

The Physiology of Faith

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'As for the bodily temper of man and his Brain . . . a very little distemper of the brain . . . is enough to represent Spirits, Angels and Devils, Sights and Stories of Heaven and Hell to the Fancy . . . which sober kind of madnesses and delineation (is) little understood vulgarly'.

Burton's *Anatomy of Melancholy*.

I feel very honoured indeed at being asked to give the famed Maudsley Lecture for 1968. And I know I shall be carrying out the wishes of the great Henry Maudsley himself if I try to discuss yet again that ever-narrowing threshold between man's supposedly metaphysical mind and soul and his somatic body and brain. One of Maudsley's own great interests was in re-examining some of the happenings generally thought of as part of the spiritual realm of man, and trying to look at them afresh in a predominantly neurophysiological setting. His book *Natural Causes and Supernatural Seemings* set the pattern for much later work on the same topic.

I am also aware, like him, that I am trespassing on very dangerous ground which is full of pitfalls for the unwary walker. Actually Maudsley was interested in the very subject I want to discuss today. In the as yet unpublished diary of the demonologist Aleister Crowley for August 1903, he says that 'Dr. Maudsley, the greatest of living authorities on the brain, explained to me the physiological aspects of Dhyana (unity of subject and object) as extreme activity of one part of the brain; extreme lassitude of the rest. He refused to localize the part [of the brain concerned]. Indulgence in the practice he regarded as dangerous, but declined to call the single experience pathological'. How right Maudsley was even then, and, as in so many other matters, how ahead of his time, will, I hope, be shown clearly in this Lecture.

For twenty years now much personal research on the methods used to create or maintain a whole variety of religious and secular beliefs, true and false, has included visits to many parts of the world lecturing on, studying, photographing, and otherwise observing all the varied ways in which people of all nations and creeds seem to be able to be made to believe passionately in the existence of, and in the personal intervention of, many different kinds of gods, and of good and evil spirits, in their day-to-day affairs. My visits abroad were also to try to examine what seemed to be similar neurophysiological phenomena occurring during states of supposed 'possession' by a whole variety of different gods and spirits in many different parts of the world. These phenomena seem also to have helped in the creation of states of absolute and certain faith in the existence and powers of all sorts of gods, demons and spirits by those so possessed. Exactly similar types of possession, producing exactly similar states of intense faith, were being explained in very different cultures as being due to the intervention of the Holy Ghost, or perhaps Voodoo gods, or Abyssinian 'satans', or Sudanese 'zars', or Zambian 'pepos'. Similar findings to those seen and discussed today are also reported amongst the devotees of both the Mohammedan and Hindu faiths and in many other religions all over the world. Ancient history also is full of descriptions of happenings almost exactly similar to what can be seen and still studied today in many parts of the world.

It was near the end of this research, and while in Barbados watching the funeral of the mother of a negro Spiritual Baptist pastor, that my mind was definitely made up about the subject in this Lecture today. As the coffin was

lowered, the grave filled in, and the flowers reverently laid on it, the congregation, instead of sorrowing, sang, clapped their hands, rejoiced, and 'tromped' their happiness at the absolute certainty that the dead one was at the start of a new life, and was going straight on to a far greater happiness in the heaven of a spiritual world. And at two later chapel services of the same sect, while studying and filming all the varied manifestations of 'possession' by the Holy Ghost which were to be seen there in so many diverse bodily disturbances, I myself also almost became suddenly convinced of the validity of their faith, and of their own certainties of belief that their dead ones, because of their faith, were going on to certain salvation, even if suffering eternally in hell was also predicted for so many of the rest of mankind. My own suddenly-induced near-faith was very short-lived. But these very poor and deprived coloured people, enjoying so little of this world's goods and pleasures, did seem to possess for themselves 'the absolute key to faith' which had enabled them to unlock the door of what seemed to them to be life's real purpose and meaning. They seemed also to have acquired a supreme dignity, poise and a strength of absolute faith which would have enabled them, if it were necessary, to have gone into a Roman arena to be eaten by the lions while still praising God and remaining certain of attaining all the greater joys and rewards to come in a future life.

Yet, despite the possession of such absolute faith in such rewards and punishments to come, the chance of there being some special after-life for a few specially selected inhabitants of a very small planet amongst millions and millions of other greater and smaller planets and other terrestrial bodies, must be statistically very small indeed. And that it will be such a happy one is a certainty that can only arise from a pure and absolute faith which is without any scientific basis or reason. The possession of such states of faith is necessary not only for the holding of such exclusive religious beliefs; it is paradoxically needed to a lesser extent to support so many of all of our own day to day much more ordinary beliefs and behaviour. Faith is especially necessary in our work as physicians and psychiatrists. Without the often uncritical

faith of our patients in the treatment we give them, and our own sometimes much too uncritical faith in our personal work and viewpoints, we could no longer as effectively practise our healing art, however high our scientific skills might be. Psychiatrists, especially, have had for so long now to do their work with no scientific certainties at all to guide them in their treatments but only often quite artificially induced faith in them. And it is certain that many of our present treatment faiths and viewpoints will prove to be as completely wrong in the years to come as so many other psychiatric treatment faiths have proved to have been in the past. Yet faith in what we are doing still seems to remain absolutely essential to many of us in our work, whatever nonsense it will make to future generations of psychiatrists. And this is the basic dilemma which faces so many in our own specialty and so many other people as well in so many other differing walks of life.

