, has converged on the inescapable conclusion that the mind and will of one person can influence another's unconscious. Yet when one person can through his mind alone seek out another, wherever he may be or in whatever impregnable fortress, and strike him blind, sterile, lame – or dead – that is clearly and unequivocally black sorcery, malevolent witchcraft.

That *is* magic.

It is magic as it has been recognized by all peoples in all times. Current scientific verbal fashions could have been honored and, instead of 'sorcery,' the phenomena could have been called 'intentionally induced telesomatic reactions' or the like. But such convoluted academic whim-wham masks the savor of the truth and its interesting implications from the public. For its full flavor to be appreciated, no other term will do. And should any small doubt remain that we are in fact dealing with sorcery and nothing else, following chapters will dispel it.

Sorcery is alive today and thrives as well in the seemingly uncongenial ambiance of scientific laboratories as it does amongst Yaqui *brujos* or those who gather on the moors when the moon is full. And why not? Sorcery is not a rogue in the Western scheme of reality; and had no conception of it ever existed, it could now be derived from the scientific literature.

The data we have examined are certainly well known to many scholars and scientific specialists whose business it is to know these things, and they have long acknowledged the reality of sorcery. In 1911 W.Y. Evans-Wentz wrote:

> To our mind, sympathetic and imitative magic, *when genuine*, in their varied aspects are directly dependent upon hypnotic states, upon telepathy, mind-reading, mental suggestion, association of ideas and similar processes; in short, are due to the operation of mind on mind and will on will, and, moreover, are recognized by primitive races to have this fundamental character.

Evans-Wentz was unusual for his day in using 'magic' without evasion. Scientists may sometimes discuss certain aspects of sorcery under other names, such as 'psychic healing,' but an implicit conspiracy has forbidden the use of 'sorcery' when dealing with phenomena that could give the word substance. Their reticence is primarily a response to the word 'sorcery' and its kindred and not necessarily to sorcery itself. Scientists no less than others shudder at words and grapple for euphemisms.

Sorcery, of course, as any savage will tell you, may be used for unfriendly nastiness as easily as for healing or other amiable purposes. That has provoked some scientists who study psi to ignore its mischievous potential – or even deny it – to evade the 'taint' of sorcery that would otherwise be obvious. Louisa Rhine replied to a young girl's letter: 'No Nancy, ESP could not possibly be used to hurt anyone physically or mentally.' And she added, 'Both magic and witchcraft are long-outdated concepts.' But without realizing it, she contradicted herself:

> Another irony too, involving ancient topics like magic, witchcraft, and possession is that their resurrection today brings out a fact long unsuspected. It was a reality that people in nonscientific ages struggled with. They did not understand it. They misinterpreted it. *But they knew it.* They can now be seen as testimony to the psi ability.

That psi cannot be used for mischief is a tale fit for the ears of children. One is reminded of those who thought X-rays were harmless and useful only for such beneficial purposes as burning out tonsils. Perhaps she thinks a percipient is insulated from harmful telepathy because, in her view, he is chiefly responsible for telepathic exchanges. And psi may

ignite signal flares to guide us or fireworks to amuse us, but never bombs. Most scientists do not share her opinion.

Ehrenwald doesn't. He wrote that 'psi phenomena are in effect derivatives of magic that have been dehydrated, deboned, and filleted to make them digestible for scientific consumption.' He added that parapsychology is a 'radically revised, refined, and expurgated version of magic.' Although sorcery draws its explanatory data from many fields besides parapsychology – psychosomatic medicine, physiology, neurology, and psychology, to mention a few – Ehrenwald's remarks may explain why parapsychologists have been especially allergic to the word 'sorcery' and have carefully avoided, at least until recently, any hint that psi may have unsavory applications. Jule Eisenbud commented on the oddity that parapsychology strives to 'dissociate itself from the ultimate implications of its data.' He noted:

> It is significant that in a several-day-long conference not long ago on parapsychological factors in 'unorthodox' healings not one word was mentioned of the possibility, accepted by common folk of all times and places, that these factors might also operate in the opposite direction.

He avoided the tabooed words, but his meaning is clear without them.

These strictures are nevertheless losing their force, and increasing numbers of responsible scientists are acknowledging the dark face of psi, which we must if we are to take our subject at all seriously. Edgar Mitchell, the scientist-astronaut who walked on the moon, said that 'psychic energy – like atomic energy – can be applied in both creative and destructive ways.' And he warned that one of the worst uses of psi 'would be for "programming" people through nonconscious telepathic suggestion.' Mitchell looked at only the negative aspects of telepathic suggestion. Stanely Krippner saw it as neutral: 'If you can use psychic energy to heal someone,' he said, 'then you can also use it to hurt someone.' And another investigator, Laurence LeShan, cautiously remarked: 'Electricity is neutral, it can be used to help or kill. So too, it seems to me, are the rest of the energies of the universe.' But a few years later he moved closer to the facts

and further from the taboos, despite the quotation marks, when he said, 'Whether or not the reverse of such healing, "cursing," also occurs is not clear, but [it seems] at this point in our understanding, theoretically to be possible.' But it is more than theoretical.

One hardy scientist has stated the issue without the least evasion. Alan Watson, senior lecturer in forensic medicine at the University of Glasgow, served in an African jungle hospital in Zaire. While there he witnessed an average of one death every three months by cursing and said that many more died of curses in the villages and forest. And he added that even those who professed disbelief in the death curse fell victim. Watson commented that 'death by curse' is a phrase that will never be found on a death certificate in the civilized world, but he would like to see many 'so-called unexplained deaths studied with such a possibility in mind.' (There are many thousands each year.) Watson's recommendation reveals his suspicion that some people in civilized lands know and practice malevolent sorcery. His suspicions would no doubt stimulate a little public interest if they were more widely known, but they were published in *Medicine, Science and the Law* – hardly an organ of mass enlightenment.

Yet even those scientists who more or less openly concede the reality of sorcery in their writings seldom devote more than a cursory sentence to it. That is rather like a scientist of the 1930s writing at length on the wonderful uses of radioactivity, from illuminating watch dials to revealing internal organs, casually mentioning that a few pounds of a uranium isotope could shatter a city.

That is beginning to dawn on the specialists. During an unofficial discussion at a parapsychological convention in 1972, scientists were considering the possible destructive uses of psi. J.H. Rush, a University of Colorado physicist who participated in early atomic research, likened the crisis they posed to that posed by the atomic bomb. Alan Vaughan reported, 'There was a general uneasiness that one day the question must be faced, and we had best give some thought to it.' That day is here.

Although its antisocial uses should not be ignored, sorcery is

far more often used for beneficial purposes. C. Norman Shealy reported a few cases of ordinary sorcery (though he didn't call it that) that took place at his clinic. In his breezy account of unconventional medicine, he described the work of a 'psychic,' Henry Rucker, whom he occasionally calls in to treat patients – his son among them. Shealy's son had had three warts on his hand for six years that had foiled the best efforts of an excellent dermatologist. But 'Henry Rucker just sort of waved his hand at them,' Shealy wrote, 'and said they would be gone in three weeks – and they were.' Warts, of course, may yield to almost any medicine or charm – except, in this case, the dermatologist's. A pedestrian example of sorcery? Perhaps, but Rucker can do more.

Shealy discussed the injury of a four-year-old girl who had fallen and fractured her skull three years earlier. Almost always, Shealy noted, the fracture closes and heals. But in the girl's case the hole had grown despite three operations to close it. Already an inch wide by three inches long, it continued enlarging as the brain pushed through. Another neurosurgeon had advised a fourth operation because he thought that after such a lapse of time it would be nearly impossible for the hole to be closed in any other way. Shealy, however, recommended they try Henry Rucker since they had nothing to lose. 'Henry simply took a *photo* of the child I brought him,' Shealy said, 'waved his hands around it and mumbled some words I couldn't understand.' Within three weeks bone began growing about the edges of the hole. Rucker repeated his 'treatment' of the child – this time in person, but with the same technique – and said she would be well in six months. And six months later the hole was entirely covered with new bone.

Rucker's procedure would be instantly recognized by any sorcerer from any time or place, though the primitive sorcerer might envy the decided convenience of photography enjoyed by his civilized counterpart. We think we understand the general principles involved in Rucker's healing spell (we shall shortly learn some of the particulars) and sorcery does not, perhaps, seem as mysterious now, or at least no more so than the rest of this mysterious world, but it remains magic nonetheless. Yet sorcery is neutral. If Rucker could close a

hole in a little girl's head, is it inconceivable that he could have enlarged it?

Rucker's activities and the direct experimental evidence of scientists such as Richet, Barrett, Janet, and Vasiliev have demonstrated that sorcery is possible. But how often is it successful? Science cannot say. How frequently is it practiced? No one knows. It can only be said that *some* people, on *some* occasions, can enchant certain others; and that a person with a great talent may, under the most favorable circumstances – in theory – produce in a highly susceptible subject the entire ran of mental, psychosomatic, and hypnotic phenomena discussed in previous chapters. The sorcerer may heal or kill, remove warts or dry up milk, or he may 'cast the glamour' on his victims through delusions and hallucinations, perhaps sending the vicious kin of Estabrooks's pet bear to snap at them. In fact, whatever can happen spontaneously in the human mind or body, whatever can be brought about by hypnotism, biofeedback, or placebos, can in principle be accomplished by sorcery. If Brown thinks biofeedback may eliminate disease and aging, so may sorcery, both ultimately touch the same areas of the psyche.

Chapter 7

A scientific grimoire

Want to make a girl dance in the nude? The *Grimorium Verum*, a fifteenth-century magical text, purports to tell one how to perform that party-stopping practical joke. The sorcerer need merely write – in bat's blood, of course – the sign of the demon Frutimière on a piece of virgin parchment. He then puts it on a blessed stone over which a Mass has been said, and it is ready for use. Later, when in a puckish mood, he puts it under the threshold of a door where the butt of his humor must pass. She will enter, undress, and dance naked for as long as it amuses the sorcerer. The spell, to be sure, has its less humorous side; according to the book she will dance until she dies if the parchment isn't removed from its place.

Books such as the *Grimorium Verum*, the so-called grimoires, are little more than historical curiosities today, but the questions they pretended to answer still remain: How does one cast a spell? What are the practical details? This chapter will attempt to supply answers to some of these questions by briefly examining the scientific evidence bearing on the techniques of sorcery. That evidence, as might be expected, will have little to do with the rarities that allegedly delighted sorcerers of old – unicorn horn, bat's blood, moss from a felon's skull, virgins. But we shall manage quite well without them.

Before discussing spells themselves, however, we must begin with the people for whom they are intended. After all, patients should be examined before their treatment is considered. And the first logical question is, How many people are susceptible to sorcery? We know that telepathic hypnotism is

clearly sorcery by any definition, and a rather extreme form of it at that. Yet we saw that about 30 percent of subjects received the mental suggestion, 20 percent were susceptible to becoming entranced by it, and about 5 percent were highly susceptible, entering trance swiftly and reliably on mental command. The figures on telepathic hypnotism, on the other hand, are necessarily conservative when applied to sorcery in general because they were derived from experiments with subjects in their ordinary waking state, alert and active. And again we must ask the questions: What if the subjects were in a state of heightened suggestibility, injured or perhaps sleeping? What if the hypnotist did not spend just a few minutes attempting mental suggestion, but hours, days, or even weeks? And what if the hypnotist were motivated not by scientific curiosity but by a powerful wish? The sorcerer is likely to be such a 'hypnotist.' The sorcerer, of course, seldom needs subjects so extremely susceptible as to permit them to be telepathically entranced in minutes; ordinarily he needs only to plant a single suggestion in the subject's unconscious where it may then grow in its own time – a far less challenging task.

These considerations lead us to suspect there are probably as many good sorcery subjects as there are good hypnotic subjects or good placebo reactors; that is, about 30 percent of the population. A good sorcery subject, by analogy with hypnotic subjects, would be one with whom a sorcerer of average competence could secure satisfactory results with modest effort. And if hypnotism provides any model, we may expect sorcery to be more or less effective with most people, depending on the sorcerer's talent, technique, and persistence. A few may remain strongly resistant, no doubt, but at the other end of the scale are a few, perhaps 4 or 5 percent, so highly susceptible that extreme results may be brought about with little effort.

These estimates say nothing about which individuals are susceptible to sorcery. Talented psychics or high-scoring percipients in telepathy experiments appear obvious candidates at first, but they excel at consciously recognizing a telepathic message and not necessarily at receiving it on an unconscious level, at which experiments have shown the

average person differs very little from the sensitive psychic. And that is the only level of concern to sorcery. The psychic, on the other hand, may be more likely to know that someone (and perhaps who) is trying to influence him.

Because suggestion very likely plays an important role in sorcery, we presume the more suggestible a person is the more apt he is to be susceptible to sorcery. Certainly those susceptible to telepathic hypnotism are. But who are good hypnotic subjects? The answer to that question is not as complete as we should like, but there are clues. Mentally retarded people, obsessive-compulsive neurotics, and psychotics are usually considered poor subjects, but epileptics are often highly suggestible, as are hysterics such as Léonie, Federova, and Ivanova – sufficiently so for Charcot to have regarded a hypnotic trance as a hysterical symptom. And the hysterical symptoms of amnesia and sleepwalking may also reflect marked suggestibility. Ethnic differences may exist as well. Esdaile thought Indians were unusually susceptible to magnetism, and various primitive peoples are highly vulnerable to trance states such as *lata*.

Overall, men and women are thought to differ little in suggestibility, but we may suspect that the most exceptional subjects are women because they outnumber men five or six to one as conversion patients and to a far greater extent as stigmatics. And it may be that people are more suggestible who have personality characteristics associated with hysterical disorders, such as naiveté, moodiness, oversensitivity, coquettishness, egoism, petulance, and emotional histrionics. But of course they constitute only a small minority of the good hypnotic subjects, who are seldom neurotic. In fact, as Sargant points out, the stage hypnotist will look for his best subjects among the normal, healthy extroverts. Good hypnotic subjects are apt to be more creative and spatially oriented, and capable of vivid imagery. Also more suggestible are those reared in authoritarian homes and those who have attended church regularly since childhood. Because these latter characteristics were more typical of our forebears, we may suppose a high degree of suggestibility was once even more common than it is today.

Sheryl Wilson and Theodore Barber at Cushing Hospital in

Framingham, Massachusetts, investigated the characteristics of the most highly suggestible people (a group they found to represent about 4 percent of the 900 college students and medical professionals with whom they conducted routine tests of hypnotic suggestibility). Compared with controls, who were only good to fair hypnotic subjects, those in the 4 percent group were able, at the merest hypnotic suggestion, to experience almost instantly vivid hallucinations and other deep trance phenomena. Wilson and Barber found these subjects appeared to have the ability to remember their lives in remarkable detail, even back to infancy. And they not only recalled their pasts, but appeared to relive former sensations and feelings. All were 'fantasy addicts' from an early age on and most had imaginary companions as children. Nearly all spent more than half their time in fantasy, and the majority spent at least 90 percent of their time in it. Their fantasies were sufficiently realistic for the 'real' world to fade. How realistic? Nearly three-fourths said they had orgasms solely through these mental adventures. If we recall the behavior of a monkey allowed to stimulate an electrode implanted in its brain's pleasure center, we are not likely to be surprised that their addiction consumes most of their time.

The finding that the more suggestible people are also more creative and spatially oriented, and better able to visualize clearly, intimates hypnosis may especially concern the brain's right hemisphere. And some evidence has accumulated that people with a dominant right hemisphere actually are more suggestible. In addition to other characteristics, people with a dominant right hemisphere may be identified, if right-handed, by the habit of turning their eyes to the left when answering questions face to face.

Children below the age of six are difficult to hypnotize by ordinary techniques, presumably because their verbal skills are limited, but nearly all may be easily hypnotized thereafter until age fourteen – with more than half becoming somnambulists. Even young children, on the other hand, may be susceptible to magnetic techniques. Liébeault successfully treated children less than thirty months of age with magnetism; they were sometimes asleep and gave no indication they understood what he was doing. But after the age of fourteen,

with ordinary hypnotism, children's suggestibility slowly approaches adult norms. Here we are reminded that folklore held children to be especially vulnerable to spells.

It was once thought that only those who believed in spells could be affected by them. But we have seen that a person's beliefs or expectations may have nothing to do with the response to a placebo. And we saw that a person who believes he cannot be hypnotized may be all the more susceptible for his skepticism. Similarly, we saw that in faith healing the healer's belief was usually more important than the patient's – skeptics are as readily healed as others. There is thus no reason to suppose a person who does not believe in spells is less vulnerable than others. Recall that Watson said even disbelievers in death curses died from them.