Sometimes, but unfortunately all too rarely, faith is really based on scientific certainty. But I do not wish to discuss the physiology of this particular sort of certain faith today. Rather, I want to talk about the sort of faith which as yet rests on no sure scientific foundation, may be experienced for no valid scientific reason at all, may be conveyed from one person to another against all the scientific odds as to its correctness; and also in face of the fact that all the rest of the individual's beliefs, practices and more scientific judgements and beliefs may be diametrically opposed to the one particular article of faith to which he now holds so firmly. And if in this Lecture I choose mainly some aspects of religious faith to illustrate my main theme, it is only because it is in this sphere that the subject has been most fully explored and documented. All I shall say, however, may be applied equally to many other sorts of faith, such as, for instance, the psychoanalyst's absolute and unshakeable faith in the existence of a highly sexualized Freudian subconscious mind. This remains entirely without scientific proof, and such a certainty and faith is only generally acquired over months on the psychoanalytic training couch. And many other certainties of secular faith can be acquired by the methods to be discussed today, and are then

held just as tenaciously despite all the scientific evidence which may suggest their total falsity.

Pascal thought that there were three roads to the acquisition of an uncritical belief or a faith: these were reason, habit and revelation. It is the physiology of the 'road of revelation' that I want to discuss perhaps more than the other two today, though they may well sometimes all overlap. Benson also called such faith a 'divine operation wrought in the dark even though it may seem to be embodied in intellectual argument and historical facts'. It was also St. Thomas Aquinas who insisted that it was faith which 'induced a reasonable assent to things unseen,' and that 'the light of faith makes us see what we believe'. Kierkegaard, whose philosophical writings are so appreciated today, repeatedly insisted that real Christian faith can only result from 'a leap into the unknown' and 'a jump into the abyss' and he always stressed the tremendous differences existing between knowledge and faith. Yet while faith may not really be strong enough to move mountains, its power over the mind of man still at times remains absolutely overwhelming. Cardinal Newman was right when he said that nobody becomes a martyr for a mere conclusion or for an opinion. 'It is faith that makes martyrs'.

In discussing the physiology of such faith I specially want to emphasize the possibility of inducing states of brain activity leading on to certain coincidental states of thinking, when ideas which enter the human brain at the time are subjected to few of the normal criticisms and 'sorting-out' and computing processes which accompany the receipt of most other impressions by our brains in our more ordinary day-to-day living. Normally, everything we see, hear, and feel is received by the brain and then compared and correlated with all the other recorded experiences, past and present, which may have any bearing upon it. The brain then has to set about 'computing the data' and deciding on the truth and importance of the new information received, based on its past experiences and accumulated records of knowledge. When, however, it is desired to induce states of faith, it seems that the brain can often be put into quite a different condition, so that it suddenly and quite uncritically starts to accept

ideas, thoughts, and happenings which may make nonsense and be against all the rest of the person's ordered and computed knowledge. As a very good example, somebody with excellent judgement in everyday business and social matters, may—generally after some overwhelming emotional experience or a debilitating physical illness—suddenly come to believe that all the secrets of the history of the world and its future are locked up in certain mathematical equations built into the construction of the great pyramids in Egypt some thousands of years ago. Large parts of his life may then be spent investigating further this suddenly and irrationally acquired faith in pyramid prophecy, and in proving its, to him certain truth; and in trying to make every happening fit his newly acquired faith. Its probable falsity is never questioned in the way that the same person will so carefully question the truth, falsity and importance of all the other everyday happenings of his ordinary life.

John Wesley, for instance, in his great revival movement in the eighteenth century, found the means of making large numbers of people, who had often previously been totally uninterested in any religion, suddenly become absolutely certain of, and accept, a state of faith which he described as 'the Demonstrative Evidence of things unseen, the Supernatural Evidence of things invisible, not perceivable by the Eyes of Flesh, nor by any of our natural senses or faculties'. He went on to report that following the sudden acceptance of this particular type of faith many people become 'saved from all Uneasiness of Mind, from the Anguish of a wounded Spirit, from Discontent, from Fear and Sorrow of Heart, and from that inexpressible Listlessness and Weariness, both of the World and of ourselves, which we had so helplessly laboured under for many Years'. In fact, it is on indisputable record that many did so become completely changed persons following the sudden acquisition of this particular religious faith. And there is little doubt that what I hope to show is a sudden physiological induction of such a state of faith can sometimes be as effective as are some of our modern psychiatric treatments, such as the abreactive, shock or drug therapies for anxiety and depressive illnesses.

Wesley insisted that the acquisition of this sort of faith was practically always a sudden process. It generally had to be brought about by the induction of states of great anxiety, fear or mental conflict, often about the existence of a hell hereafter, and the impossibility of salvation from hellfire except by the obtaining of this sudden faith. The inherent sinfulness, inherited from Adam, of all the inhabitants of the earth, and their own helplessness to save themselves from the wrath to come, even by a continual life of prayer, service or good works, was always emphasized to heighten the penitent's anxiety.

The sudden and desired change, with the acquisition of a 'saving' faith, generally took place only under tremendous emotional pressures of guilt, anxiety, and feelings of personal helplessness and impending disaster. They might occur during the heightened emotional frenzy of a religious meeting itself, or later, as a result of the spiritual struggle induced, while the person was at home alone, his mind still dominated by the urgent need for a solution one way or the other. Truth or falsity and rational thought may play very little part indeed in faiths for which people are later prepared to be literally or metaphorically burned at the stake if necessary, whether these faith-acquired beliefs be religious, scientific or political.