Suggestibility is not a constant, of course, but varies with circumstances. We know that people are likely to be highly suggestible when injured, anesthetized, frightened, badly confused, or asleep. Sleeping subjects, in the experiment reported by Evans, were given whispered suggestions, without disturbing the brain waves indicative of quiet sleep, to which they responded for as long as five months. We also saw that in rem sleep telepathy could infiltrate dreams. Although we do not know whether rem sleep particularly enhances the reception of telepathic signals, as compared with other phases of sleep, or merely fosters their recognition through dreams, we do know it is the phase of sleep in which a sleeper is most oblivious to sensory stimuli and, for that reason, may be more open to telepathic signals. If rem sleep does improve telepathic perception by the unconscious, children should again be especially affected. Infants spend about 50 percent of their sleep in rem sleep, which declines to about 20 percent at adolescence.

Perhaps folklore had a reason for asserting that sorcerers were more apt to be active during those late hours when all others slept – not because sun-fearing devils became livelier at night, but because their subjects became more responsive. A spell, no less than a drug, may be more powerful at different times of the day.

There may also be times when people are more amenable to a telepathic influence of some specific kind. The malicious

sorcerer who wishes an enemy to have, say, an accident might choose a time for his effort when accidents and mental disturbances are more common – perhaps when there are solar flares, the moon is full, and a witch wind blows; or, less cosmically, during the time his victim, if female, suffers premenstrual tension. And an 'accident' spell has a better chance of succeeding if it is directed against someone who has already shown a tendency towards accident-proneness. Only an energetic sorcerer tries to swim upstream.

Finally, sorcerers do not enchant people with whom they have no connection at all. An agent and percipient must have some sort of relationship, direct or indirect. Recall that Osis found that partners in a telepathic exchange must have met or corresponded or talked on the telephone, or must at least have an acquaintance in common.

Caruso could allegedly shatter a wineglass with his voice, which was preternaturally powerful as well as trained and honed by constant practice. Every sphere of human activity seems to find its Carusos, those who excel to such an extent that they appear qualitatively different from humanity at large. We have seen that some hypnotists in experiments with telepathic hypnotism are far, far more successful than others, and Rhine noted that some agents in telepathy experiments can succeed with percipients who otherwise perform poorly, seemingly because of their superior ability to transmit. (Telepathy that appears to depend on the power of the agent to transmit is sometimes called 'kappa telepathy,' and telepathy that depends primarily on the percipient's sensitivity 'gamma telepathy.') If sorcery requires a natural aptitude, as it almost certainly does, it too must have its potential stars (and we shall meet a few candidates later). Perhaps everyone can learn to cast spells, just as nearly everyone can learn to sing. But to shatter a wineglass is quite another matter.

Are there any hints about the characteristics of those with a talent for sorcery? The only clues science offers are drawn from studies of telepathic agents – sorcerers to be sure, but less full-bodied than we should like. Rhine found the best percipients also tended to be the best agents, which suggests that psychic ability may be important. Ullman and Krippner

found that good telepathic agents were also more likely to be interested, motivated, open, confident, and expressive. They were able to concentrate intensely, become emotionally involved, and had some acting ability. And many investigators have emphasized the importance of the agent's ability to visualize with clarity.

Whatever his aptitude, the sorcerer must believe in what he is doing; he must know that it is both possible and, in particular, possible for him. Recall that before Roger Bannister ran the mile in four minutes it was thought impossible; after he succeeded, it became commonplace. People had not changed – only their beliefs. We also saw that if a physician gave a patient what he thought was a potent drug, but was actually a placebo, he might nevertheless get the effects of a potent drug – the Pygmalion effect in medicine. The same force was the ally of the magnetizers who held it was the operator's belief and will that was important, not the subject's.

The needed belief, on the other hand, is actually a composite of beliefs at different levels. To know intellectually that sorcery is possible and to understand something of how and why it works is not enough. It is also necessary to know it in the gut – a very different thing. And the head and gut often disagree. We may know intellectually that an airliner is the safest form of transportation ever devised, but there are many whose viscera remain unconvinced by tricky statistics and, if they fly at all, fly with white knuckles. The luckless traveler may even elect to drive a thousand miles to pacify visceral prejudices, though his head knows that cars are among the most efficient destroyers of life since the black plague.

The intellect may learn, but the viscera can only be conditioned, responding much as did Pavlov's dogs that salivated at the sound of a bell. Many visceral beliefs, especially those acquired early in life, strongly resist change; they ignore the reason and evidence the head finds so persuasive. Untroubled by antinomy, the viscera can comfortably accommodate any number of beliefs that the intellect finds contradictory. If they believe something firmly enough, moreover, a heretical intellect is usually whipped into line. Pascal's lucid mind was so cleared of its rational and scientific furniture by a devout

viscera that he flatly repudiated reason. It is the viscera, through decisions uttered by the heart or the pit of the stomach, that determine what is right or wrong, real or unreal.

If the viscera hold opinions on matters of human performance, emotional and intellectual beliefs must be in accord. Otherwise the aerialist crashes and the sorcerer fails. If the sorcerer finds his visceral beliefs recalcitrant, he must either change or outwit them. Although immune to reason, they can be altered by brainwashing (a misnomer because it's always the viscera that are 'washed'). The practices of some religious cults and prison camps are hardly advisable, but there are techniques people may apply to themselves with minimal discomfort.

The intellect and viscera are not the only arbiters of belief; the chthonic mind will also have its say, and it appears to be beyond either learning or conditioning. The intellect may believe one thing, the viscera another, and the chthonic mind something altogether different.* We are directly aware of the first two belief systems, but the third must be inferred from the way it shapes our behavior. Yet the third is particularly important because the chthonic mind is the arena in which sorcery acts; it contains the processes the sorcerer strives to master. And the sorcerer must operate with its laws – as far as he can know them.

One of the first laws is that of contagion. Anthropologists describe the 'primitive' notion that things once in contact continue to maintain an affinity as the 'law of contagion' and regard it as one of the main pillars of magical thought. But primitive the unconscious is and it does not doubt the law of contagion for a moment. The law slyly molds much of our 'conscious' behavior that even a casual glance shows to be 'unreasonable.' It is the law of contagion that inspires adolescents to tear the clothing off idolized singers, urging them to touch something the singers were in intimate contact with.

*These three 'minds' may correlate to some extent with the so-called triune brain: the neocortex linked to reason, the limbic system linked to emotion, and the ancient reptilian complex linked to neither. It is interesting that the reptilian complex sends signals to the cortex during rem sleep (and perhaps in other altered states of consciousness).

The same motive prompts their wealthier elders to pay huge sums for objects once owned by President Lincoln, Admiral Lord Nelson, or Napoleon. It moves the religious to collect things owned by saints, particularly parts of the saints themselves – bones, blood, fingers – and house them in golden reliquaries as objects of veneration. The law animates governments to preserve and enshrine original buildings, stones, documents, even corpses. It is behind the impulse to collect souvenirs, preserve keepsakes, and buy antiques. It has even produced its own pathology, fetishism, which incites its victims to collect such oddments as women's underpants.

Only the originals will do. A keepsake cannot be replaced; a flower once picked on a memorable occasion, perhaps now pressed between the pages of a book, must be that particular flower and none other. Even the poor fetishist cannot simply buy feminine underpants; to be useful in his solitary delights they must have been worn by a real female and are more exciting if unwashed – a temptation that often provokes police interference. And a forgery of an antique, though superior to its decrepit original, will have nothing of the original's value. The Mona Lisa could be so skillfully forged that not more than a handful of experts with access to laboratories could distinguish the original painting from the fake. Yet the Mona Lisa is a national treasure 'beyond price.' That peculiar veneration of specific objects is wholly illogical and serves no practical or esthetic purpose whatsoever; it is solely a response to the magic of contact.

A lock of hair, a faded flower; the power that consecrated them exerts a magnetic influence. Scientist or savage, we must touch them. It is a human frailty that vexes museum curators and other keepers of expensive souvenirs. Notice the tourist (or pilgrim) at Canterbury who must surreptitiously touch the effigy of the Black Prince. His is not the exploratory behavior of the ape; the touch is light, a caress, and goes beyond the bronze beneath his fingers. We know that his hand has opened a door, ever so slightly, through which he can hear the lilt of Chaucer and smell the air of far-off Aquitaine. That is not reasonable behavior; it could hold no charm for a computer and even animals have more sense. But we would not be human without it. When the law of contagion

makes an object 'beyond price,' we acknowledge in the strongest possible way that that law remains a sturdy pillar of life in the space age.*

The second law of magic, the law of similarity, embodies the idea that an image of a thing is somehow linked to its original. The unconscious has no doubts about that law either, and it finds frequent expression in everyday life. It is not unknown for a girl to sleep with her sweetheart's portrait under her pillow and kiss it if lonely – or smash it if furious. And the number of portraits smashed, trampled, ripped, and burned annually is undoubtedly astonishing. But loftier motives inspire the devout as they pray before painted plaster images. They are not the victims of a confidence trick; the enlightened know quite well the images are nothing more than plaster, but the unconscious persists in believing there is nevertheless some special connection between the images and the objects of their devotions.

Obviously any law worthy of the name will have become an engine of profit, and this one has been exploited to the fullest, as motion pictures attest. A motion picture of a sanguinary axe murder will produce shudders and averted eyes among those who would shudder and avert their eyes at the sight of a genuine murder. Of course those who hanker after the entertainments of the Colosseum will not avert their eyes and may even become bored with ersatz slaughter and seek out 'snuff' films in which real murders are committed. But even these are illusory; it is not the murder itself. Pornographic films likewise depend on the law of similarity. Although the seductive nudes and groaning copulators of cinematic orgies are not real, their effects on voyeurs may be. And at every hand evidence abounds that the law is as sovereign among us as it is among savages.†

*The law of contagion may be 'more' than an associational law of the unconscious; it appears to be a physical law at the atomic level. Experimental verification of Bell's theorem was recently obtained at the University of Paris where it was demonstrated that after two photons are emitted by an atom they continue to have a reciprocal influence despite their separation. A change in one is *instantly* matched by a change in the other regardless of the distance between them.

†Its sovereignty also may be more than psychological. The law appears to be related to or an expression of 'synchronicity,' a term used by Pauli and Jung to describe an

The last law we shall look at is the one that leads primitives to see the world as alive and conscious. A tree, a brook, a mountain, a spear, all may house a spirit, a personality. That is the law of personification. It fills the reservoir from which poets dip when they embody Virtue, Vice, or the faces of Nature. It also animates dancing biscuits, talking tuna eager to be caught by a particular packer, cars that smile as they guzzle a brand of motor oil, and countless other imbecilities on television.

But if our television fails to work, depriving us of dancing biscuits, we are likely to treat it as though it were being mulish and there is an undeniable satisfaction in banging or kicking it (besides, everyone knows electrical devices are better when beaten). And is there anyone so crippled by rationality as not to have cursed his car when it failed to start? It is nevertheless all quite irrational. The 'romantic' might be willing to grant that a tree is inhabited by a dryad who will weep if it is chopped. But a television set? A car? The unconscious does not find it at all foolish – and so we behave the way we do.

These laws do more than stimulate the kinds of 'illogical' behavior discussed above. They emerge in overt magical acts performed by educated Westerners. An investigation of college students in the United States and Ireland found that 70 percent of the 450 students in the study admitted using charms or rituals, especially in uncertain situations such as chemistry examinations. Eighty-two percent were apparently satisfied that their little magics had some effect; the remainder said they thought their magic didn't help, but they used it anyway.

One need not study anthropology, vicariously peering into the quaint beliefs of savage folk, to discover these laws. Bountiful evidence reveals they are obeyed as religiously among civilized people. Though psychologists appear unaccountably to have ignored it, and anthropologists have been too busy pestering people who wear loincloths and tattoo their faces to have noticed it, the spirit of shamanism

acausal ordering principle in nature that relates events through their meanings. Pauli, whose thoughts on the matter cannot be brushed aside, said synchronicity is entirely in accord with modern physics. And the second great law of magic may have its place in physics as well.

percolates through our own culture. Despite an education that seduces the conscious fragment of our minds, the unconscious remembers the old ways and its laws continue to govern our lives. That is why suggestions, telepathic or not, cast in the light of these laws may receive a respectful hearing by the unconscious of the most obstinate skeptic. While he may feel impervious to them, his vaster unconscious, still 'primitive,' will listen.

Because these laws are associational laws of the unconscious, they become valid laws of sorcery. Anthropologists erred in thinking them absurd because, in their view, they were physically irrational. They are impotent only if the chthonic mind is impotent. And that it is not.

The unconscious is addicted to symbols, and thus they become useful tools of sorcery, particularly those that are archetypal. As red is an apt symbol for erotic passion or rage, the *Bolero* may symbolize one emotional state as *Die Walküre* would another. The perfume of roses is also likely to suggest something quite different from the stench of burning sulfur. If the unconscious so often insists on speaking in symbols, perhaps it will listen more attentively if spoken to in the same idiom.

Words are of course symbols, powerful ones. And they may transcend their meanings to stoke fires in the unconscious merely by their sound. Nandor Fodor, a Hungarian psychoanalyst, reported that he was deeply puzzled by the effect Hitler's 'rabble-rousing' voice had on him long after World War II. He listened to Hitler's speeches on two occasions in a broadcasting studio. Owing to its raucous, harsh inflection, Hitler's German was totally incomprehensible to Fodor. But he recalled: 'Slowly, ever so slowly, my blood began to boil, and I wanted to shout and scream. It was not a rage against him. It was *with him*, like a flow of lava is with the volcano.' Although that is a testament to Hitler's oratorical prowess, it reflects a wry emotion for a Jew who hated everything Hitler stood for. But it does signify what a puny barrier the conscious mind and its convictions are to language aimed at the unconscious. Preachers have known that as long as politicians. In the United States, in particular,

one may hear hot gospelers whose 'sermons' deteriorate into howling gibberish as their flocks, with shouted 'Amens,' take leave of whatever senses they came with.

The unconscious is aroused by the sound and rhythm of language and, when it speaks, it tends to speak in verse, as we saw in Patience Worth's first enigmatic words: 'Many moons ago I lived. Again I come. Patience Worth my name.' Although she later became a proser of sorts, poetry was clearly her métier. But unconscious poetry may be seen in its rawest form, verse without meaning, in Christian churches that practice glossolalia, 'speaking in tongues.'

After a rousing, singing church service, a worshiper may be seized by the 'Holy Spirit.' Falling into a trance, he may have convulsions – shake, shiver, perspire, weep – and then begin to speak an 'unknown language.' The meaningless 'words' gush out loudly and clearly in pounding meter, each phrase punctuated with a groan. Jaynes noted that the rhythm and the first rising and then falling intonation at the end of each phrase is like that of the Homeric epics. Goodman did a cross-cultural study of glossolalia and found the same Homeric pattern emerged regardless of the speaker's native language. Whether English, Indonesian, or Mayan, the pattern is the same. It seems fitting that the gods speak poetry and that the unconscious persists in the ancient habit. And what verse better reflects the majestic spaces of the chthonic world than the heroic?

Snyder observed that certain poems have been found to actually induce a trance when read. They have a pattern that is especially soothing and characterized by what he called a 'hypnotic rhythm.' He found that reading iambic pentameters (heroic verse in English) produced such a rhythm. The spacing of the accented beat in that meter is a shade less than a half-second, which is about the metronome setting of two per second that Brown reported as particularly effective in trance induction.

If the unconscious speaks in verse, does it also listen to verse? More particularly, is verse a means to manipulate unconscious processes? Will it enhance telepathy? Experimental evidence indicates that at least its rhythm may. Recall the Toronto study in which rhythmically pulsed

telepathic thoughts evoked responses in the percipient's EEG that were 'similar in form, and comparable in magnitude,' to those evoked by sounds. Puthoff and Targ likewise found that a light rythmically flashed in an agent's face would produce marked changes in the percipient's EEG.

Poetry, like music, is largely a function of the brain's right hemisphere and poetry was sung in early times. Patients who have lost the power of speech because of damage to the brain's left hemisphere, for example, may still be able to sing or recite poetry. And we have seen that hypnosis is also associated with the right hemisphere. The hemisphere's more intimate link with unconscious processes hints that it may have more than a little to do with telepathy, as Ehrenwald asserts. If so, we should expect song to stimulate it, which suggests that sorcerers might profitably investigate, say, plainsong as an adjunct to enchantment. But that is hardly a new discovery; sorcery and song have been related from the beginning, as the derivation of 'enchantment' reveals. We shall see in the next chapter that enchantment, in its more precise meaning, is traditional practice.