With our present paucity of real knowledge of how the brain properly works, and what are its built-in physiological and computing mechanisms, and just how sudden alterations of psychological behaviour and thoughts are related to sudden alterations in brain function, we are still greatly in the debt of Pavlov for some of the best repeatable scientific experimental work carried out along these lines. Few people have been able to explore as accurately as Pavlov has those correlations of alterations of behaviour with alterations of brain function, or have carried out these experiments in such a way that the work done and reported on can be repeated by other workers in any laboratory in the world. His main basic experimental findings have in fact been confirmed wherever they have been re-tested. For many years now, Russian and other physiologists have also been at work showing that the results Pavlov obtained in animals

are also, as he suggested, mainly applicable to the more complicated animal, man himself. Pavlov always deplored that in so many of us there was 'still rooted the dualism which regards soul and body as being in some way separate'; of course, he insisted, 'such a separation is unthinkable from a biological point of view'. Henry Maudsley thought just the same. And in this Lecture an attempt is going to be made to try to link soul and body more firmly together in the matter of 'acquired unsubstantiated faith', using some of Pavlov's generally confirmed neurophysiological findings to help to illustrate many of the matters that will be discussed.

What was Pavlov's main contribution, throwing so much light on matters to be discussed today? I have already written about these at length in my *Battle for the Mind*. In essence, he showed that when the nervous system of the dog, and this applies equally to man, is put under varying degrees of psychological and physical stress, changes in brain function may occur which alter the way in which the environment, either external or internal, is received and recorded by the brain acting as a computer. Depending on the type of nervous system affected, and the amounts of stress and induced conflict, sooner or later the brains of both dog and man retreat into varying degrees of 'protective' inhibition and dysfunction. The first stage of such protective brain inhibition is what Pavlov called the 'equivalent' phase of brain activity. Here all varieties and strengths of outside stimuli produce the same brain responses, so that the individual now gets the same amount of emotional feeling whether he is given a thousand pounds or sixpence. The next phase of induced brain inhibition is the 'paradoxical' phase. Here the patient receives a greater emotional stimulus and experiences far greater emotional feelings from a small stimulus than from a much larger one. In this state people may get intense emotional satisfaction from quite minor happenings while remaining indifferent to overwhelming blows of fortune which normally would cast them so deeply down. Finally, and most relevant to the subject of this Lecture, we come to the two last and most interesting inhibitory brain phases of all. The

first is the 'ultraparadoxical' phase of brain activity, in which many of our positive conditioned responses suddenly become negative, and all our previous negative conditioned responses suddenly switch to positive. Both dog and man then start to hate the persons and mode of life they previously loved, and start to become attached to ideals, faiths, and persons they previously despised. This inevitably results in the break-up and often dramatic alteration in many of the ideas, faiths and interpersonal relationships of the individual concerned.

It is in this last ultraparadoxical phase that Pavlov also insisted that 'feelings of possession' suddenly start to occur which serve to create so much faith. For instance, a person thinking about God suddenly feels instead that he has suddenly become possessed by Him, or has become part of Him. Somebody fearing sexual assault from the outside likewise suddenly feels himself or herself in the process of being actually assaulted sexually.

Together with this most disturbing 'ultraparadoxical' phase of brain activity there is another one which is very relevant to our discussions today. This is what Pavlov described as the 'hypnoidal' state of inhibitory brain activity. A state similar to the hypnotic state in man supervenes. And it is mostly in this particular stage of abnormal brain activity that the brain stops computing critically all the impressions then being received by it. New impressions, new commands, new ideas become suddenly imperative in their need of acceptance, and ring absolutely true; and, moreover, are often completely immune to all the normal processes whereby the brain examines critically most of the new impressions received, compares them with all its stored impressions and experiences, and decides, on the basis of past knowledge and present balanced judgements, whether the new ideas are likely to be true or false. New ideas can then be accepted and believed in which are totally at variance to all the individual's other past and present experience and belief. The two sets of contrasting ideas and belief then seem able to coexist together in the brain for sometimes years and years on end.

Breuer, in the famous book he wrote in collaboration with Freud, quotes Moebius as

saying (1890) that 'the necessary condition for the (pathogenic) operation of ideas is, on the one hand, an innate—that is, hysterical—disposition and, on the other hand, a special frame of mind . . . It must resemble a state of hypnosis; it must correspond to some kind of vacancy of consciousness in which an emerging idea meets with no resistance from any other, in which, so to speak, the field is clear for the first comer. We know that a state of this kind can be brought about not only by hypnotism but by emotional shock and by exhausting factors'.

One or two of Pavlov's other experimental findings concerned the effects on the nervous system of various physiological and psychological measures bringing about debilitation, which hastened the break-up of normal thought processes and patterns. Prolonged excitement of the nervous system, the inducing of insoluble mental conflicts, the bringing about of mental tiredness, excessive strain, or extreme fatigue in a variety of ways, all tend to usher in the phases of abnormal inhibitory brain activity already discussed. Very strong dogs, who could not be broken down by the conflict situations and excitement artificially created for them, might only break after they had later been physically debilitated, or had had their metabolism altered in other ways and then the same disturbing stimuli reapplied. Prolonged fasting, or gastrointestinal upset, a severe fever, or interference with glandular functions such as castration are some of the most effective methods Pavlov found for getting at and altering the behaviour of his strongest and previously most stable dogs. It has been proved to be just the same in man. Furthermore, in the strongest of his dogs, once he had brought about an abnormal pattern of behaviour by some physiological trick, he found shortly afterwards that the pattern implanted was very difficult to get rid of again. The very strength of the dog's nervous system seemed to help to maintain the new patterns of brain activity implanted under such stresses. And here again similar findings have been seen repeatedly in man himself.

There was a final stress which could disrupt all the animal's previous conditioning, break up implanted patterns of behaviour, and so allow new ones more easily to be put in their

place. This was a state of great excitement and fear, carried even beyond the point of ultraparadoxical brain activity, which finally resulted in the total 'transmarginal' collapse and temporary total inhibition of much brain activity. This occurred, for instance, in the Leningrad flood of 1924, when the dogs were trapped in their cages and were swimming about at the very top of them when finally rescued by a laboratory attendant. When the animals were taken out of their cages just in time to save them from death from exhaustion, excitement and drowning, it was seen that some had gone into a state of stupor and total emotional collapse. These were found on retesting to have had all their recently implanted conditioned responses dramatically abolished. New ones were later more easily put in their places. The dogs that had met the frightening stimulus by prolonged excitation and had not gone over into final transmarginal inhibition had not had their reflexes so destroyed. But all the dogs had afterwards become highly sensitized to the agent of their disruption. Now Pavlov only had to show visitors like Sherrington the effects of allowing a trickle of water to run under the door to demonstrate that these dogs, although apparently back to normal, were still highly sensitized and conditioned to this stimulus, which could be repeated and produce the same results on many occasions because of the severity of the initial fear and breakdown stage induced. In *Battle for the Mind* I have discussed at length how similar phenomena occur in states of sudden religious and political conversion. And in this Lecture we try to examine the part they may also play in the acquisition of strong religious or other sorts of unsubstantiated faith.

It becomes clear from studying the whole literature of religious conversion, mysticism, the acquisition of new faiths and new beliefs, whether secular or religious—and this has been amply confirmed by my own studies at home and abroad—that two main ways exist by which new faiths, new beliefs, and totally new outlooks may be suddenly acquired, often diametrically opposed to all the previous faith and beliefs of the individual concerned. One of the two main ways seems to be to excite the nervous system—and to overexcite it—by means of drum-

ming, dancing and music of various kinds, by the rhythmic repetition of stimuli and by the imposing of emotionally charged mental conflicts needing urgent resolution. The brain then finally becomes overwhelmed by the imposed stimuli and conflicts imposed, and changes over from increased excitement into the progressive and varied states of inhibition described. It is then that the many interesting changes in thought and behaviour can suddenly supervene which have already been discussed in *Battle for the Mind*.

The other method seems to be one in which the same final end-point occurs, but is attained in an almost opposite way. States of abnormal brain inhibition are produced not by increasing the stimulus till inhibition finally supervenes but by starting off trying to inhibit most of the ordinary voluntary and even involuntary thoughts and activities of the higher nervous system. One tries to put oneself artificially in what is now increasingly called a state of 'sensory deprivation'. In states of contemplation and mysticism, which can create so much unsubstantiated faith, the individual has deliberately to learn, often by months or years of effort, how to empty his mind of all extraneous matters, and generally to centre his thoughts, if he is finally thinking actively at all, on some subject on which he desires to obtain new enlightenment or faith. What then seems to happen is that, as the brain becomes more and more severely inhibited as regards its normal functions, one gets a greater and greater concentration on the one thing that matters at the time, or, as Henry Maudsley put it, 'extreme activity of one part of the brain and extreme lassitude of the rest'. Then, as Pavlov also showed, such a focally excited small point of brain activity can also start to exhibit abnormal 'paradoxical' and ultraparadoxical' disturbance of function. Suddenly the particular god or devil being concentrated on is felt actually to enter into the person and become a very part of himself. There are numerous accounts in the literature of mysticism of the sudden acquirement of new faiths due to feelings of sudden possession by a variety of gods and devils, and these accounts can and should be very profitably studied and re-examined along such

neurophysiological lines. Furthermore, in the final stages of such an artificially induced breakdown one also gets, as already mentioned, states of greatly increased hypnoid suggestibility. So that the ultraparadoxical feelings of actual 'possession' by gods or devils received at that time, and registered by the brain, seem to remain completely shut off from all the rest of life's ordinary experiences and immune to all normal brain 'computer' criticism. Impressions made on the brain at such a stage may remain lifelong in their effects, and from that time on the individual has not the slightest doubt that the possession or other sensations he experienced, however abnormal, was true in fact, despite all other life experiences and knowledge to the contrary. He has in fact acquired sudden and complete faith whether the beliefs or feelings concerned be religious, political or secular in nature. Sometimes, however, they will only remain very vivid and absolutely real for a time, and then gradually diminish and dissolve; and only then do they seem to become able to be subject to normal analysis by the brain as true or false.

Two years before his death, Pavlov, in one of his great lectures, again insisted on the part played by conditional reflexes in human as well as animal psychiatry, and said that clinicians, neurologists and psychiatrists would inevitably have to reckon with 'the complete isolation of functionally pathological points of the cortex, the pathological inertness of the excitatory process and the ultraparadoxical phase'. He had already found experimentally that this probably explained physiologically why certain beliefs were held so rigidly and in the face of all scientific evidence to the contrary.

Not only can God be approached in this way by producing 'a pathological inertness of the excitatory process and the ultraparadoxical phase', but recently somebody interested in magical possession and in the raising of devils, but of very stable personality himself, told me how he had found it possible, only after long and painfully learned periods of intense mental concentration, and by the emptying of the mind of all other matters, and by special breathing techniques, to look across a room, continuing to picture in his mind the particular devil or