We have seen that an agent's ability to visualize has been regarded as important to successful telepathy experiments – that the more vividly the target is visualized the greater the likelihood of success. In reporting his experiments with Dzhelikhovsky and Normak, Kotkov described his method of mental suggestion in which he formed an image of the subject of almost 'hallucinatory intensity' and pictured her as being fast asleep with closed eyes. 'I strongly wished the girl would fall asleep,' he said. 'Finally this wish turned into a certainty that she was now asleep.' Vasiliev also noted that in telepathic hypnotism 'the contents of the transmitted suggestion must be accompanied by a mental image of the person to whom the suggestion is made.' Platonov, who entranced a girl as she was dancing, similarly emphasized that 'verbal' suggestion was not enough. He remarked that a mental command such as 'Sleep!' had no effect. But when he visualized his subject's image, Platonov added, 'the effect was always positive' in susceptible people.

The ideal would appear to be an ability to visualize so

powerful that it produces hallucinatory images. Although various meditation exercises are alleged to improve one's visualization faculties, and they are greatly heightened in some altered states of consciousness, these powers are not easily acquired.* Is there an aid or substitute? Yes, at least in part, and it leads to a practice that, because it is usually misunderstood, appears strange or ridiculous at first sight.

In the previous chapter we saw that some percipients could 'feel' sensations either experienced by the agent or strongly imagined by him, and that in the days of magnetism a few deeply entranced subjects exhibited community of sensation in experiments performed by investigators such as Schrenck-Notzing, Joire, Rochas, Boirac, Janet, and Esdaile. Schrenck-Notzing's subject Lina, for example, could 'taste' or 'smell' what the experimenter tasted or smelled. That was recognized as a telepathic phenomenon: the sensation in the magnetizer's body, or one vividly imagined, becoming a telepathic suggestion for his subject. The magnetizer's body merely served as a kind of diagram to specify where and how the subject would perceive the suggestion. Any other body would do as well. Paul Joire thus 'transferred' a subject's sensibilities to another person instead of himself.

Nor need it be a real human body; any convenient image of a body will serve. When a magnetizer assisted his imagination by the use of some suitable object, it appeared as though the subject's sensibilities had been transferred in some manner to the object. That variant of community of sensation, so-called exteriorization of sensitivity, was explored in a number of studies.

Boirac reported an experiment in which blisters were raised on the skin of a hypnotized subject simply by pricking a photograph of his hands. And Joire published accounts in which a subject's sensibilities were 'transferred' to a lump of putty roughly shaped to represent the subject. When he pricked it the subject felt a corresponding sensation in his body. Joire also 'transferred' the subject's sensibilities to his

*Steven Beyer, for example, noted that Tibetan yogins, for whom visualization is the main task of their magical training, must undergo many years of practice to become proficient at it.

shadow on the wall. Rochas, of the Salpêtrière school, performed similar experiments in the 1890s in which a subject's sensibilities were 'transferred' to a wax doll and again to a photograph. These experiments passed as the older forms of trance induction gave way to present-day techniques, but they have been duplicated in recent times by Jarl Fahler, a Finnish parapsychologist. However, over a ten-year period, in which he worked with hundreds of subjects, he found only one who could exhibit exteriorization of sensitivity.

Wax dolls and photographs, we can now see, are simply aids to visualization; the sensations originate as telepathic suggestions. Mustard put in the mouth of a wax doll should, in a suitably sensitive percipient, be 'tasted' as readily as though it had been placed in the hypnotist's mouth. But an image may be more than an aid to visualization; because of the law of similarity it may also enhance communication with the unconscious. Even so, it must be admitted that experiments in exteriorization of sensitivity exactly resemble ancient image magic in which the cackling old witch of folklore sticks pins in a 'voodoo' doll (one early seventeenth-century witch used an anatomical chart). But if an image is seen as an aid to visualization and a device to stimulate the unconscious, its mystery is eliminated. Henry Rucker had a reason to use a photograph when he treated the little girl who suffered a head injury. The hocus-pocus of sorcery is hocus-pocus only for those who don't know what is going on. The ritual attending surgery would be no less bizarre to our ancestors.

We also saw experimental evidence that when a telepathic agent became emotionally aroused he was more likely to succeed. And success was also augmented when the agent, using as many of the senses as possible, dramatized the theme of the target. Now it is clear why acting ability was observed to be a characteristic of good telepathic agents. Emotion is a powerful force in telepathy, and a good actor is able to summon it, 'to become involved.' Stanislavski saw the essential requirements of acting to be concentration, belief, and imagination. He sought to have the actor train his senses so that he was able to see, hear, touch, taste, and smell the objects of his imaginary world. These are precisely the abilities found to enhance telepathic communication. And the

novice sorcerer, it seems, should add acting to his other studies.

The practice of sorcery will vary from the casual to the elaborate. It may even pass unnoticed, as it did when Captain Chaudhuri drew a circle round a scorpion sting. Or it may be practiced unconsciously by those with a talent for it, like Goethe. He discovered as a young man that when out for a walk he sometimes felt an overwhelming desire to see his ladylove, whoever it was at the time, and before long she would come to wherever he was, moved by an inexplicable impulse to leave home and wander to that particular spot. Goethe, by the by, had the ability to visualize clearly; if he shut his eyes and imagined a rose, he would see it vividly for as long as he wished. Goethe's trysts, however, would be described by primitives as the acts of a natural witch, one whose powers flared up unknowingly.

Goethe's natural witchery threw off only a few amorous sparks, but that of others may be dangerous if the emotion is anger or hate. Eisenbud discussed people, whom he called 'Typhoid Marys' (but perhaps more popularly known as 'Jonahs'), whose unconscious mental rages may affect people about them. He noted there are people whose acquaintances and relatives suffer an unusually large number of illnesses, injuries, and fatal accidents, while the Typhoid Marys, in the midst of all the calamity, remain extraordinarily well and free of mishap.

Mark Twain went a step beyond Goethe. He frequently experienced telepathy (he called it 'mental telegraphy') and was annoyed by one of its specific manifestations, the crossing of letters, so often as 'to become monotonous.' But learning from that nuisance, Twain said,

> Now, when I get tired of waiting upon a man whom I very much wish to hear from, I sit down and *compel* him to write, whether he wants to or not; that is to say, I sit down and write him, and then tear my letter up, satisfied that my act has forced him to write me at the same moment.

He added, 'I do not need to mail my letter – the writing it is the only essential thing.' Twain, like Goethe, possessed a

powerful imagination that, while writing the letter, was focused on his correspondent. And in writing letters of suggestion, Twain was clearly performing deliberate acts of sorcery, which is emphasized by his assertion that he could '*compel*' the other to write to him.

Some may complain that Twain's sorcery is too prosaic. Where is the weird ritual that one expects? It is there – if needed. Drawing all the evidence together, we may catch a glimpse of a very determined sorcerer at work. He has chosen the late hours, perhaps when the moon is full and his subject is asleep. By the light of a fire, primordial symbol of energy, he has assembled various useful items, possibly his subject's image amongst them. Throwing a pinch of incense on the fire, he rhythmically chants or sings a spell he has composed for the occasion, perhaps in iambic pentameters. Pantomiming his spell's intent, he slips into an altered state of consciousness and summons strong emotions. These are focused by his will on the image that burns unwaveringly in his mind. And he does this night after night until, finally, he recognizes that he had succeeded. A strange performance? Beyond doubt, but everything he did had a reason countenanced by science. He staged the performance for the chthonic mind and gave it instructions in its own language. That of course represents an extreme effort for some very important purpose. Seldom will the sorcerer use as many techniques as that or expend as much energy – his 'ritual' will more often resemble Twain's.

Thus far sorcery has been seen as acting on a subject at a distance and without his knowledge. Although that may sometimes be necessary, most sorcery will take place in the presence of the subject, with his knowledge, and typically at his request. Sorcery, after all, is usually concerned with practical ends; the sorcerer is interested in results and will use the most convenient methods to obtain them. He is unlikely to labor mightily for trivial reasons, such as charming warts. In disposing of these (and similar annoyances) the sorcerer will certainly find it simpler to treat his patient directly, perhaps making cross marks over them with a knife and mumbling a suitable incantation. But, some may object, that is only the Pygmalion-placebo effect – or perhaps suggestion. And so it is.

The most perplexing facet of the Pygmalion effect in medicine is that more often than not it is the physician's belief that bestows power on the placebo. The effect isn't produced merely by giving a patient a pill, otherwise people who don't respond to real drugs would not later respond to placebos, and all physicians should be equally successful in administering placebos – which they aren't. Lacking any better explanation, researchers have frequently taken for granted that a physician somehow conveys his expectations of a cure to his patient through subtle behavioral cues – a twinkle in his eye, a smile a shade livelier.

Unfortunately for that vague hypothesis, however, there are too many instances in which it fails. How do patients who are blind, deaf, or so traumatized they are unable to perceive the physician's cues manage to respond? Or infants? But they do. An even thornier problem is how patients know exactly in what way and at what level to respond. If a patient is given, for example, placebo Darvon and later placebo morphine, how does he know, unless he has experience with morphine and is told that he is receiving it, the precise degree of relief to expect from each? How could a patient know what side effects to exhibit? How could he suffer anaphylactic shock? The requisite knowledge, although in the physician's mind, is quite beyond communication through 'subtle behavioral cues.' These and other problems compel us to reject the idea that the physician's behavior is the principal source of the Pygmalion-placebo effect.

Telepathic suggestion, on the other hand, is not a hypothesis; we have seen it demonstrated many times, and it readily accounts for the Pygmalion-placebo effect. But if its secret lies in telepathic suggestion, its secret lies in sorcery, for that is clear-cut sorcery. It may be a sorcery as unconscious as Goethe's or as deliberate as Twain's, but it is sorcery still. And every physician who has healed with a placebo has very likely healed with sorcery.

As a physician may knowingly use placebos to successfully treat his patients because he *knows* they can be effective, so may a sorcerer use a placebo spell – a charm, potion, or talisman that looks like the expected article but has not, in fact, been prepared according to the prescriptions of sorcery.

It is nevertheless somewhat redundant to speak of a placebo spell, since a spell is apt to lurk behind most placebos, though usually a partial or truncated one. And unlike the sugar pill, which is a simulacrum of ordinary chemical medicines, the 'placebo' spell is not a simulacrum, at bottom, but the real thing. It is just that from the sorcerer's point of view it is chancier and less potent than one properly prepared.

Charles Richet reported the use of a magical placebo on one of his students who was obsessed with the idea of suicide and came to him depressed and weeping. 'I am sure I shall end by suicide,' he said. 'Can you save me?' Richet perceived no reason for these gloomy anticipations and was uncertain what he could do to help – he was a professor of physiology and didn't think of himself as a sorcerer – when a 'happy idea' struck him. On his table reposed a little bronze figure of the Knight of Death with the visor of its helmet raised to show the face of a skull. 'Take this statuette,' Richet said. 'It has magic powers and will protect you.' Although its symbolism was splendidly suited to its use, it was only a common figurine. The student thanked Richet effusively and departed in better spirits. Six months later he returned to see Richet, completely cured.

Of course the sorcerer, like the physician, is happy for the assistance of anything that contributes to success. He is striving for results and does not insist that everything he undertakes uses sneaky long-distance telepathy. He is a pragmatist, not a purist, and is in principle indifferent whether telepathy plays any part at all, as long as the warts vanish, the bleeding stops, the pain goes away, or a lover's heart thumps. And if some simple remedy were available that infallibly removed warts, the sorcerer would either use it or stop treating warts.

These activities might be described as petty sorcery; not because they may be helped at times by verbal suggestions or placebos, but because they account for the greater part of the work of sorcery – their effects are not at all petty. It is the sorcerer's traditional and useful work to treat all those human problems that defy standard medicine or for which it has small success. And sorcery may also provide life-saving first aid, as it does, for example, in blood stopping. There are hundreds

of blood-stopping incantations; nearly every village once had someone initiated into the use of the secret words, such as 'Stop, blood, stop, you blood! as the flow of River Jordon when Christ was baptized.' (A roguish variation stops the blood responsible for penile erection.) These spells work. And their success is no more remarkable than Cheek's success in stopping massive bleeding in childbirth by a few suggestions, 'under the assumption that the patient was already in trance.' He knew suggestion was effective just as the sorcerer knows his spells are effective. Unlike the ordinary hypnotist, however, the sorcerer doesn't necessarily have to be with the patient.

Sorcery and medicine have been universally joined and parted company in the West only in recent centuries. Although they didn't know it, physicians until modern times achieved nearly all their cures through sorcery. And sorcery continues to offer much to medicine. We have seen that under various guises it has been the single most powerful healing technique man has ever possessed. Whether physicians used metallic tractors or injections of plain water, they succeeded in treating numerous diseases, many of which still baffle medicine. The treatments lost their efficacy only when they were disconnected from their belief system; that is, when they were found not to act according to the 'scientific' theories of the time. But they had nevertheless healed. The mistake was in supposing that if they healed, they perforce did so in obedience to known principles. Had physicians remained ignorant that tractors, say, were physically ineffective (according to their lights), they could have continued to heal with them.

The physician in general practice is now able to help only about 15 percent of his patients by the use of standard medicine. The others he knows have either psychogenic problems or physical ones hovering beyond the range of present day biological understanding. Because he *knows* he cannot help them, he cannot. If he used sorcery, on the other hand, he might be able to help many or most of the remaining 85 percent – who certainly deserve help as much as those 'lucky' enough to have illnesses that yield to the materia medica. Moreover, the physician may use sorcery without

departing a jot from a whole-hearted commitment to scientific principles. For the physician who has the knack, that probably means a greater understanding of and reliance on the placebo, with the full knowledge that it is his will that heals. If he chants a spell (and why not?), he may chant it under his breath – his patients need not know.

Does sorcery, as a healing art, differ from so-called psychic or faith healing? In one sense not at all; in another sense in every way. The faith healer who knows that God – the gods, some particular spirit or whatnot – manifests through him can cure through his belief alone, as a physician cures with a placebo. Another healer may believe that some unknown but more or less divine energy flows from his hands that helps the suffering, though he does not know how. Both may be effective at times, as we know they are, but since neither has the foggiest idea of the unconscious processes at work, improvement is impossible. LeShan described the healer as entering an altered state of consciousness in which he could not in principle do anything specific.

To see psychic healing in the context of sorcery, on the other hand, places it in a larger perspective that relates to many areas of scientific research. Sorcery is concerned with specifics and relies on understanding and technique. The sorcerer knows what he is doing and why. Sorcery is a kind of technology that may grow as technologies grow: what a sorcerer cannot do today, he may expect to do tomorrow. The traditional faith healer is not able to do that; he either has the 'power' by the grace of God or he doesn't. And if he does, he has no idea how to improve on it, except perhaps to pray harder. To draw a theological veil over a healing practice is to remove it from scientific understanding. Gods, after all, are privileged to do things for their own inscrutable reasons and by purely supernatural means.

Religious people nonetheless have reasons to be suspicious of 'faith' healing, particularly when the faith of the person healed may be unimportant. It has rather unpleasant overtones suggesting that the Deity is indifferent to the suffering unless they fall under the ministrations of a favored healer. If the Deity wishes to heal, he need not seek out a 'channel' in some middleman, much as the feeble shades of the dead are

said to seek out mediums; he may do so on his own account.

Folklore, fairy stories, and Walt Disney have led to the common belief that when one knows the 'magic' words, nothing more is needed – effects follow as automatically as a Hollywood vampire flees from a cross. And centuries of Christianity have led us to think of rituals as being effective in themselves, as the sacraments are said to be, because of what they are and not because of the motives or knowledge of those who use them. Westerners therefore rather expect Dracula to cower before a crucifix whether it is brandished by a priest, pagan, or atheist. Not so with sorcery. If one were to come upon a book of spells, it alone would not suffice to cast a single spell, no more than having a violin would enable one to play the Brahms' concerto or having a chisel would enable one to sculpt a *David*. More is needed.

As we have seen, certain aptitudes appear to be important for successful sorcery. Some of these, on the other hand, may be developed or encouraged by sorcery itself in a bootstrap maneuver. If the needed aptitudes are under the control of the unconscious, they are theoretically open to the influence of sorcery. The unconscious, however, is unfortunately more resistant to instructions from its conscious pole than it is to those originating elsewhere. That is why a hypnotist may exert a degree of control over a subject's mind and body that he would find very difficult to exert on himself.

Using sorcery to change one's self is possible, as self-hypnosis is possible, but it would be easier and more reliable to have others use it on one's behalf. And another sorcerer or group of sorcerers would be ideal. When sorcerers use sorcery to help another develop his powers, however, they are initiating him. Genuine initiation would not be some mumbo-jumbo that confers on the initiate the right to call himself a seventh degree whatever and wear a green robe with a red sash; it would be something that brings about an actual change in the initiate.

Are there dangers in the practice of sorcery? Certainly if one believes there are, there are. And one of the commonest beliefs is that a spell is like a boomerang that will fly back if

the subject fails to catch it. If one believes that pious notion, then of course it becomes a likelihood. Obviously the many primitive sorcerers who thrive on curses do not. And the literature on telepathic hypnotism does not disclose a single instance in which the hypnotist entranced himself. But in any event that is a worry only of those with curses in mind; no one fears having a blessing bounce back in his face. Nevertheless, sorcery uses natural phenomena that, like the sea, may be as terribly unforgiving of error as they are impersonal. Science does not say.

But experience does. It would be unpardonable to withhold information, perhaps vital, merely because it cannot be documented by scientific studies or involves issues beyond the scope of this book. Hence, a caveat: spells often appear to work according to a least-action principle in which their goals are attained through 'coincidences' or 'accidents' by the shortest and easiest route. If, for example, a sorcerer casts a spell to obtain a certain sum of money, however noble his purpose, he should be sure the amount is not met by the death benefits of a loved one – for that could be the most straightforward way to obtain it. It isn't that magic is a perverse monkey's paw that insists the magician eat ashes or prick his fingers on hidden thorns in every flower he tries to pluck by its aid, but it is, as the 'someone' in the chthonic mind who assists him, amoral and indifferent to the human race. And the chthonic mind, despite its sophisticated reasoning powers, tends to take instructions very literally. Communications with it should be weighed as carefully as a contract with a pettifogging lawyer.

Other things may make spells go awry, and psi-missing is a candidate. Psi-missing percipients, whether sheep or goats, are those who consistently score below chance in ESP tests. And if something similar can occur with an agent, some may find their spells work in an opposite direction to their intent – like the 'brown thumb' of the gardener whose plants wither despite faithful attention.

Every spell will nevertheless remain essentially an experiment. And as in any experiment with people, its results will not be uniform. A spell is carried by a normally weak signal, telepathy, mediated by the labyrinthine chthonic minds of

both the sorcerer and his subject, and it remains vulnerable to a plethora of unknown influences. Against these the sorcerer will strive to increase the power of the signal by emotion, concentration, and visualization, and to increase the receptivity of the unconscious by using its laws and symbols. Above all he can persist.

Still, spells will remain uncertain despite the sorcerer's efforts, particularly in inexperienced hands. Yet even uncertain spells are useful. Suppose a novice sorcerer plagued by fickle spells wants to influence his superior to give him a promotion. Even if his spell works only one time in twenty, any gambler will appreciate that he has still improved his odds, his 'luck.' The dice are now loaded, though they may not always turn up seven.

If his spell finds its target, as we saw in experiments in telepathic hypnotism, it may begin to take effect in minutes, though it may require considerably longer for its full effects to be realized, depending on what is asked of it. A death spell, as one grim example, may sometimes swiftly achieve its ends because it may be essentially simple, consisting of the single command 'Kill!' which the controller in the unconscious has many ways of bringing about. The Bantu cursed by a witch, we may recall, died before the sun went down. Schmale reported that of the patients who suffered serious illnesses as a result of psychic trauma (which activates the same mechanism as the death spell), one-third died within twenty-four hours, two-thirds within a week, and the others at longer intervals. The seemingly simpler but more specific task of removing warts, on the other hand, may take several weeks.

Even the spell that finds its target – plants a suggestion in the subject's unconscious – will eventually wear off if it is one intended to maintain an ongoing condition, such as an amorous attachment. Although Estabrooks reported an unusual instance in which a posthypnotic suggestion seemed strong after twenty years, these suggestions generally lose their power far sooner. Kellogg said that it decreases rapidly during the first three weeks unless the suggestion is occasionally reinforced. And Weitzenhoffer noted that the decrease with time was proportional to the complexity of the suggestion. A simple suggestion given only once, he

remarked, may last many months, even years, but a complex suggestion or one that meets resistance usually requires periodic repetition to remain effective. Some spells, then, may need reinforcement.

Reinforced or not, a spell may not produce extreme results, especially for the beginner, but that doesn't mean it is ineffective. The sorcerer tries to alter events to favor his purposes, and any small contribution toward that end should be welcome. A love spell, for instance, may have little more effect than wearing a becoming perfume or giving flowers – which is not the same as being worthless.

Finally, just as a musician may have a greater talent for the violin than the guitar, a greater feeling for Tchaikovsky than John Lennon, a sorcerer should expect to be more successful with some spells than others. One sorcerer may find his greatest success in healing burns by whispering incantations as another finds his in amorous spells using talismans – and so on, in endless combinations and permutations. But that is a peculiarity of human individuality and not of sorcery itself. And so we have specialists. . .

There is no reason to suppose that sorcery is based on other than natural law, and in these comments on spells we can see that it may be investigated no less than any other aspect of nature. All the same, we should keep our expectation modest because that investigation will require voyages into the chthonic world, where science may not be able to use unalloyed the concepts and methodologies that have won its past victories. Every area of knowledge preserves at its core a black hole of ignorance and mystery. Electromagnetism, for example, remains fundamentally mysterious, though we have learned to use it and have even erected the twentieth century upon it. Perhaps part of the mysterious core of sorcery is the controller in the unconscious. We may not understand it until we finally understand the mind, which may be never. There are sound reasons for supposing that a mind simple enough to be understood is also too simple to do the understanding. But in the meantime we may learn to use the controller and proceed with the faith (or superstition) that nature is an orderly unit that can be understood – if we ask the right questions and are willing to persevere even though the

answers may elude us for years or centuries.

We nevertheless have a few answers already and have learned a little about how to wheedle and dupe the controller. And in deriving some of the principles of sorcery from the experimental literature, we have also ended with an outline or primer of spell casting – a scientific grimoire. Yet we need not stop with the experimental literature, for there is an even larger one, as we shall see, that treats sorcery directly and as it is practiced.

Chapter 8

Spoor of the shaman

Prostitutes lie. Sorcery is by far the oldest profession, and sorcerers have been casting spells since saber-toothed tigers prowled the land. It's time we acknowledged the existence of the many and ancient traditions of sorcery. Perhaps they can teach us something. And what better place to begin than with a few of our forbears who flirted with the gallows for the sake of their lore?

On a midsummer day in Boston, 1688, one of John Goodwin's children quarreled with the daughter of Goodwife Glover, who then 'bestow'd very bad language upon the Girl.' Immediately afterwards, Goodwin's child and her three sisters began to have strange fits. Sometimes they fell deaf, or dumb, or blind, or even all three at once. Their tongues were sometimes extruded to a prodigious length as though pulled by an unseen hand, or their mouths sprang open so widely their jaws became disjointed. Sometimes they would lie as though paralyzed, with their bodies arched backwards, neck to heels, so that 'it was fear'd the very skin of their Bellies would have crack'd.' Their necks would appear broken, as though the bone had dissolved, and their heads twisted round almost backwards. And they cried piteously that they were cut with knives or struck painful blows. We think we recognize the girls' symptoms as those of classic hysteria, *grande hystérie*, but Goodwin did not. Reluctantly, and after consulting physicians (who were familiar with hysteria), he entered a complaint against Goodwife Glover. She then gave such a 'wretched Account' of herself to authorities that she was indicted for witchcraft.

Goodwife Glover confessed to bewitching the children at her trial. And after court officials searched her house, several 'small Images, or Puppets, or Babies, made of raggs and stuff't with Goat's hair, and other such Ingredients' were found and brought to the court. Cotton Mather reported that

> When these were produced, the vile Woman acknowledged, that her way to torment the Objects of her malice, was by wetting of her Finger with her Spittle, and stroking of those little Images. . . But one of the Images being brought unto her, immediately she started up after an odd manner, and took it into her hand; but she had no sooner taken it, than one of the children fell into sad Fits, before the whole Assembly.

Goodwife Glover had no doubt that she practiced witchcraft; neither did the court.

The witch hunt that had bagged Goodwife Glover was over by 1693. But in that year, Sunday, September 10, Margaret Rule quarreled with a woman who had once been jailed on suspicion of witchcraft 'and who frequently cured very painful hurts by muttering' charms over them. The next day Margaret was stricken with fits similar to those of the Goodwin children. Wounds appeared on her body that healed within a minute. Witnesses saw the wounds appear without visible cause, but Margaret 'saw' the witch inflict them on her. Here we are reminded of Mitchell's patient, also a hysteric, who bled from a blow she dreamed receiving; we are also reminded that those influenced by telepathic hypnotism sometimes recognize or 'see' who is influencing them. Classic hysteria? Perhaps. But some of the symptoms were unusual. On a number of occasions, and before many witnesses – dour Puritans all – Margaret floated to the ceiling where the combined strength of several men were required to pull her down.

Chadwick Hansen of Pennsylvania State University, in his balanced *Witchcraft at Salem*, concluded that the popular view denying that witchcraft was practiced at Salem or that society was endangered is an error. 'It is comforting to think this,' he said, 'but as we have seen it is quite wrong. There was witchcraft at Salem, and it worked.'

The witchcraft trials in New England were forsaken not because witchcraft ceased to be widely practiced, but because people came to realize they had no acceptable rules of evidence that would not jeopardize the innocent. Even confessions, they discovered, were of questionable value – and many of these were given without the slightest coercion. Despite that, the trials did catch a number of undoubted witches (at least in their own eyes), which reveals how shockingly inept they were at their trade. A competent sorcerer would not be caught or imprisoned – as we shall see in the next chapter – unless he wished it.

Most of the children's symptoms were obviously those of hysteria (whether or not precipitated or exploited by a spell), and the children were very likely predisposed to the disorder. We saw that hysterics are liable to be good subjects for sorcery; and these were also young and female – additional contributions to vulnerability. And, of course, someone was trying to bewitch them. But we are not particularly concerned here with whether the children were actually bewitched, though some apparently were; we are concerned only with noting that primitive sorcery is not confined to the jungles. It has long been practiced by European peoples, and still is. The witchcraft of seventeenth-century England and New England is no myth and persists today.

Although certain principles of sorcery were derived in the previous chapter from the observations and experiments of scientists, we should not ignore the practices of these Salem witches and other primitive sorcerers – despite their bat's blood, goat's hair, and devils. We might profitably examine some of their magical techniques as pharmaceutical companies do their herbs, realizing that effective principles may be embedded in a mass of superstition.

But it isn't always easy to separate the wheat from the chaff. Ronald Rose, an anthropologist who studied Australian aborigines, remarked there is often a superstitious element in magical practices that obscures or distorts the underlying magic. He cited as an example the belief that for a spell to be effective the song or chant that goes with it must be recited word perfect. 'Thus,' Rose said, 'while it may be true that in love magic deep desire and the tension associated with

the ritual might well give rise to a sort of telepathy that makes the magic work, the word perfection of a chant is a superstitious addition.'

These superstitions may nevertheless be useful. As we have seen, the sorcerer must operate with a system and metaphysics he understands and believes. If a superstition creates an 'understanding,' it will stir up emotion and confidence, and the sorcerer is on his way to success if his fundamental techniques are valid. In the blood-stopping spells, for example, a common superstition holds that they can be passed on only from a woman to a man, or vice versa, and that when it is revealed the person who reveals it loses his power. A young woman who got the spell from an old man *knew* it would stop blood and had probably seen it do so many times. And when he told it to her, he lost his power – as he knew he would. The superstition has given the woman confidence that she now possesses it. And with that firm belief, she does.

She will also set great store by reciting the incantation word perfect because, in her mind, the words themselves are the whole of the secret. The word perfection of an incantation may thus be another useful superstition. We all know of religious statues that have gained a reputation in their own right, and seemingly apart from the spiritual beings they represent, for healing or granting favors – or bleeding or weeping. To some degree they have ceased to be merely symbols and have become entities. Similarly, an incantation that has been long and successfully used, and whose words are jealously kept secrets, begins to be reckoned, and perhaps to that extent becomes, a thing in itself. Its aura of being charged with a power of its own may then influence the emotions and beliefs of its user.

These superstitions are usually strongly colored by classic Pavlovian conditioning, and they strike at the visceral mind. Although magically useless from our point of view, they still provide an 'understanding' for those who cast spells without the least idea of how they work. They may even assist the sorcerer who knows better, though he is likely to lose more freedom than he gains in power by succumbing to them.

If we are to look into primitive practices, it would seem that

our own traditional witchcraft, such as that opening this chapter, would be especially profitable. It has a large literature and even survives to some extent. Unfortunately, its value is limited. There may have been 'witches' who were worshipers of an Old Religion, as Margaret Murray said, but the majority – at least nearly all those caught from the fifteenth century on – clearly thought they had traffic with the Christian Devil. Whatever ancient traditions of sorcery they may have inherited became first saturated with an incompatible theology and then distorted by infusions of 'learned' systems, such as the cabala. It is a sorcery short on tradition and long on diabolism.

If the art practiced by impoverished old women offers little, what of the 'scholarly' magic pursued by the intellectuals? They left many books: *The Sworn Book of Honorius*, *The Black Pullet*, *The Great Albert*, the *Lemegeton*, *Clavicula Salomonis*, *Liber Spiritum*, and on. The dancing spell was taken from one of these, the *Grimorium Verum*. Surely, despite their diabolism, amongst these sonorous titles and pages bedizened with weird diagrams and eldritch formulae are nuggets of useful knowledge. We are most unlikely to know; their interpretation presents too many obstacles.

Sorcerers have never proselytized and, for rather obvious reasons, prefer to keep their existence and lore hidden. Carlos Castaneda didn't discover that Don Juan was a sorcerer right away. An anthropologist, Castaneda is now alleged to be also a full-fledged sorcerer in the Yaqui tradition, and he has written a number of books on his apprenticeship – but not one is a manual of sorcery for aspiring students. If, in fact, he became privy to the secrets of Yaqui sorcery, they are secrets still. Secrecy and magic are stubborn bedfellows, even in the house of science. Scientists are accustomed to disclosing all they discover, but they may have second thoughts if their discoveries are magical. Johann Ritter, nineteenth-century father of electrochemistry, discoverer of ultraviolet light, and inventor of the dry cell battery, blundered into some magical principles. 'Magic has been recreated,' he enthusiastically told his friend Hardenberg. 'We are only at the beginning but I envision great things ahead along an adventurous road. . .'

He revealed some of his information and then swore Hardenberg to secrecy.

Even supposing the medieval grimoires were written by genuine magicians committed to divulging their secrets as clearly as possible, problems would remain. Anyone who has attempted to follow an old recipe, such as one for baking a cake, will recall how difficult it was to understand. The writer of centuries past did not usually expect the written word to stand alone; he assumed access to oral instruction and direct familiarity with the technical matters involved.

But clarity was seldom their desire. They didn't share today's ardor for writing clearly. Plain language was for plain people and they wrote for the elite, who were expected to penetrate the riddles, allusions, and cryptograms lambent beneath the plain text. And since books of magic have been jealously hidden since the days of the Pharaohs and were intended for an initiated clerisy, they would have been prime materials for cryptographic treatment – so much so that we must now presume they were written in code. That means the translations of ancient and medieval magical texts are likely to err greatly, translating at best a shadow of their plain texts. The cabalistic diagrams, endless weird names, and 'words of power' that disfigure their pages may be cryptographic. That could be true even if the 'knowledge' they conceal is claptrap. To understand them would require an expert grasp of their original tongues, their times, and the schools or traditions they represent – a thing nearly impossible.

Even if genuine (in intent) magical texts did exist, they would be read by those who did not understand them and who, in turn, would write additional volumes based on a garbled version of their plain texts. And that would represent the efforts of serious authors. We know literary fraud is as ancient as written language itself, and all along the way magical books have been spun from fantasy with, perhaps, a bit of inspiration from folklore and theology and snatches from other supposititious magical books. They usually claim to hail from some golden age of magic, the time of Solomon typically, and to represent an unbroken tradition. And that alleged tradition is vital to them, for they have no other title to legitimacy or excuse for their foolishness than a claimed

descent from pristine revelations. But we have scant patience nowadays with pristine revelations. And though the grimoires may offer a challenge to scholars, they offer little to sorcerers – except perhaps some colorful stage props.

These books and many inspired by them are still printed today, continuing a tenacious pseudo-tradition that haunts even the illiterate 'power doctors' of the American hills. It was necessary to deal with the grimoires, the Grand Arcana, at greater length than they deserve because they have seduced students for centuries. If we wish to learn something of traditional systems of sorcery, we must go to the sorcerers who still work within a living and less corrupt tradition. Unfortunately, primitive sorcerers are also so secretive that it is often possible to learn little more than what the average tribesman thinks sorcerers do. The Kilpatricks, Cherokee scholars and Cherokees themselves, point out the difficulties in learning the magical knowledge of their tribe's genuine sorcerers. Nevertheless, an extensive literature of primitive magic has been gathered by folklorists and ethnologists that shouldn't be neglected. If certain practices appear widespread, perhaps the chthonic mind at least finds them appealing and, for that reason, the scientific magus may also find them of interest.