spirit he wished to raise. Sooner or later, after perhaps many hours of quiescent but active mental contemplation, the desired spirit or devil could appear before him. Its face and the details of the bodily features could all be seen without loss of consciousness. It might even be heard talking. But, he went on, he had never reached as yet the final stage of ultraparadoxical brain activity, when he either felt himself becoming part of the spirit or devil conjured up, or it came across the room to enter and become part of him. However, many others have reported this final experience of sudden possession by devils and angels, by God or Christ, repeatedly throughout the ages. This is in fact exactly the same process that is reported time and again in so many of the descriptions of the attainment of unity with God and Christ through the use of mystical techniques, and in most other religions of the world, especially the mystical and faith-creating ones. Marie of the Incarnation described this attainment of such states of ultraparadoxical possession, which also create such states of intense unshakeable faith very well indeed: 'The state which I now experience, compared with what I have previously described, is a completely extraordinary clearness about the ways of the adorable Spirit of the Word Incarnate. I know, experientially in great pureness and certainty, that here is Love Himself intimately joined to me and joining my spirit to His and that "all that He has said has spirit and life" in me. Particularly does my soul experience being in this intimate union with Him'. Or again, this description by an unknown American—R.P.S.—reported by Bucke; 'My soul was often bowed in adoring love, but I had never come to "know" the Comforter . . . I had read that as men were "possessed" by an evil spirit and led to do things far beyond their natural powers, so these "filled with the spirit" seemed to be carried out of, and beyond themselves . . . I one day joined in the woods a few Christians who had met to wait before God for the baptism of fire. Except a few low hymns or brief prayers, the half hour was spent in solemn silence. At length "there came a sound from heaven as of a rushing mighty wind" . . . yet no leaf above or blade of grass was moved . . . My whole being seemed

unutterably full of God . . . I understood the supersensual visions of Isaiah, Ezekiel and Paul . . . It was awful yet without terror. I lost no part of my senses, yet they were all wrapped up in the sublime manifestation . . . every moment was filled with the presence of God . . . Life became a psalm of praise'.

William James has this to say about the absolute faith often accompanying the mystical state. 'Mystical states of a well pronounced and emphatic sort *are* usually authoritative over those who have them. They have been "there" and know . . . mystical experiences are as direct perceptions of fact for those who have them as any sensations ever were for us . . . The mystic is, in short, *invulnerable* . . . Faith, says Tolstoy, is that by which men live. And faith-state and mystic state are practically convertible terms'.

Zen Buddhism also aims at the eventual attainment of a state of sudden illumination. Once this happens, the mystical seeker feels himself enter and become part of the Buddha nature. It may take several births and re-births devoted to contemplation to achieve finally this most desired state of mind. Your mind must become so empty and devoid of all passion that it acts only as a mirror. Everything is reflected off it, but can no longer affect it in any way. 'It means not fixing your mind upon anything anywhere but totally withdrawing it from the phenomena surrounding you so that the thought of seeking for something does not remain'.

In cabbalist forms of magical practice, when a person may feel himself finally entering his other 'astral' body at a distance from him, the same ability to empty the mind completely or concentrate on one thought only has to be acquired by prolonged practice and special exercises. Even modern Scientology also insists on its 'clears' being free from all emotional responses and undue reactions to their surroundings as one of the end-points of the Scientology faith.

This sudden attainment of such states of faith in the certain existence of God, of the Trinity, of the Buddha-nature or even Beelzebub himself, carries with it certain necessary side effects. As the brain starts to function more and more

abnormally, side effects of the paradoxical stages of brain activity are constantly reported before the ultimate feelings of 'ultraparadoxical' possession occur. Lustful suggestions and unclean thoughts may start to supervene in the most holy and saintly of persons totally against the subject's will; and because of the paradoxical phase of brain activity induced, the more he tries to expel them, the worse they become. Horrible new temptations, sins of pride, gluttony, anger, blasphemy, and despair are all reported as happening to the most saintly of persons. Molinos says 'you will see yourself abandoned and exposed to feelings of impatience, rage, blasphemy, and disorderly appetites'. As already stressed, the more efforts that are made to cast these hideous new thoughts out, the stronger they may become in the paradoxical phase of brain activity before the final breakthrough to 'ultraparadoxical' possession occurs. In mystical practices many truly experience what St. John of the Cross has termed 'the dark night of the soul' before the dawn with its personal union with God Himself occurs. Absolute passivity and giving up the battle is sometimes an essential necessity to the attainment of faith. Madame Guyon, the great Quietist, paradoxically insisted quite rightly that 'perfect souls are those without action, without desire, without inclination, without choice, without impatience', and 'in a state of complete death' until sudden breakthrough to faith occurs.

Wesley's converts, most of whom ended their long or short spiritual struggles by personal feelings of a possession by Christ and a sudden complete faith in the forgiveness of all their sins, describe somewhat similar feelings during the process of obtaining their own faith in their now certain salvation from hell-fire. These feelings could happen, as already mentioned, in the frenzied excitement of Wesley's revival meetings leading to inhibitory brain switchover, or when they were alone and in solitary struggle with the alternatives of salvation by faith or the certainty of eternal damnation. It was often when total despair and deep depression, induced by a dreadful mental conflict, was at its height that, suddenly, feelings of salvation by faith would be experienced, and an absolute

and certain faith suddenly ensued that God personally had forgiven them all their sins and had entered into them and they had become part of him. Many might have struggled for hours, and might even have finally given up the struggle and virtually thrown in the sponge and collapsed, when suddenly these feelings of faith and salvation were unexpectedly vouchsafed to them. The sudden ultraparadoxical switchover was attributed to the work of the Holy Ghost, especially as they now also felt filled with God's presence. Exactly the same sort of experience is reported in every religion I have examined when similar techniques are used. I wish I had the time to pile example upon example of the same thing occurring in a variety of religious or secular settings, involving either prolonged excitation of the brain leading on to sudden inhibition, or else inhibition itself being initially induced and prolonged till normal brain function breaks under the strain.

These sudden conversions and feelings of faith in somebody outside oneself, in some new belief, or even suddenly finding complete faith in oneself, do certainly occur outside any spiritual setting. Berenson, the great Italian art expert, described his own mystical experience as follows: 'For years I had been inquiring, excavating, dredging my inner self, and searching in my conscious experience, for a satisfying test. I needed a test to apply to the artefacts (of medieval art) that I thought I admired . . . while the worm of doubt kept gnawing . . . Then one morning as I was gazing at the leafy scrolls carved on the door jambs of S. Pietro outside Spoleto, suddenly stem, tendril and foliage became alive and in coming alive, made me feel as if I had emerged into the light after long groping in the darkness of an initiation . . . this revelation increased my enjoyment of the world of art and the greater confidence I felt in my own sensations and perceptions. . . I was relieved of uncertainty about their subjective reality and reliability. In other words, as in the case of all mystical experience, I acquired faith in my vision and revelation of values. This faith has never abandoned me, although often enough one has moments of dryness when, as to the religious mystic, God is out of reach'. If time

permitted, example after example could be given of exactly the same sudden acquirement of faith occurring equally in religious, satanic, and all kinds of secular and philosophical settings.

Often the faith acquired is quite incomprehensible to anybody not personally experiencing it, and the actual content may seem trivial or even absolute nonsense. It does not seem to matter. But from that day on, although it may conflict with all his normal judgements, the new faith remains as something of supreme importance to the person's whole life, and no amount of rational reasoning or other factual and scientific belief can ever replace it. Richard Church, in *Over The Bridge*, shows how muddled but seemingly clear everything can become to those experiencing the acquisition of faith in such a manner. 'We had been set to learn a passage from one of Paul's Epistles by heart. I had already got this, and I sat turning the dreary-looking pages of the school edition of the Bible . . . (my hand) stopped at the page opening on the Fourth Gospel. I saw the phrase, "In the beginning was the Word, and the Word was with God, and the Word was God". I felt the hair on my head tingling, and a curtain of red blood appeared to fall before my eyes. I leaned forward, clasping myself close, while the world rocked around me. And as this earthquake subsided, I saw a new skyline defined. It was a landscape in which objects and words were fused. All was one, with the Word as the verbal reality brought to material life by Mind, by man. It was therefore the very obvious, tangible presence of the Creator . . . My fears of evil, the old Satanic dreads due to the division between the flesh and the spirit, vanished in that moment of revelation. Everything was now contained, for me, in the power of the Word . . . I was to build a concept of universal singleness that gave me authority over the horrors, the divisions, and guilt complexes that beset us all as we go through life'. And a quotation from James's *Varieties of Religious Experience* also illustrates this sudden acquirement of faith so very well; 'I remember the night, and almost the very spot on the hilltop, where my soul opened, out, as it were, into the Infinite . . . I stood alone with Him who had made me, and

all the beauty of the world, and love and sorrow, and even temptation . . . the ordinary sense of things around me faded. For the moment, nothing but an ineffable joy and exultation remained . . . I could not any more have doubted that He was there than that I was. Indeed I felt myself to be, if possible, the less real of the two. My highest faith in God and the truest idea of Him were then born in me . . . Then, if ever, I believe, I stood face to face with God, and was born anew of his spirit . . . My most assuring evidence of his existence is deeply rooted in that hour of vision, in the memory of that supreme experience, and in the conviction, gained from reading and reflection, that something the same has come to all who have found God'.

That these sudden feelings of faith and absolute certainty about the most metaphysical or mundane of happenings are likely to be the result of alterations of thought brought about by sudden specific changes of brain function, and are not the result of acquiring a carefully reasoned, critical and calculated faith, is evidenced by the frequency with which they occur suddenly, abruptly, unexpectedly and sometimes even against the person's normal better judgement or previous desires. John Wesley, as already mentioned, was very interested in the fact that all the conversions described in the New Testament in which people acquired a new and deep religious faith had occurred suddenly. And so he specially examined this point amongst his own followers, and reported as follows: 'In London alone I found 652 members of our Society who were exceeding clear in their experience, and whose testimony I could see no reason to doubt. And every one of these (without a single exception) had declared that his deliverance from sin was instantaneous; that the change (salvation by faith) was wrought in a moment. Had half of these, or one third, or one in twenty declared it was *gradually* wrought in *them*, I should have believed this, with regard to *them*, and thought that *some* were gradually sanctified and some instantaneously. But as I have not found, in so long a space of time, a single person speaking thus, I cannot but believe that sanctification is commonly, if not always, an instantaneous

work.' And sanctification to Wesley's followers meant their final certainty of salvation by faith, a total change of heart involving a new love of God and their fellow men, and a sudden newly acquired ability to conquer old sins.

In *Battle for the Mind* I give numerous examples of how the brain of man can also be got at, and absolute faith created, by the opposite process, that is by staging deliberate excitatory assaults on the nervous system with drumming, dancing, frightening threats, and in all sorts of other ways. And certainly example after example of the sudden creation of absolute certainty of faith has been recorded in every sort of 'abreactive' religion and at every time in man's long religious history. In recent years I have travelled around the world examining many of these varied means of excitatory conversion and the acquisition of new faiths, and the excitatory techniques used are practically always the same basically, wherever they are encountered, and whether the desire is to create new faiths in a religious or in a political or social setting. For instance, hitherto well balanced people going to Hitler's mass rallies before World War II could be as emotionally overwhelmed into suddenly believing he was truly a god as those attending religious rather than political meetings where the same basic group excitatory techniques were being employed. There is one point of particular interest to note, and it was seen constantly in my travels and in my reading on the topic. When a person breaks down during mystical contemplation or is broken down in mass orgiastic rallies, the faith suddenly created, be it in God or the Devil or in some politician or obvious charlatan, tends to conform to the beliefs and faith of the group or individual then in close contact with the person concerned, and who have often brought about the sudden conversion and attainment of a new faith. One never gets possessed and acquires absolute faith in Buddha during Christian contemplation, but only in the Christian God. One then also may come to believe that one is being possessed by the Christian idea of the Devil, but *not* by the Buddhist devils. On the Freudian treatment couch absolute faith can be induced in Freud's

theories but not in Jung's, and the same vice versa. The new and true path of enlightenment is practically always related to the individual's surrounding influences at the time, because of all the superadded hypnoid suggestibility of the brain which forms so great a part of the total faith-creating process.