It is only in recent times that anthropologists have more generally considered the possibility that magical events may actually occur. The shaman or witch doctor was previously regarded as either a charlatan or a psychotic because he demonstrated phenomena the scientists 'knew' were impossible and therefore delusional. That view has changed. Ralph Linton, for example, went beyond a mere recognition of telepathy and took considerable pains to distinguish genuine magical events from delusions. Mircea Eliade also emphasized the need to consider the reality of the powers ascribed to medicine men. 'Although research into this question is still at its beginnings,' he said, 'a fairly large number of ethnographic documents has already put the authenticity of such phenomena beyond doubt.' Here we shall look at a few specimens of the documents Eliade may have had in mind.

Harold Johnson, a physician practicing in Hawaii, reported

the case of a child under the spell of a *kahuna*, a Hawaiian sorcerer. According to her parents she had been bewitched as revenge against them. She was a part-Hawaiian two-year-old hospitalized for a generalized skin infection. Her face was covered with crusted, ulcerated lesions and large parts of her body were denuded of skin. Antibiotics failed. Her temperature fluctuated between 101°F and 103°F and her pulse rate ranged from 130 to 140. Sixteen hours after her admission to the hospital she died. 'Autopsy, amazingly, revealed no abnormal findings: all major organs were reported to be normal.' To his credit, Johnson made no attempt to explain away the little girl's death. Was she simply an ignorant primitive who died because she knew she had been cursed?

Murdering children to spite their parents offends civilized people, but sometimes there is a harsh justice in the death spell. Turnbull told of three Pygmy hunters who had promised a Negro from a BaNgwana village of Dar es Salaam that they would give him a lot of meat in exchange for a sack of rice. The Pygmies unwisely failed to keep their part of the bargain – the man they swindled was a sorcerer. After several futile efforts to collect what they owed him, the sorcerer, piqued, cast a death spell on all three. Aberi was the first of the three to die. Turnbull said that Aberi 'had gone to sleep, but later, quite suddenly and without warning, he had awakened with a start, struggling violently as though trying to get up.' Then he cried loudly and fell back dead. The other two hunters soon died under similar circumstances.*

A pleasanter incident was reported by Lyall Watson, a biologist and the author of a number of popular and provocative books. He was traveling along the Amazon when one of his native boatmen became feverish as a result of an abscessed wisdom tooth. Watson failed to pull it with engineer's long-nosed pliers and they were about to turn back when one of the

*Aberi's death bore the marks of the 'Oriental nightmare death syndrome' that has been killing Southeast Asians in the United States. By 1951 Alvin Majoska, Honolulu pathologist, had conducted extensive postmortems on eighty-five Filipino men who went to bed, suffered violent nightmares, and promptly died. Even with the help of the Harvard Medical School, no cause of death was found. The Filipinos call the 'illness' *bangungut* (Tagalog for 'nightmare') and ascribe it to sorcery. In the last four years more than forty Southeast Asians have died of *bangungut* in the United States. Did some of their sorcerers immigrate with them?

boatmen remarked that a famous healer lived only a few hours away. Having nothing to lose, they found the healer and he agreed to treat the boatman. He shoved a forefinger into his patient's mouth and 'lifted out the offending molar as though it had been lying loose there under the tongue.' They all examined the tooth and the empty, barely bleeding socket. But the healer was not done; he still had to remove the pain – a more entertaining procedure.

He massaged the patient's swollen throat and made him sit on a log with his mouth wide open. He then began to sing and a few moments later blood trickled from the corner of his patient's mouth – followed by a column of living black army ants.

> Not a frantic confusion of ants such as would have resulted if the healer had merely dropped some container into the patient's mouth; but an ordered column of ants, marching two and three abreast, coming from somewhere and going somewhere.

They continued to come until a hundred or more streamed along his body, to the log, into the grass, and away. Everyone laughed at that. Watson didn't see the joke until he later found out the local word for pain was the same as the word for the ants. The boatman quickly recovered. Had the sorcerer trained a few hundred army ants or was it an ingenious hallucination?

Anthropologists once held that a victim of sorcery had to believe in sorcery and know that he was under a spell to succumb to it. Although that fallacy has been abolished, another remains that declares that Europeans are immune to primitive spells; even many primitives believe it. That idea may comfort Europeans, but it cannot be supported by what we know of sorcery. And Europeans who ventured among primitive peoples have told their tales, some grim and some humorous, that we may now judge less cynically.

Hassold Davis, a photographer, was attending the coronation of King Essey Bonzou in West Africa in the mid 1950s when he unknowingly drew the baleful attention of a native sorcerer. Davis awakened one morning to find his body almost paralyzed on the right side of a precise line drawn from

the top of his head down through the middle of his nose, chin, and navel – not a neurological condition as he described it. 'I'm half paralyzed, and the whole right side of me is beginning to ache like hell!' he told his wife. He suffered for three days, as stubborn men will, before he agreed to see the mission doctor, Father Zenzedrine. He had no idea he was bewitched.

Father Zenzedrine recognized his affliction as a bit of local sorcery; the spell was a popular one and he was quite familiar with its symptoms. 'There's not an old-timer on the coast who can't recognize it,' he said. But the doctor could do nothing for Davis except recommend that he see a sorcerer. Davis was now in sufficient torment to fill that odd prescription and saw Aka Comoé, one of the king's sorcerers. He removed the spell for a few thousand francs and Davis was well the next day.

Davis was smitten by a spell that had an element of humor in it, though not for Davis, but another European was a victim of one designed to inflict terror and death. James H. Neal was the Chief Investigation Officer for the Government of Ghana from 1952 to 1962. As a law enforcement officer operating throughout the country he made many enemies, and in Ghana interpersonal friction is often alleviated by *Ju-ju* men. Neal's personal encounter with African sorcery began after he had gone to bed one night. His first impression was that someone or something was in his room, perhaps an animal that had strayed indoors. He lay quietly, trying to decide whether to get up and search the room, when suddenly something began nipping his neck. He sat bolt upright in bed and switched on the light. He saw nothing. But after composing himself for sleep the whole thing began all over again. First the nipping feeling in his neck, and then a more powerful and painful pulling in the region of his solar plexus.

He was spent and frightened after his ordeal and now suspected that he was the victim of sorcery. The following night the attacks were renewed with greater intensity and he began to see his attackers – which were not of this world. 'The "creatures" were long-snouted and ugly,' and they repeatedly assailed his neck and lower body. The third night was even worse and Neal was able to see the creatures very clearly. He

was now terrified and so weak that he knew he couldn't live for more than a day or two. Just in the nick of time, however, he enlisted the aid of a *Ju-ju* man who, for a fee of £50, parried the attacks and broke the spell. Neal rapidly recovered and wisely engaged the sorcerer to protect him against future magical assaults – which occurred.

The sorcerer who had saved Neal's life, Malam Alagri, declined to reveal very much. 'I am bound to full secrecy of my Order,' he explained. But he did tell Neal that a powerful *Ju-ju* man could evoke a picture of his victim in a bowl of water and kill him by stabbing the image. And he added that others could do it with their minds alone, without the bowl of water. That technique, 'pointing the bone' (stick or arrow), is a common and widespread practice among primitive peoples. It basically consists of the bone's being ritually pointed, thrust, or thrown in the direction of the victim. And Malinowski observed that it was not sufficient to merely point the bone at a victim – it must be accompanied with intense expressions of fury and hatred.

Rose reported an instance of pointing the bone (actually it was a piece of wire) among the Australian aborigines he studied. A villain threatened two girls of his tribe with his magical powers if they did not accompany him into the bush; they obeyed out of fear (they said). Considerably annoyed, the tribe democratically convened a council to discuss the matter. Some thought he should be tracked and speared, but one old man, 'the cleverest of the doctors,' said he would execute the malefactor by 'pointing' him. The old clever-man hammered a point on the end of a piece of wire and withdrew from the main camp to a small fire of his own. After holding the wire over the fire until it glowed, he sang his curses and pointed the 'bone' in various directions – evidentally searching out the condemned man's location. He did this every night for more than a week until, suddenly, he put the wire aside and announced his success. He knew he had succeeded as Kotkov knew he had succeeded at telepathic hypnotism. No mere flip of a wand here, but over a solid week of persistent effort.

Two days later the girls returned and said their abductor

had become ill, then had to lie down for most of the day, and finally died about the time the clever-man announced his success. When Rose asked Tjalkalieri, his aboriginal friend, how such a thing could work, Tjalkalieri reflected carefully and replied, 'It is like a spear of thought.'

Rose found that clever-men are quite proficient at hypnotism and use techniques little different from those standard among civilized people. And Rose added:

> Almost all discussions with aborigines on hypnotism evoked an account of hypnotism at a distance, or what might be called telepathic hypnotism. Natives claimed they could influence another man who might be a half a mile or more away to do their bidding.

Rose told of the experience of an aboriginal who was pulling potatoes with his uncle when the latter complained that he didn't feel well, that someone was doing something to him. The other continued working as his uncle lay down and seemingly fell asleep. Shortly a man appeared, approached his uncle, and took something from his uncle's pocket. The stranger was not a thief, however, but a clever-man, who explained that he had entranced his uncle to recover stolen property. When his errant kinsman regained consciousness and was told what had happened, he admitted that he should have known better than to steal anything from a 'doctor fellow.'

Although an enormous gulf lies between the intellectual processes of the aboriginal clever-man and ours, we can nevertheless understand the underlying principles as he points the bone or recovers his property. Perhaps he thought his chant had to be word perfect, perhaps he called upon his spirits, but the power we can understand, and in the same terms as Tjalkalieri. We are not astonished that he was successful.

James Esdaile in the last century observed the techniques of a famous healer in Bengal. 'It convinced me that, if these charmers ever do good by such means,' he remarked, 'it is by the Mesmeric influence, probably unknown to themselves.' Esdaile became certain that magnetism was known in India

and that the secret had 'probably descended from remote antiquity, in certain families, or casts.' He described a crime in which a barber abducted a boy under the influence, Esdaile thought, of magnetism, and he so testified in court. The police caught the barber and Esdaile examined his victim. The boy was in a field early that morning when a stranger, the barber, left the road and approached him. No cause for alarm in that, but then the barber began muttering 'charms' and took his hand. Now it was too late to be alarmed; the last thing the boy remembered was the barber passing a hand over his eyes. According to his master and friends, he was a well-behaved boy who never had fits or walked in his sleep.

That hypnotism was anciently known in the Orient may make some contribution toward an understanding of a curiosity reported since archaic times. Ibn Battúta, the most traveled man of the fourteenth century and a careful observer, was one early witness of the famous and controversial Indian rope trick. Battúta saw a fakir or *jaduwalla* throw a rope into the air where it rose out of sight. He ordered an assistant, a boy, to climb the rope – the boy obeyed, scurried up the rope and vanished. The fakir called him three times without hearing a reply. Appearing enraged, he took a knife and climbed the rope after his assistant until he, too, disappeared. Shortly, parts of the boy's body began falling to the ground – his hands, feet, trunk, and finally his head. The fakir followed, huffing and puffing, his clothes dripping blood. He assembled the parts of the boy's butchered body, gave them a kick, and the boy rose as sound as ever. The trick continues to be performed, with variations, from time to time and usually under conditions that preclude the legerdemain of Western illusionists.

Edward Melton saw a version of the rope trick about 1670 in which the parts of the body were seen to gradually creep together until the body was whole and lived again. The butchery aspect may well be the oldest part of the trick. An ancient book, the *Westcar Papyrus*, described a sage who appeared at the court of Pharoah Khufu (who built the Great Pyramid). He cut the head off a goose and laid its body on the west side of the colonnade and its head on the east side. The sage, Teta, then stood up and spoke some words and the

body and the head began moving nearer each other until they finally joined, and the bird rose and cackled. Khufu must have requested an encore: Teta did the same with another bird and then an ox. So the rope part seems to have followed the bringing-together-of-the-body part of the trick. But slaughter doesn't occur in every version. Yule reported that a 'peripatetic Jadugar' threw a 'fifty-cubit' chain into the air. Instead of a boy, however, a dog scampered up the chain – followed by a hog, panther, lion, and tiger. All vanished. The chain was pulled down, but the animals were not seen again.

Ormand McGill, a naturalist as well as a stage magician and hypnotist, described feats he saw a fakir perform in Benares. The fakir exhibited a half of a coconut shell full of water. He held the shell high over a bucket and poured a continuous stream of water from it until the bucket was overflowing. That feat had also been witnessed by Howard Thurston, the stage magician, who later made it a feature illusion in his show. Though his effect was similar, Thurston's method was entirely different and depended on an elaborate, mechanically equipped stage. Yet the Indian fakir from whom he adopted the theme, Thurston admitted, had presented the illusion in an open field. How are seemingly impoverished fakirs, without costly mechanical stage equipment, able to do what the best Western illusionists cannot? More important, why did Thurston fail to buy such a marvelous trick? We may be sure that he tried. Why didn't the fakir sell it?

As McGill watched the water pouring from the coconut shell (a fine technique to rivet attention), he noticed a young mother standing close by with her baby beside her. Several feet away from the mother was a young native girl, a nurse. As the bucket filled, the mother saw, with horror, the nurse rise a few feet in the air and glide swiftly toward the baby. She picked it up and then rose high into the air, above the clouds, until both were out of sight. As the frantic mother gazed intently at the point in the sky where they vanished, a puffy cloud presently appeared that slowly assumed the girl's shape. (In the rope trick the top of the rope often disappears into a 'cloud.') She became clearer and larger as she descended until, in her normal appearance, she returned to give the baby to its mother. McGill said they all saw the illusion,

but only the mother was upset by it. Unmoved by miracles, she turned to the nurse and cried out, 'How dare you take my child in flight like that?' The girl replied that she hadn't touched the baby, which had been sleeping all the while. 'Then the magician smiled wistfully and said: "It was all Maya. Mem Sahib has been dreaming strange dreams. Nothing has really happened." '

We occasionally read that the rope trick was only a newspaper hoax concocted in the last century and that Richard Hodgson exposed it long ago – which is clearly not the case. Stage illusionists have offered various mechanical solutions to the classic rope trick, but all fail because none fit the conditions under which it is usually performed. Carter the Great, one of this century's greatest illusionists, insisted that it was accomplished by creating a mass hallucination. It is difficult for us to imagine a large number of people entertained by the same hallucination, but we have already seen an example of it in Watson's soldier ants. Either the ants were a group hallucination or real soldier ants. If the latter, we may as well suppose the fakir's assistant is really hacked to pieces and put together again. We think we understand something of the process operating in these 'tricks,' but it is hard to accept that it can occur on such a scale. We have known about hypnosis for less than two centuries, however, and have studied it little; others have known about it since the time of the Pyramids and perhaps have studied it much.

Large rewards have been promised to any fakir who would come forward to explain the trick – or even perform it. Lord Northbrook, Viceroy of India, offered £10,000 in 1875 to anyone who would merely show him the trick, a maharaja's ransom for a poor fakir who, we assume, counts his fortune in a handful of rupees. Unaccountably, none of these fakirs – or their assistants – have been tempted by the fortunes proffered. This is often tendered as solid evidence that no such trick exists, despite the evidence. And persuasive it is to Europeans. But Thurston was unable to buy the coconut trick even without the flying-woman-and-baby addition. The fakirs do not sell. Moreover, like policemen, they are impossible to find when wanted; anonymous, they appear where and when they wish, perform their illusion, and vanish again –

another circumstance seized upon by critics. We have either been befooled by a multitude of stubborn liars over the centuries or something strange is going on. Who are these fakirs anyway? Yet however incredible these reports may seem, we shall see in the next chapter that the ability to affect a number of people simultaneously is not a power peculiar to Indian fakirs. And we shall see that the West, too, has its share of people quite as singular as the fakirs and who behave very much like them.

We have seen that chants or songs may be useful in sorcery. Primitive peoples have always known it and spells chanted or sung have been a prominent feature of all magical systems. Nor are primitives unaware of the process that lies behind them. The Kilpatricks discovered in their investigation of Cherokee sorcery that in any ritual all generative power resides in thought. The Cherokee songs, which may be sung or merely thought, contain pauses during which the reciter thinks intently on the purpose of his spell. A song may serve any number of purposes for which its wording is appropriate – or even for any purpose despite its wording. As one medicine man said: 'If I wished, I could use the same *i : gawé:sdi* ('song, spell') for every purpose there is. It is the intention of the heart, and the knowledge, that really count.'