It cannot be sufficiently emphasized that matters of the greatest faith to some people may be quite untrue to others. And, as so many people in history have been prepared to die for their induced faiths and will continue always to do so in the future, this matter of creating new faith has always greatly complicated the problem of ordinary living for the man of little faith himself. Because he is normal, and normal people are suggestible, he is always the prey of others with a much firmer faith than his own, however ridiculous or ill balanced it may turn out to be. If normal man was not also suggestible, he would not so often have been carried away by beliefs into actions which appear so nonsensical and horrible to future generations. And yet the paradox remains that without some faith or another the problem of living becomes one of extraordinary difficulty for everyone of us. We have to believe in something, to have some purpose in life, however bizarre the life of faith may turn out to be, now or later.

What are some of the many other physiological means of creating faith? One must surely mention, in passing, the present pre-occupation with drugs as a short cut to faith in many supposedly new forms of religious and secular salvation. Drugs have been used from time immemorial by all religions to induce sudden alterations in brain activity which are often accompanied by the certainty that a new revelation has been acquired. Often, as soon as the drug wears off the newly acquired faith goes with it, but this is certainly not always so. Aldous Huxley and many others have come to believe that mescaline has revealed to them the personal presence and certainty of God. But they had generally already believed intellectually in what was now also revealed to them in so startling and faith-creating a manner. Mescaline and LSD have also been used to create states of absolute faith in beliefs as far apart as on the one hand, the certainty of one

analysed patient that under LSD he had relived his own birth, and on the other, a complete faith in the desirability of having one's heart cut out by priests as a necessary sacrifice to the Aztec gods. These same drugs create very varying faiths in beliefs as diverse as those of the 'hippies' in the need for universal love and brotherhood in all its many aspects and at the other extreme the alternative need for castration, supposedly to resist all life's many hippy-emphasized temptations! Probably the faith created by the Eleusian Mysteries in Greek times and the faith of coven witches that they could and did fly through the air were helped by the use of drugs.

Richard Cavendish, in his book *The Black Arts*, describes how physiological effects on brain function help to create belief in magic and demonology: 'the magician prepares himself by abstinence and lack of sleep, or by drink, drugs and sex. He breathes in fumes which may affect his brain and senses. He performs mysterious rites which tug at the deepest, most emotional and unreasonable levels of his mind, and he is further intoxicated by the killing of an animal, the wounding of a human being, and in some cases the approach to and achievement of orgasm. Through all this he concentrates on a mental picture of the being he hopes to see. It does not seem unlikely that at the high point of the ceremony he may actually see it'. Inducers of faith in many gods and devils are not immune to using somewhat similar physiological aids to the attainment of uncritical metaphysical faith.

What about the means of destroying suddenly induced faith? Time itself may do this. The separation between acquired ideas which have been subject to no criticism and the rest of the computed and stored material in the brain may gradually go; and the new-found faith may at last then become subjected to the brain's ordinary computing powers, and so be confirmed or rejected. But often the experience has been so overwhelming that it remains isolated and still believed in, though the individual also has more than a sneaking suspicion that it is all probably nonsense. A true hysterical state of mental dissociation then results. Also, if faith can be so induced, it may later be des-

troyed again by the same sort of mechanics and feelings of certainty that had created it initially. In psychoanalysis, a patient starts to be softened up and acquires at first an uncritical faith in the Freudian interpretations that have been given to him, but if he then goes elsewhere for further guidance he may not uncommonly finally end up in the bosom of the Catholic Church, and with all the new certainties of a quite opposite type of faith. It is interesting that Wesley was unwilling to use his accustomed methods to bring about feeling of salvation by faith in Ireland, because he feared that the Catholics might then step in and win the final victory for a quite different faith in the new convert after his departure. To stabilize newly acquired faiths, the need for an efficient follow-up system by a group thinking alike in such matters of faith seems a basic essential to success, and this helps greatly to minimize the number of backsliders. Backsliding is commonest soon after suddenly acquiring faith, since brain function may still be very unstable.

Can drugs also be used to destroy faith? Yes, certainly, just as they can be used to help to create it. Fortunately for some, and unfortunately for others, it is a fact that in most normal people the induction of new states of faith and their later deliberate destruction can be a two-way process. But there are exceptions. The person with strong obsessional traits and obsessive tendencies in the personality may take a very long time to acquire faith; the agony of a mind may be very prolonged and the conflict very severe, because of the presence of so much obsessional rumination and doubt. The assistance of drugs and other measures, providing a severe if temporary physical alteration or debilitation, may also be needed. This has been found to be the case by the saints of many sects before faiths are finally acquired. But once implanted in such tough brains, it is with the greatest difficulty that they are then removed again. Loyola, St. Francis of Assisi, John Bunyan and many others were a long time in acquiring their new found faiths, and suffered tremendously before their final sudden release to certainty came about. But afterwards they hardly faltered in their difficult spiritual roads through the rest of their life, and in giving their

more hardly won faith much more easily to other much more normally suggestible persons. Wesley, however, after a long struggle himself to achieve sudden salvation by faith rather than by good works, had several subsequent periods of doubt for no obvious external reason before his faith finally crystallized and then lasted on till the end of his life. And this is reported by many others, who, after experiencing sudden faith, later have at times doubts and hesitations never, however, again amounting to frank disbelief.

A fascinating insight into this whole physiology of faith can be obtained from a study of the effects of all the new physical treatments in psychiatry on human brain function and thought. It seems possible that modern tranquilizers, such as chlorpromazine, if given continuously, will diminish the chance of the average person from acquiring sudden faith by minimizing the effects of external stress and internal mental conflicts in bringing about final severe abnormal inhibitory activity of the brain. These drugs can certainly remedy states of ultraparadoxical brain activity resulting in the feelings of possession by evil spirits, and can abolish these just as they do the mentally ill patient's feelings that people and machines are physically interfering with him. The drug helps to minimize what William James called 'the insane delusions' of possession, which were so similar to this way of thinking to some of the experiences of supposed genuine religious possession. Certainly chlorpromazine can sometimes interrupt the process by which a person thinks he is being possessed or bewitched, and may eventually die because of the physiological effects on body function of his increasingly paralysing fear that he is indeed possessed or bewitched. Under chlorpromazine the patient should be more immune to the spell of the witch doctor, and probably to the religious revivalist as well, because of the drug's interference with the occurrence of the ultraparadoxical phase of brain activity under emotional stress.

Both electric shock treatment and the use of anti-depressant drugs can restore the temporarily lost religious faith which may happen during the often described state of 'the dark night of

the soul', by remedying feelings of depression, both in a secular and religious setting, which are due to the occurrence of the paradoxical phase of brain activity. The brain operation leucotomy is also mostly done on those with strong obsessive personalities. Thus really extensive leucotomy can destroy faith by destroying all the obsessive traits in the personality make-up. Rylander reported a patient totally obsessed with having sinned against the Holy Ghost, who, when asked about this after operation, said she had now lost all belief in the Holy Ghost. But the newer modified operations certainly have not destroyed faith, because they do not destroy but only reduce obsessive traits in the personality. And then they may, paradoxically, facilitate sudden religious conversions in those persons previously much too obsessive to be able to change to new faiths. Two patients of my own have even had sudden conversions following on a *second* modified leucotomy operation. In one of these cases the death of the patient's mother precipitated the actual sudden conversion following on a second leucotomy, in the other the persistent activities of Jehovah's Witnesses were finally able to bear fruit. The first patient again gradually lost his faith in subsequent repeated attacks of depression occurring despite the two modified leucotomy operations; the second has been lost sight of, but the conversion to and faith in Jehovah's Witnesses' doctrine remained stable for a reasonable period of follow-up, and she was thereby for the first time given a real aim and objective in life. Several other deeply religious patients have also kept their faiths intact after leucotomy operations. One gave up compulsively handing around religious tracts to all and sundry, but was enabled by the operation to return to his open air Plymouth Brethren preaching. Another, converted from Judaism to Catholicism, answered a question on this matter by saying that, as cutting her body in small pieces would not destroy her new-found faith, a modified leucotomy certainly had not done so. But a very full operation would probably have achieved this despite the strength of her conviction.

Reference has already been made to the use of drugs in the creation of faith. So, during

psychiatric treatment also, drugs may play a large part in building up states of positive transference to the therapist. This can then lead on to the acquirement of an uncritical faith, however absurd it may be, in the theoretical viewpoint and beliefs of a particular doctor as to the causation and cure of nervous illnesses. For instance, abreaction under drugs, using ether, methedrine, pentothal, LSD or mescaline, and combinations of these, can often make the patient remember true or quite false things relating to his past experience. And gradually, by increasing his suggestibility by means of drugs, he may be made to accept all sorts of new and false ideas and viewpoints, and to adopt quite bizarre faiths, including, as already mentioned, the certainty of a now remembered birth trauma, and even traumatic happenings occurring while he was still in the womb. Some more spiritually minded therapists, using drugs and other techniques, can even create faith in visits and messages from the inhabitants and spirits of distant stars. Beliefs in reincarnation, and the reliving, under drugs or hypnosis, of supposed experiences in former lives, can also create absolute faith in the reality of these previous existences, and so are used by some religious disciplines. In ancient times, the exorcism of demons, with the demons themselves crying out in the patient's dissociated and abreactive outpourings, and ending in a final 'collapse' phase when the demon supposedly fled, all created intense faith and belief in the certain existence of these demons, not only in those exorcised but perhaps much more importantly in the exorcist as well. So often, both in religion and psychotherapy, the patient, by acquiring a sudden new faith, renews and fortifies a possibly failing faith of the healer as well.

In this Maudsley Lecture I have discussed some of the physiological aspects of faith, and the brain mechanisms used in obtaining or losing sudden unsubstantiated faiths. I am only too well aware of having had to cross many of the boundaries of ethics, morality, religion, and science. But Henry Maudsley would certainly have had it so. I have tried to show how both psychological and physiological studies of the use of drugs and other modern psychiatric

treatments can throw new light on the physiology of faith; as has a continued study of various methods of inducing faith in many parts of the world visited in the past twenty years. The very great importance of this whole subject is due to the fact that without a supportive faith of some sort or another few people can hope to live constructive or happy lives. But our apparently 'built-in' and 'normal' suggestibility to faith-creating techniques lays many of us open to real dangers.

If what I have said has raised and aired many more problems than it has been able to solve, it can only be hoped that it will stimulate much more research into a field which goes to the

very heart of man's aims, objects and existence in life. The whole future of the world depends more on man's acquired faiths than on their possession of the atom bomb. And so we should learn as much about how to gain and lose it as possible; however painful and disillusioning such an enquiry may sometimes be.

But, in the final reckoning, the acid test of any faith is what it results in and makes of the lives of those who come to believe in it. And so one can end with—and endorse—the words of Henry Maudsley when he wrote 'The solid test of wholesome feeling (as of wholesome faith) is its capability of expenditure in good thought and action'.

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