The Nichiren Shonin Buddhist sect that has gained some popularity in the West would not argue with the medicine man. The sect's adherents chant *Namu My oh o-renge-kyo*. ('Hail to the Lotus of the True Law') incessantly for long periods of time – preferably accompanied by the beat of a drum. Nor need it be carefully pronounced; it soon deteriorates in its chanters' mouths until it is a syllabic mush little resembling the original. The chanters use the chant to get whatever it is they want: money, romance, success, all can be obtained, they say, through the dedicated use of the chant. We should not be amazed if they sometimes succeed in charming a lover or attracting a superior's favorable attention; they are practicing sorcery.

The medicine songs of primitive peoples are not usually composed, but learned in dreams and visions; that is, from the chthonic mind. After a period of fasting and perhaps

isolation, the person undergoing the ritual will meet a spirit who gives him the song. Or it may arise spontaneously.

Isaac Tens, a Gitskan Indian shaman, described how he acquired his song. He was working alone when he suddenly heard a loud noise and the spirit of a huge owl grabbed him. He fell to the snow unconscious, bleeding from the mouth, and lay quivering – apparently in an epileptiform seizure (bleeding from the mouth or nose and seizures often accompany shamanistic trances, and hallucinations are common in epileptic seizures). Then, he said, 'a chant was coming out of me without my being able to do anything to stop it.' He later learned and memorized the song. That is the way of shamans the world over.

It is not an experience closed to civilized people. An American who trained under an Indian shaman in Canada described the harsh ordeals he endured to learn how the world was ordered in a way far different from what he had imagined. 'It was a process of breaking down and reordering over and over again.' That is, he was subjected to 'visceral washing' to instill the necessary beliefs in him. Later, during a dancing ceremony, he entered a trance and was confronted by the spirit of a bear; following a frightful hallucinatory experience he became ecstatic. 'There was a sound,' he said, 'and it was coming up from within me. I was singing a song, the song of my experience, and I felt the song gave me new strength and power.' It was his medicine song.

The chthonic mind, source of visions and songs, can be visited for prolonged periods, and not only by shamans. Masters was working with a hypnotic subject, an artist, who was to draw the images she experienced in the trance state. But during her first trance she unexpectedly found herself in a temple of Sekhmet. Her experiences there were fully as real to her as the world of everyday life – even more so. Extremely vivid and beautiful, with colors she did not think existed in the ordinary world, it was a place she entered 'with the entire mind and body' rather than looked at, one she could touch and act in as completely as though in waking life. Although her trances usually lasted from two to three hours, they seemed to her to last for as long as several days.

Sekhmet is an Egyptian goddess of great antiquity. Ordinarily depicted as a lion-headed woman, she was one of the most powerful of Egyptian deities. She bestowed the greatest powers and among her many titles was The Great One of Magic. The subject knew almost nothing of Sekhmet, but she nevertheless experienced her as the ancient Egyptians apparently did.

Fascinated by these events because they were so thoroughly real and convincing, the subject wished to return to explore Sekhmet's world in detail. She was very curious at first about where it all came from, from within herself or without. But she soon stopped asking the question and accepted her excursions as something transcending her personal experience. During her third trance she asked Sekhmet's permission to undergo training as a magician. The goddess granted it, but told her that the work would be long and exacting. The subject then began months of training in which a rich and complex magical, religious, and philosophical system was revealed that was both logical and consistent, but very different from any ideas consciously held by either her or Masters. Sekhmet's magic stressed the importance of developing the ability to create hallucinations through concentration, either projecting them on a surface or creating them in empty space so that, like Ruth's father, they stand in three dimensions.

We know the chthonic mind is enormously creative and can speak through a *dramatis personae* of its own invention. It can also make these experiences vividly real – exactly as it does for the external world every day in our usual waking state. And it does not matter 'where' consciousness encounters them, whether in this world or another. Earlier we saw entities such as Patience Worth and a priest of Nippur step from chthonic shadows to speak to consciousness; here the subject went to 'where' they reside.

But Sekhmet was a goddess! True, but we must not forget that the ancient gods, most of them, were not gods – even angels or spirits – as they are conceived to be in Judeo-Christian thought. That semantic confusion has generated many problems over the millennia. The ancient 'gods' were primarily personified activities or forces (through the law of personification) and a particular class of archetypes. Here

these entities will be referred to as 'daimons,' a term somewhat expanded from its ordinary usage to include all the 'gods' and 'spirits' of ancient and primitive mythologies – regardless of whether they are thought to be good or evil, powerful or weak. It is important that it not be confused with 'demon,' meaning a devilish spirit in Christianity. Its spelling and pronunciation (since it rhymes with 'thighbone') will help to distinguish it from 'demon.' Daimons have little in common with what Westerners think of as gods. Magicians, for example, would sometimes threaten them.

Here as elsewhere in this chapter we are caught up in the Western obsession: 'Is this *real*?' we repeatedly ask, with the besetting conviction of our hearts that a thing either shares the fundamental reality that we attribute to a stone or has none at all. Yet physics taught us that 'reality' is a metaphysical concept beyond science – and even a stone turned out not to possess the sort of reality we thirst for. We should perhaps stop with Eddington's comment that 'it is a primitive form of thought that things either exist or do not exist' and accept as the touchstone of 'reality' whatever is useful or leads to results we regard as useful.

We should be no more astonished at the 'return' of the daimons in the twentieth century than we are that after generations of inactivity beavers resume building dams exactly like those of their ancestors. That is why modern people who venture into chthonic realms may encounter the daimons more or less as the ancients knew them. When Michael Harner, an anthropologist at the New School for Social Research, drank *caapi* with the Jívaro, he entered a world beyond anything he could imagine: 'I met bird-headed people,' he said, 'as well as dragon-like creatures who explained that they were the true gods of this world.' He is now a practicing shaman.

Viewing the daimons as personified symbols, we see why they are often strangely formed. Who cannot appreciate the symbolic force of a woman with a lion's head (or is it a lion with a woman's body?), a daimon of war and destruction, of magic and regeneration; or in another exotic aspect as cat-headed and 'presiding over' sensualism, seduction, and allied areas of life. One symbol, like a poem, may contain an ocean

of meaning. When we speak of spirits or demons – as we invariably must in discussing primitive systems – we do it with the understanding that we are speaking of daimons, psychological phenomena. Nevertheless, to define something as psychological does not shrink it to a zero. The daimons are as powerful as the chthonic mind.

We have examined evidence that altered states of consciousness enhance telepathy on the part of an agent. Spontaneous telepathic incidents strongly suggest it, and primitive peoples have deliberately cultivated them, often with psychedelics, to obtain psychic powers. Some European witches also used psychedelic and narcotic plants for that purpose, with deadly nightshade, monkshood, and water hemlock the favorites. Compounded into a salve and rubbed on various parts of the body, they gave the witches the hallucination of flying to their orgies, the sabbats. A similar salve has been reported in use among African sorcerers for the same reason and with like results. But these are extremely dangerous plants and at least one investigator, Karl Kieswetter, died in an experiment with the 'witches' salve.'

Other consciousness-altering techniques in primitive systems have been largely ignored by science – the ancient practices of self-injury, mortification, and flagellation, for example. We saw that traumatized people were often in a hypnoidal state as a result of their injuries and that shell-shocked soldiers exhibited telepathic sensitivity. These observations make mutilation and flagellation more comprehensible if no less repellent. Flagellation also tends to release histamine, adrenalin, and the toxic products of protein decomposition – all of which may lead to hallucinations. These practices, often carried to gruesome lengths in the Orient, usually include fasting.

Prolonged fasting has a very long history in magical practice. Sorcerers have routinely fasted prior to any important undertaking and mystics of every stripe have used it to stimulate visions. But despite the modern preoccupation with dieting, fasting has received comparatively little scientific attention. It does, however, bring about bodily changes that predispose one to hallucinations. After observing the effects

of involuntary fasting (anorexia) on the New England witchcraft victims, Mather wrote: 'It seems that Long Fasting is not only Tolerable, but strangely Agreeable to such as have something more than Ordinary to do with the Invisible World.' And as the 'black fast' of European witchcraft, fasting has been used to curse enemies, thieves in particular. The witch, whenever he refused food, concentrated on the thief until the latter either returned the stolen property or died. In another version the witch, while fasting, mimics the symptoms he hopes to inflict on his victim.

Burning resinous gums as incense is another worldwide ritual practice. Traditional usage appears to select substances that are chemically terpenes. And of all the substances in the terpene group, Puharich thinks camphor is the most effective in altering consciousness. In large doses it produces convulsions similar to those of Metrazol (used as a chemical substitute for electro-convulsive therapy). Camphor, then, may raise an electrical storm in the brain without necessarily causing seizures. Burning substances also give off carbon dioxide which alone may bring about visions.

And an evening in a disco will demonstrate that dancing does something to the mind. In Hindu tradition the god Shiva set the world in motion with a dance, and witches and shamans have danced ever since. It is a fundamental technique of primitive magic. 'In the ecstasy of the dance,' wrote Sachs, 'man bridges the chasm between this and the other world, to the realm of demons, spirits and God.' A dance may also mime some desired result and should he helpful to a telepathic agent or sorcerer for that reason, but in primitive practice it is more often a means to induce a trance. The rhythmic movement of dancing alone may bring on a trance, and it may be intensified by singing, clapping, and the increased carbon dioxide that accumulates in the dancer's body.

It is difficult to think of primitive dancing without the drum, the great symbol of primitive ritual, from the monotonous thumping of shamanism to the pyrotechnic rhythms of Voodoo. Of course it marks the tempo of the dance, but it does a great deal more than was once suspected. A flashing light causes convulsions in some people and it is now known

that sound may do the same. Gastaut found that an intermittent sound with a frequency of eleven per second could provoke an EEG picture of a temporal-lobe seizure. He also found that biochemical changes take place that prevent the development of epileptic convulsions. Not only is the drum hypnotic in the usual sense, but it may, like camphor, precipitate an electrical storm in the brain, often a brain already overwrought by other techniques.

The drum is not a cultural oddity that beats only selected primitives into insensibility. Huxley thought it would be an amusing experiment to subject a group of our most eminent philosophers to ritual drumming. He predicted that 'if exposed long enough to the tom-toms and the singing, every one of our philosophers would end by capering and howling with the savages.' He wasn't far off the mark. Sargant, who studied the *Zar* ('demon') ceremonies of Arabic Africa, said that a recording of the Khartoum drumming was also effective in entrancing ordinary people in England. 'When I played this recorded music at one meeting,' Sargent said, 'a woman doctor told me that it was very like the Old Greek iambic rhythm, a rhythm that was thought to be so powerful in its effects that some say it was forbidden in ancient Greece except under the control of priests.'

Drumming may, like singing, arise spontaneously from the chthonic mind. Carl Levett, a psychotherapist, bought a set of bongo drums and began to play them aimlessly at odd times. But one day he noticed a peculiar rhythm unlike anything he had played before and was shocked by the sudden realization that the drumming was not coming from 'him.' He looked in disbelief, but the drumming continued in perfect rhythm, though completely out of his control. 'Immediately my body began to convulse and energy surged from deep within me,' he said, 'becoming a liquid radiance which saturated every cell of my body.' Without knowing it, Levett was repeating an experience universal among shamans. But there is another dimension to drumming.

A documentary filmmaker, Maya Deren, went to Haiti to film native dances. During a long stay she was ultimately to learn a great deal about Voodoo – and the power of its drums. She was participating in a ritual dance, becoming immersed in

the sound of the drums, when her consciousness began to flicker. She saw people dancing first in one place and next in a different place, facing a different direction, with no memory of what had happened during the intervening lacunae. 'This sound will drown me!' she cried. It did, and she described the final extinction of consciousness: 'The white darkness moves up the veins of my leg like a swift tide rising, rising . . . reaches my head, engulfs me. I am sucked down and exploded upward at once. That is all.' That was all for her, perhaps, but not for others. When she looked up an alien being peered through her eyes: the *loa* Erzulie. She was possessed by a Voodoo 'goddess.' Deren knew very little about Erzulie because she was not 'served' by her particular group. No matter. While possessed, Deren behaved exactly as the *loa* Erzulie was expected to behave, even performing intricate rituals of which Deren could have known nothing.

We saw that an alternate personality could take over the body, 'possess' it. A citizen of the same land, a daimon may do likewise. In Voodoo these personations are regarded as visits by the *loa* to their followers. We saw that Master's subject was able to visit a daimon, Sekhmet, in its chthonic world; in possession, the daimon visits ours. Possession of this kind was an ancient practice also in Europe which continued up to early Christian times. It has also made an ill-defined appearance in some Christian sects that practice possession by the Holy Ghost.

The possessed person may exhibit astonishing physical abilities that he does not have in his ordinary state. An old man may dance with the agility and endurance of his youth; another, possessed by a hard-drinking *loa*, may drink dangerous amounts of alcohol yet be entirely sober on awakening. A spectacular example of that is said to occur when the Voodoo drummer is himself possessed by the Hountor, the *loa* of the drums. 'Once more it is apparent that only the loa are the real virtuosi,' Deren remarked, 'for the drumming of the Hountor is one of the most astonishing musical experiences possible.' But because the Hountor drums for himself, he disrupts ceremonies and his appearance is discouraged.

An extraordinary demonstration of physical power by a

man possessed was witnessed in 1928 by the National Geographic Society's Yunnan Expedition in Tibet. A *sungma* in Tibet is a person possessed regularly by some specific daimon to act as an oracle. This particular performance was by Sungma Balung, who became possessed by the great daimon Chechin. Joseph Rock reported that when the *sungma* took his seat

> he sat motionless on the throne in the somber chanting hall, his face buried in his hands, breathing the fragrant juniper smoke, while the deep, low tones of the chanting lamas, punctuated by bell ringing and the blowing of conch shells, lent mystery to the whole scene.

The *sungma* began to accompany the lamas in their chant until convulsions struck him.

With a blast of trumpets and a deafening clash of cymbals, Chechin arrived. A tall iron hat, weighing about fifty pounds, was placed on his head and tied firmly under his chin. The *sungma* spat and groaned; blood trickled from his nose and mouth; his face turned purple and swelled to such an extent that the leather chin strap broke. The *sungma* was then handed a strong Mongolian steel sword and 'in the twinkling of an eye he twisted it with his naked hands into several loops and knots!' These swords are valued by the Tibetans as charms and this one was given to the Society. Rock reported that he had examined such swords, which were of excellent steel, a fourth to a third of an inch thick. He found it beyond his strength to bend even the tips, yet the *sungmas* twist them into knots and spirals, beginning with the thickest part of the blade near the hilt, as easily as a child bends a wet noodle. The performance continued with Chechin discharging his oracular duties. And with those out of the way he was ready to frolic. After drinking many cups of wine, he tossed the fifty-pound hat above his head and adjusted it again. Then he ended his visit by dancing madly in a pile of burning straw, 'whirling like a demon' in the flames.

Several of the techniques surveyed here produce effects in the brain that resemble an epileptic seizure, though convulsions may be more or less suppressed. And these states seem particularly associated with daimon possession. Perhaps now

we can understand why the ancients thought of epilepsy as the 'sacred disease.'

Because the chthonic mind appears to be the powerhouse of sorcery, perhaps sorcery would be more effective if the chthonic mind took over, possessed the sorcerer, and performed the incantations itself in the person of a daimon whose characteristics are appropriate to the spell. That isn't an unusual event in primitive systems.

Deren told of the time a godchild of a *mambo* (Voodoo 'priestess') was gravely ill. The little girl had been treated by orthodox physicians, by herbs, by rituals; but she continued to waste away and was clearly about to die. As a last resort the *mambo* undertook a ceremony in honor of Ghede, a *loa* of the dead who is nevertheless a powerful healer. A replica tomb was erected in Ghede's honor and the ceremony was attended by other *mambos* who came to lend their strength. Ghede possessed one of the *mambos* after appropriate sacrifices and requested that the girl be brought out and placed on the tomb. 'He' then anointed her with the blood of a sacrificial goat and reached down between 'his' legs and brought forth a handful of what Deren thought was semen with which 'he' washed the child. Ghede repeated the process a number of times while singing fervently. The child lived.

The sorcerer who elects to be possessed by a daimon to do his work for him, on the other hand, is engaged in a very dangerous business. We saw that an alternate personality might kill the primary personality – including their common body – and the daimons present similar dangers. The predecessor of Sungma Balung angered the daimon Chechin by marrying against his wishes. Chechin, to express his disappointment, peevishly disemboweled him, draped his entrails on the lamaistic images adorning his private altar, and sought out a new *sungma* to serve him. The daimons are not to be trifled with. The sorcerer bold or desperate enough to try the experiment should be in the company of someone who can control the daimon and return it to its chthonic depths; that is, someone the equivalent of a Voodoo *mambo*.

The role of the *mambo* in Voodoo is not so much to summon the *loa* as to control them. Here again we see the

daimons are not gods in any European sense; one does not order gods about. And most of us would also expect any god worthy of the name to be able to manifest on his own. Nevertheless, the sorcerer tempted to try the experiment, even though he may do so in safety, must remember that it is a powerful experience and reflect on the Europeans who have fallen under the spell of primitive daimons. It is an experience to wash one's viscera; one begins to believe the daimon occupies theological space – and the reckless sorcerer may acquire a new master. Recall the warning of Thomas Mann's *Doctor Faustus*: He who believes in the Devil, already belongs to him.

It is sometimes possible for an educated Modern to adopt a system of ideas based on a world-view totally alien to science. By an enormous wrench of our minds we may succeed in effacing the imprint of our own culture and come to see the world in a very different way. But we are understandably reluctant to relinquish the scientific point of view, with its unrivaled power, and turn aside from the knowledge it has won. Nor do we need to. We may winnow the witch doctor's sorcery as economic botanists do his herbs, but it is no more a model for us than his medicine. It is unnecessary for a modern sorcerer to wrestle with demons and struggle to believe Stone Age explanations of the universe. A sorcery compatible with modern thought need have no more to do with 'spirits' than electrical engineering, and we have every reason to suppose it will eventually prove as superior to primitive practice as an airliner is to a dugout canoe. But we should not forget in our vanity and optimism that a dugout canoe may be a beautiful, practical, and ingenious creation.

Chapter 9

A different world

We usually think of sorcery in personal terms: healing and hexing, securing a promotion, snaring a lover, and similar homey concerns. And certainly these are the activities of traditional sorcery, cottage industry enchantment. Yet clearly sorcery may find employment in far larger affairs. Edgar Mitchell wrote that evidence has come to light that governments of large nations have secret projects that could result in techniques for thought probing and control. He quoted Michael Rossman: 'We are dealing with the advent of a technology which has the most awesome and complicated potentials for liberation and for tyranny in both the psychological and material domains.' Despite the euphemisms used to conceal it, that technology is what we recognize as sorcery. And if Rossman is correct, it is easy to see why nations would be interested.

The extent of their interest has only recently become known, partly from documents wrested from the US government through the Freedom of Information Act, and partly from open admissions. Colonel John Alexander, in the professional journal of the US Army, declared that 'there are weapons systems that operate on the power of the mind and whose lethal capacity has already been demonstrated.' The demonstration must have been for those with secret clearances; it was certainly not public. And Jack Anderson, a columnist in Washington well known for ferreting out disturbing secrets, exposed the Pentagon's activities in the military applications of psi. His reporter Ron McRae discovered the existence of multi-million dollar programs conducted by

the Pentagon on the uses of psi as a weapon and as a defense against 'psychotronic' weapons. But psi is also used as a defense against conventional arms. The US Navy, for example, has thirty-four psychics under contract to trace Soviet submarines. The true scope of American research in these areas, however, will probably remain secret.

And the Russians? They have shown a spirited interest in sorcery, however much they may strive to couch it in electrodynamic terms. But Soviet behavior in that as in all else is enigmatic and quixotic – they are not troubled by a Freedom of Information Act or prying reporters. Still, there are hints. In 1977 an American correspondent, Robert Toth, was arrested by the KGB in Moscow for having held meetings with a Soviet parapsychologist. He was interrogated closely on three occasions until the KGB was satisfied that Toth knew nothing of 'state secrets.' State secrets? Certainly Western scientists are usually forbidden to visit Soviet parapsychological laboratories. And a Russian parapsychologist, Edward Naumov, was apparently sentenced to a labor camp for being on terms of unseemly cordiality with Western scientists. Do Soviet researchers know something their Western colleagues do not? Congressman Charles Rose of the House Select Committee on Intelligence has no doubts that they do. He maintains that the Soviets are developing – and may have deployed – psi weapons of awesome power. And some of the Pentagon's experts intimated that the first victim of such a weapon may have been the US submarine *Thresher*, which sank and broke up in 1963. Rose thinks the US is falling behind in the military applications of psi and argues that the US should launch a large-scale crash program to develop psi weapons and defenses.

Sorcery offers heady possibilities for espionage and subversion as well. Nor can nations be faulted for pursuing research with these ends in mind. It is after all essential to consider all contingencies. It would be ridiculous to spend billions of dollars, pounds, or roubles for elaborate weapons and nothing on the 'spear of thought' that could be hurled through them all with impunity.

Are we to assume, however, that sorcery in *Realpolitik* is a recent inspiration? Or that only governments may be tempted

to help history along with a little magic? Others may have been at it for a very long time.

A few hundred years ago there was little in the way of a science of metallurgy, but that did not prevent the use of metals. For thousands of years man had been refining, casting, forging, and alloying them. Perhaps he didn't understand the scientific principles behind his handiwork, but long experimentation enabled his cannon in iron and bronze to raze cities without them. At the same time, over many centuries of experimentation, shipwrights developed the great sailing ship. Combined with cannon it made Europe the master of the world. Practical people trying to solve practical problems will, through trial and error, devise empirical techniques that work. And if they are civilized as well, these techniques may grow into a formidable technology. The question naturally arises about the possible existence of a similar body of magical knowledge that developed coevally with, say, shipbuilding, glass-blowing, or brewing, and in essentially the same way. That is, while malicious rustics rubbed spittle on dolls, there may have been people who really knew what they were doing. We have seen that sorcery may be placed on a scientific foundation. Has that already been accomplished? Is there possibly a flourishing, if clandestine, science or technology of magic or sorcery? Perhaps one as advanced beyond the simple techniques we have seen as an intercontinental ballistic missile is beyond a flint-tipped spear? It cannot be dismissed out of hand.

The existence of a highly effective system of magic must be acknowledged as possible. But how would we know of its existence? Sorcerers have always insisted on secrecy and have shrunk from recognition and its attendant fame as Moslems from ham. Poseurs of course will beg for an audience – and are occasionally hanged by it. The knowledgeable sorcerer, on the other hand, would very likely become jaded with the world's largess as he wanders freely among his less privileged fellows as a sighted man moves among the blind. Society can offer him nothing he cannot easily obtain for himself. How shall we entice him from his secure lair to be studied by our benignant scientists? Will he find being a celebrity and

appearing on talk shows an agreeable occupation? Suppose there is an able sorcerer among us who would find that proposal attractive (they may not all be intelligent) – he may have colleagues who would not approve.

Perhaps there *is* an Establishment, a gray eminence we never suspected, whose shadowy hand is everywhere. It would not have to exert itself. A little push here, a small adjustment there, and human history would unfold as it wished. That is, of course, a variation on the conspiracy theory of history – so unpopular in official circles today. At its merest mention the powers that be become as agitated as a tree full of howler monkeys. Although we know quite well our past is a cauldron of fermenting conspiracies, and they are as typically human as riots, we have grown unaccountably touchy on the subject. Perhaps in the United States that reaction stems from awkward dealings with Communists. Americans do not doubt there are millions of Communists in the world, and even a few in the United States, but for an American to confess even a passing suspicion that some may have found their way into sensitive governmental posts is a gaffe that reflects unfavorably on his intelligence, his education, and even his ancestry. Americans gave up trying to discover and convict Communists just as they gave up prosecuting witches, and perhaps for the same reasons: not because there were none, but because it was too difficult to convict them without condemning an embarrassing number of the innocent – a punctilio that has always troubled English-speaking peoples. The American contretemps of the 1950s was quite properly, if invidiously, called a witch hunt: the parallel with its seventeenth-century analogue is exact.

Conspiracies must be restricted to a very small group of people to have any possibility of going unexposed, or they must have some extraordinary means of preserving their secrecy. And a cabal of magicians would certainly possess the latter. How could such a conspiracy be unmasked? Surely it is uniquely equipped to insure its secrecy. Yet if it interferes with the world in any way, it must leave traces – if we can recognize them. Strange people may represent one such trace. From time to time people appear seemingly from nowhere, display knowledge or abilities far beyond their

contemporaries, and then disappear. But as we search out their spoor we must leave science, though not facts, to embark on candid speculation.

As natural philosophy was being transformed into natural science, the belief that it was possible to transmute base metals into gold slowly ebbed. Science was moving in a direction that would soon declare transmutation impossible (erroneously, as the twentieth century demonstrated). But there were those who did not want to see alchemical thinking abandoned. Jean Baptiste van Helmont, a prominent chemist of the seventeenth century, reported that in 1618 he met a stranger in Brussels who gave him a fourth of a grain of the 'philosopher's stone.' That was the alchemically prepared substance supposedly able to transmute base metals into gold or, taken internally, preserve health indefinitely. Van Helmont described the stone as saffron colored, heavy, and glittering like small splinters of glass. When he asked the stranger why he had sought him out, the other replied that it was to convince an illustrious scientist, whose work was an honor to his country, of the truth of alchemy. He never saw the anonymous adept again. He was, however, sufficiently prepossessed by the man's manner, charlatan though he undoubtedly was, to try the experiment.

In his laboratory at Vilvorde an assistant put eight ounces of mercury in a crucible over a fire. Following the stranger's instructions, Van Helmont added the minute fragment of stone. In about fifteen minutes the mercury was transformed before his eyes into an equal weight of the best gold – a sum of money as respectable then as it is now. Van Helmont, suitably impressed, became a partisan of alchemy and even named his son Mercurius (who was later to persuade Leibniz that alchemical transmutations were possible).

Forty-eight years later another stranger knocked on the door of Johann Frederic Helvetius, physician to the Prince of Orange and one of the founders of modern chemistry. Helvetius published an account in 1677 of a transmutation very much like that given by Van Helmont. On December 27, 1666, a stranger visited him and, after complimenting him on his latest book, asked whether he had ever prepared the

philosopher's stone. Helvetius replied that he had not, whereupon the stranger took a 'cunningly-worked ivory box' from his pocket and opened it to reveal three large pieces of a substance resembling glass – enough, the stranger said, to transmute twenty tons of gold. When Helvetius asked for a demonstration, the stranger demurred, saying that he would return in three weeks and, *if permitted*, would show him something.

He returned in three weeks to the day and invited Helvetius to walk with him. He refused to perform the transmutation, it wasn't permitted, but finally agreed to give Helvetius a small piece of the stone 'no larger than a turnip seed.' When Helvetius expressed a doubt that such a small amount could tinge more than four grains of lead, the stranger eagerly demanded it back. 'I complied,' Helvetius said, 'in the hope that he would exchange it for a larger piece; instead of which he divided it in two with his thumb, threw away one half, and gave me back the other, saying: "Even now it is sufficient for you." ' The stranger said he would return in the morning, but he was never seen again.

Several days later, January 19, 1667, Helvetius decided to try the substance at, he said, his wife's insistence. After preparing six drachms of lead, he cast the wax-covered particle of stone into the crucible, which soon began to hiss and effervesce. And after fifteen minutes the whole mass of lead had turned into the finest gold. Helvetius immediately took it to a goldsmith who at once declared it to be excellent gold and offered to buy it. The Master of the Mint and Brechtel, a goldsmith, also conducted tests on the gold and in the process an additional two scruples of silver were transmuted into gold.

Baruch Spinoza was acquainted with Helvetius and was familiar with the transmutation. He talked to Brechtel and others present at the test who assured him that the gold had transmuted a quantity of silver. Spinoza remarked that the same alchemist had done something similar in nearby Amsterdam.

Van Helmont and Helvetius were among the foremost scientists of their times and their integrity is unquestioned. They performed these transmutations in their own laboratories,

with their own materials, and the stranger was not present. Their transmutations, furthermore, involved the entire quantity of base metal in the crucible; that is, more than just a few grains were transmuted, as generally happened when confidence men performed 'transmutations' by palming a small amount of gold into a crucible. In the seventeenth century these transmutations were still thought by some to be theoretically possible, marvelous but not miraculous. We think they are impossible. But they occurred . . . or seemed to.

Who were the mysterious adepts who bestowed samples of the stone on distinguished scientists? We know a little about them, perhaps, but not much. One, calling himself Philalethes, appeared in the early 1600s. He traveled about the world, including America, and wrote a book, *The Open Door into the Secret Palace of the King*, that was Isaac Newton's bedside reading (his copiously annotated copy is now in the British Museum). Philalethes was probably the one who gave Helvetius the powder, since we know that he was in Amsterdam in 1666. Is he possibly the same man who gave van Helmont the powder in 1618? Helvetius was told the ivory box contained enough of the stone to transmute twenty tons of base metal, the same declaration made to van Helmont. Whoever Philalethes was, and no one knows, he simply disappeared. He was constantly on the move and derived no benefit from scattering the stone about. The same can be said of the two strangers. Either several furtive adepts succeeded each other, each possessing the secret of the stone, each engaging in nothing but constant travel to persuade others of the truth of alchemy, or there was only one man – who didn't age between 1618 and 1666.

The next stranger, Lascaris, appeared toward the end of the seventeenth century and was active during the first forty years of the eighteenth. During that period every transmutation performed by every pseudoalchemist in Europe was accomplished with a powder provided by a man fitting Lascaris's description. He was reported throughout the time as a man of uncertain age, neither young nor old. Although his actual appearance varies in different reports, other characteristics indicate that it was probably the same man each time.

He claimed to be Greek and spoke a number of languages fluently and volubly. That is the description given by Councillor Dippel, one of the best-known chemists at the beginning of the eighteenth century. Dippel said that he was between forty and fifty years of age; the same age assigned to him during his last appearances thirty years later.

At the beginning of the eighteenth century a Prussian gentleman obtained some of the powder from Lascaris and performed a transmutation for Frederick I. Unfortunately, Frederick refused to believe he didn't know how to make the powder and removed his head. And in 1701 a nineteen-year-old apothecary's assistant in Berlin, Johann Böttger, was given a quantity of the powder by Lascaris. Lascaris told him not to reveal where he got the powder, which was to be used only for demonstration, not profit, and not to use it until he, Lascaris, had departed. Böttger then performed several transmutations for his master and others. Frederick William I heard of them and Böttger fled to Dresden where he performed a transmutation in the presence of the Elector of Saxony, Augustus II, King of Poland. Böttger was made a baron and began to live lavishly. But eventually his supply of powder was exhausted and he was imprisoned; the Elector would not believe that he didn't have the secret of the stone. While in his laboratory-prison he discovered a means of making porcelain, almost as valuable a secret as the stone, and regained the Elector's favor.

Meanwhile Lascaris chose two more apothecary's apprentices as emissaries. The first, Hermann Braun, performed a transmutation for the highest scientific authority in his vicinity, Dr Horlacher of Münster. Horlacher took every precaution; he bought a new crucible, obtained mercury from one of his friends, and chose an old lead pipe that had been in his possession for years. Braun did nothing but add the tiny ball of wax containing the powder. After heating it for ten minutes or so, both were turned into gold. Braun used up the remainder of his meager supply of powder and is dropped from the annals of alchemy.

Lascaris was next in Bohemia where he met Councillor Liebknech. He described Lascaris as a middle-aged man who was highly cultured, speaking at least Greek, Latin, French,

German, and Italian fluently. Lascaris performed a transmutation for Liebknech to persuade him of the truth of alchemy and gave him the transmuted gold as a souvenir.

Popping up here and there, leaving a trail of the powder behind him, Lascaris arrived in Vienna in 1717 to arrange a meeting of well-known people, including scientists. A detailed report, one of the few official accounts of a transmutation, was prepared by Councillor Wolf-Philip Pantzer of Hesse. The experiment was performed at the house of Count Charles Ernest von Rappach, Commandant of the fortress of Vienna, and the report was signed by the Imperial and Bohemian Vice Chancellor, the Privy Councillor to the King of Prussia, and others. One of the visitors brought a minute amount of the powder wrapped in a piece of paper. Metals were carefully weighed and prepared. The powder was added and the metals turned into gold; one part of the powder transmuted ten thousand parts of base metal.

Lascaris continued his propaganda work until he was befriended by the Countess Anna-Sophia von Erbach. In repayment he transmuted her household silver (why not her plumbing?) into the finest gold ingots. She was separated from her husband, and when he heard of the transmutation he sued her for half the gold on the basis that it was an increase on assets shared in common. The Leipzig court disallowed his claim in saying that since the silver belonged to his wife, she was entitled to the gold. But that was Lascaris's last known transmutation trick, and in the 1730s he vanished for good. Or at least he vanished as Lascaris.

The age of alchemy was passing, and with it the mysterious adepts. Who were they? Or, possibly, who was he? Circumstantial evidence indicates that it may have been the same man. Absurd? Of course – but so are alchemical transmutations. After all, the philosopher's stone was supposed to preserve life indefinitely as well as transmute metals. Nothing in our understanding permits it to do either, but since it clearly, if impossibly, accomplished the one, we should hesitate to ridicule its power to accomplish the other.

Whether we regard these people as one man under many aliases or different men pursuing the same goal, we remain on the horns of a dilemma. If there was but one man on a

singular mission, he didn't age; if there were a number who succeeded each other over a span of more than a century, we have clear evidence of a long-term plan being carried out – in short, a conspiracy. But for what? Philalethes and Lascaris kept on the move, gathering proselytes for alchemy and apparently deriving nothing from their art. Indeed, they gave gold away. Whatever their purpose, during their wanderings they managed to influence many of the founders of modern science, directly or indirectly – not to mention kings.

Why were they so interested in promoting or preserving the philosophical basis of alchemy? If they really wished to promote alchemy, why did they not simply divulge the secret of the stone's preparation instead of performing the famous transmutation trick? That would have settled the issue. They tried to show, however, only that alchemy could succeed if scientists persisted in its study, which we may doubt. If we admit the possibility of the stone, which it seems we must, we must also admit that it was impossible for the physical science of those days. Yet that admission requires: (1) a secret physical science that evolved parallel with our own but along radically different lines, (2) an alien science in advance of today's (space brothers?) – or (3) the operation of something that didn't concern physical science at all.

The period in which they were active was the cradle of modern science, but alchemy, such little of it as we can understand, is totally foreign to modern science. If the adepts were intent on preventing the development of science, it was possibly an apt plan – it diverted the thinking of the ablest people of the time. What might Newton have done had he not spent far more time in pondering alchemy than celestial mechanics? On the other hand, in some inscrutable way the strange theories and directions of the alchemical texts may have sparked the thinking that led to the Newtonian universe. And physics as well as chemistry may have an alchemical mother. Who were these adepts anyway?

Although history glosses over them, these events occurred. Perhaps they are ignored because they seem meaningless and incomprehensible. In many ways they disquietingly resemble the UFO phenomena of our own day – things just on the fringe of the intelligible, but erratic affairs like transmutations.

We never got the secret of the stone and, if the parallel holds, we are unlikely to get the secret of the UFOs. We shall merely be treated to the fact that they, whatever they are, exist. And the evanescent bearers of the stone, whoever they were, smell strongly of a conspiracy brewed by people who are not a part of our ordinary world.

Mysterious people appearing and disappearing at the cutting edge of science or quasi science have continued down to our own day. But they do not confine themselves to science. Rudolf Hess, born in Egypt in 1894, was not an everyday Nazi, but a founder of the party and one of Hitler's appointed successors. Occult sources encouraged him to arrange a peace between Great Britain and Germany, and with that in mind he flew to Great Britain where, to his surprise, he was treated simply as a prisoner of war. His sanity appeared questionable at his trial and he was examined closely by G.M. Gilbert, the psychologist for the Nuremberg trials and author of *Nuremberg Diary*. Gilbert discovered that Hess had amnesia, a hysterical symptom, but only he knew that Hess complained of a mysterious invisible force that had been used to 'becloud' his mind. Gilbert said that apart from making some notes on his case he dismissed it from his mind.

Later, in the wilds of southern Mexico, Gilbert met a distinguished-looking stranger who appeared to have an excellent knowledge of science and world politics. Without knowing anything of Gilbert's background, he 'suddenly started talking about his having influenced Rudolph Hess' mind through remote control to undergo amnesia.' That shocked Gilbert because he thought he was the only one in the world who knew that Hess complained of that very thing during his confinement at Nuremberg. 'I had simply put it down as a symptom of paranoia,' Gilbert said. 'Now here, out of the blue, comes a doctor who says he had used remote control influence . . . something of a hypnotic nature . . . on Hess. . .'

We might allow the possibility that two people who unknowingly shared a rare secret could meet by chance in New York, London, or even Disneyland – but in a wilderness? Even then it would seem quite improbable that a brief

conversation would turn to such queer events. It is difficult to accept their meeting as just a coincidence. But if not a coincidence, then what? It is a puzzle that anyone would want to 'becloud' Hess's mind (why not Hitler's?) and another why, if he did, he should tell the only other person who knew of it.

Peculiar people doing unaccountable things may be found anywhere – even in prison. Donald Wilson, a psychologist, conducted research on narcotics and crime at Fort Leavenworth prison through an appointment by the United States Public Health Service. Fort Leavenworth, let it be noted, is not a country-club prison, a green campus girdled by a modest fence such as one erects to discourage stray dogs and vagabonds; it is a gloomy, massive block of stone and steel studded with guns and searchlights.

Wilson met a very unusual prisoner in that grim fortress whom he called Hadad (a pseudonym). Hadad was a statuesque, handsome black man reputed to be part Hindu Indian and part Senegalese; Wilson thought he resembled the latter. Hadad said that he had studied at Oxford – he affected an Oxonian elegance – but his background nevertheless remained a mystery because there were no authentic records on him; they were always changing or disappearing, especially when he was being transferred from one prison to another. Only one bit of Hadad's recorded history seemed reliable. At one time he had been in a car when the police sprayed it with machine gun bullets. He was removed unharmed.

Wardens dreaded having Hadad in their prisons; he disrupted morale and too often left the wardens doubting their senses. Rumours of voodoo surrounded him; he had a reputation for magic, hypnosis, and an uncanny ability to escape. To the prisoners' amusement and the guards' astonishment, Hadad escaped from handcuffs, straitjackets, and cells at will. Although he would leave prison, he wasn't attempting to escape; he always returned to continue his imprisonment. Disappearing from his cell or securely locked, guarded vehicles, he would later appear at the prison gate requesting admission, apologizing for having been lost or detained on business. It was the aftermath of one of these excursions – to a concert in nearby Kansas City – that first brought Hadad to

Wilson's attention. After he returned to prison he explained to the warden that he had not attended a concert for some time and that it wasn't far away. The warden grumbled that his sentence excluded such privileges. Hadad replied: 'But sir, I came back, as I always do. I have no intention of avoiding my sentence. Whom did I harm in doing this? No one even knew I was gone.' The warden gave him fifteen days in solitary confinement for his impertinence.

Wilson and Gordon, the prison physician, were called to visit solitary confinement because Hadad hadn't used his sanitary facilities, a bucket, for an entire week. They called to Hadad after arriving at his cell, but he didn't answer. A guard, Thompson, then opened the steel door to reveal Hadad's body hanging from the bars with a guard's belt as a noose. Gordon ordered him cut down and Thompson called a relief guard, Red, to help. Gordon noticed that Red's belt was missing and asked him what was holding up his trousers. Red's hands flew to his waist and then he relaxed, satisfied that he still wore his belt. Although it was about Hadad's neck, Red saw it as a piece of rope and thus experienced two complementary hallucinations. Gordon examined Hadad, pronounced him dead, and ordered Thompson to put him on ice until an autopsy could be held on Sunday.

On Sunday morning Gordon, Wilson, Fellows (a surgeon), and a consulting neurologist gathered round Hadad's body in the morgue. Just as Fellows picked up a knife to make an abdominal incision, Hadad 'stirred, and slowly rose to a sitting position on the slab, as if he were propelled by invisible gears.' Fellows dropped his knife and quickly crossed himself as Hadad opened his eyes and said, 'Gentlemen, I would rather not, if you don't mind.' The doctors were stunned; they all thought Hadad was scientifically dead. By the rules laid down in the textbooks, Hadad had been dead for three days, and Hadad himself irreverently pointed out that it was on the symbolic third day that he rose.

Hadad later demonstrated to Gordon and Wilson that he could enter a trance so profound that it was indistinguishable from death. Gordon carefully examined him again and pronounced him dead by all tests; he lacked respirations, heart sounds, or corneal reflex. And, like a corpse, he didn't bleed

when cut. It was not an ordinary trance or 'simple suspended animation' – Gordon said all the signs of death except putrefaction were present. The fact that he could stop all his bodily functions is unusual, but we know it is possible. Yet when these functions cease, permanent death is supposed to follow within minutes. Hadad should have remained dead.

Gordon and Wilson sent for Hadad the morning following the 'autopsy.' He had expected it and anticipated their questions by speaking first: 'You are, of course, interested in the phenomena of the weekend. It was nothing. I did it only as a means of coming to your learned attention.' Observing that they were skeptics in need of proof, Hadad proposed a test of his powers. He noted that among the epileptics on the psychopathic ward were several hopeless cases who suffered seizures daily and were beyond medical help. The doctors agreed that it was so. Hadad quietly said that he would demonstrate the use of 'telepathy in healing at a distance' by delaying all seizures in the psychopathic ward, including those of the deteriorated cases, from that moment until the same hour three days later. Because he sometimes left his cell without permission, Gordon asked him where he would be during the test. Hadad smiled and said: 'I will stay wherever you wish, sir. In my solitary cell, perhaps?' Hadad indicated his thanks and murmured that he could reveal to them telepathy, healing, and psychical control of the body at a distance.

The epileptics were watched closely night and day. All remained quiet until, at the specified hour three days later, their seizures resumed with the customary violence. Gordon and Wilson were convinced Hadad was using some form of hypnotism and thought that science could explain most of Hadad's magic (as it can), but they admitted that science could not reproduce it on his scale.

Because he could leave prison whenever he wished, why did he remain? the doctors asked. Hadad replied that he was on a mission and added that since it was almost complete and he would soon depart 'this sphere,' he would like to confer some of his healing power on Gordon and Wilson in a secret blood rite according to his Order. The doctors were curious about whose blood would be used and how much. Hadad made a last effort to persuade them by saying they would

never be the same after the initiation rite and that, among other things, they would be 'ageless and timeless.' Although Wilson said they could believe it, they quailed before the adventure lest they fall under Hadad's spell and be made laughing stocks of the prison – or worse. They didn't trust Hadad, and not without reason.

The incidents surrounding Hadad were given relatively little space in Professor Wilson's book, most of which is devoted to the sociology of prison life, the activities of much less remarkable prisoners, and a discussion of narcotics abuse. Even a motion picture based on Wilson's book didn't include Hadad among its cast of characters. He merited more than a few paragraphs; he should have been the subject of an intense study. Time and time again scientists will note that sorcery is a scientific possibility and drop the matter. They may even be treated to an extravagant display of power by a sorcerer in person, as Wilson was, without being tempted into a more careful investigation.

Wilson implied that Hadad was only an unusually able hypnotist, but there is evidence that he thought something more was involved. Hadad said he would 'bestow his mantle' – not teach them. Wilson said he believed it and even seemed to accept that they could be made 'ageless and timeless.' This scarcely coincides with his opinion that Hadad's powers were simply hypnotic; hypnotic techniques are *learned* – they are not conferred by a rite. Nor is one changed by them in the way that Hadad meant and Wilson understood. Hadad said 'initiation,' and he no doubt meant it.

Hadad's powers are what most people think of as mysterious. Yet there is a deeper mystery. Hadad could obviously have had anything that people are supposed to want: a great fortune, luxury, fame, or open power – and he would have been enormously successful in the guru business. Even as an entertainer he would have dwarfed competition, and he certainly had a histrionic streak. Was he insane? There is no evidence that he was. At all events the things people usually want were evidently of no importance to him. He wanted to be in prison. He plainly did not have to remain there. Why did he stay? We are reminded of Philalethes and others whose unfathomable missions scintillate beneath the surface of

man's past. Did he develop his powers alone, or were there others like him? Superior to him? What of his 'Order' – did he belong to a group? Again the questions: Where did he come from? What was he doing and why? Who was Hadad anyway? Riddles without sensible answers.

Of course we have no reason to suppose that Hadad was unique; there could well be others of his kind, or even, as he implied, a society of them. And if there is a society, we may as well confront the probability that it – like most human societies – is interested in directing the flow of human events, possibly by gently tugging a political or military string now and then. After all, sorcery *could* be used in the larger affairs of life, and it would be shortsighted to discount entirely the possibility that an association of sorcerers is concerned with world events, perhaps in ways and for purposes we cannot imagine, and practices a sorcery whose powers beggar any that we have considered here. If these speculations are far-fetched, they at any rate remind us that sorcery may provide more than a balm for the ailing, a charm for the lovelorn, or a sword for the vengeful.

Alchemists and Hadads – can we be sure that the world is really run the way we have always supposed? Sorcery exists. At least sometimes it works. And a door thought closed in the time of Cotton Mather has been ajar all the while.

Key to principal sources

Key to principal sources

Because a very large number of sources were consulted, and it would be impracticable to cite them all, only those vital to the thesis of the book or having some special interest are included in the list of principal sources following this key. To identify a source, turn first to the Key, which lists chapter by chapter and section by section (sections indicated by italicized numbers), and in the order of their appearance, identifying words or names together with the numbers of their sources in the list. If it does not appear in the Key, turn directly to the author's name in the alphabetized list. Note that in some instances an author with one or more works cited in the list may also have materials referred to that appear in the work of another author.

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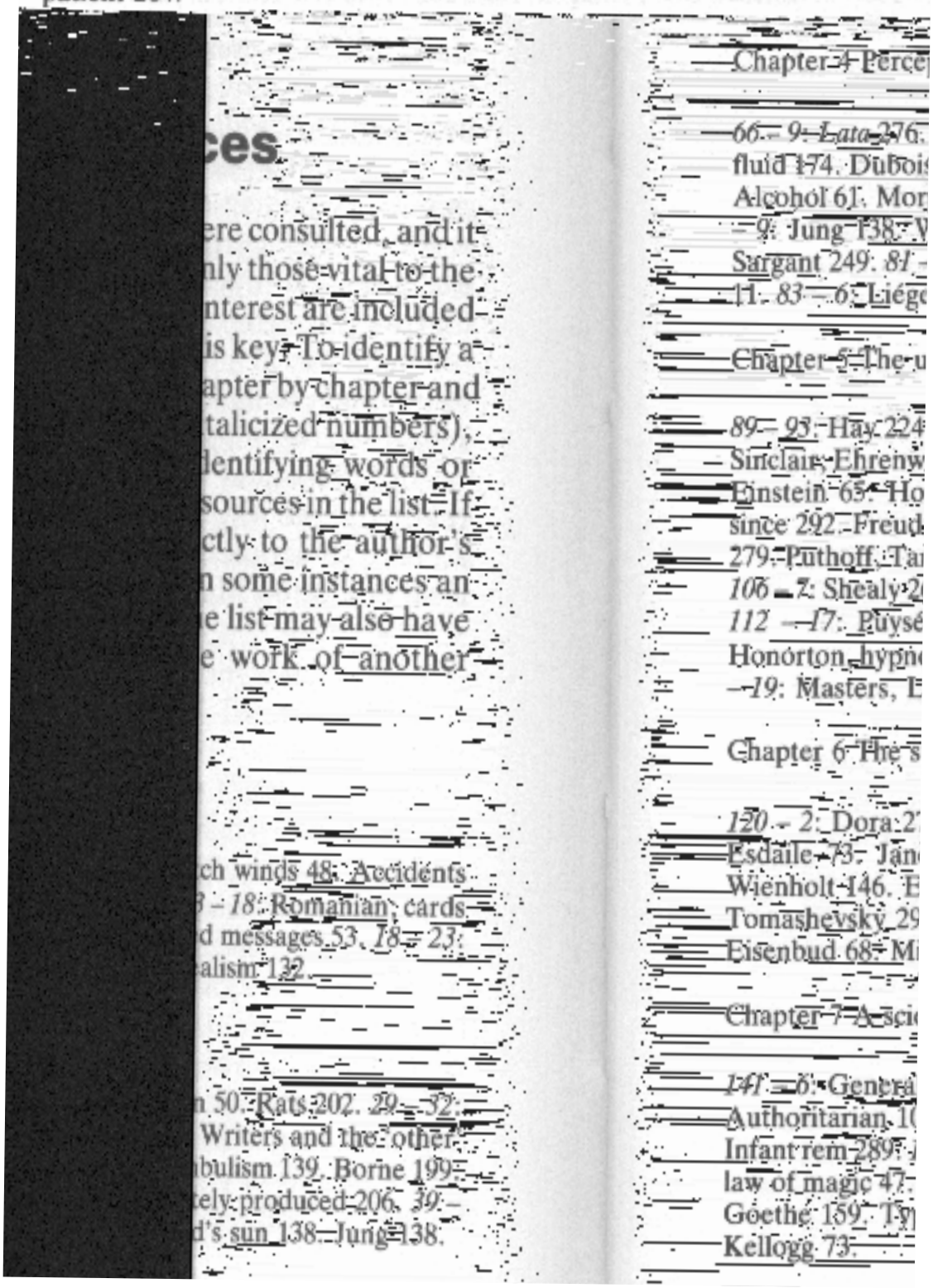

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