MAGNETISM AND HYPNOTISM

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I we pass in review all the conceptions, all the discoveries and inventions that have enriched the world, we shall be struck with the fact that nearly always they have come up out of the profound depths of humanity unexpectedly, and as it were by chance. Such was the beginning of whatever knowledge we have of hypnotic processes. It has come down to us from the most remote times, not in a clear, definite tradition, but in a vague rumor, sufficiently accounted for by the state of religious belief and the notions about witchcraft that then prevailed. Not till the close of the 18th century and the era of philosophy, free inquiry, and free thought, was this question brought into the light of day by Mesmer, whose name is sufficiently known to render any epithet needless. Every one has heard of the fame of the séances given by the new apostle and of the outcome of his therapeutic efforts. But it is less well known that the theory of animal magnetism and the term itself were both of his inventien; besides, by a singular chance Mesmer's animal magnetism differs measurably from the magnetism of the magnetizers of to-clay. Mesmer believed in a fluid diffused everywhere, by the aid of which the heavenly bodies, the earth, and animate bodies exert among themselves a reciprocal influence. The action of this fluid is subject to flood and ebb, and the alternate effects of these movements are felt by the human body as by all other bodies. Further, this fluid manifests itself in man through properties analogous to those of the magnet, and, just as in the latter, tends to locate itself at certain poles (hence the term "animal magnetism "), though it is totally different from the magnetic fluid. Again, Mesmer believed that it is reflected and refracted like light, is communicated from one body to another, is propagated, is augmented by sound, and is capable of being accumulated, concentrated, and transported.

If, quitting pure theory, we consider practical results, we find Mesmer asserting with the utmost assurance that "this principle can cure nerve diseases directly, and other diseases indirectly." To attain this result, and as a mode of applying the magnetic fluid to the human body, Mesmer invented and put in operation his famous baquet (tub). In tue bottom of this were several tiers of bottles of water, laid in clifferet directions, and immersed in water containing iron filings, pounded glass, and other ingredients. The cover had several holes bored in it, from which projected iron rods bent at a right angle and movable, which patients were to apply to themselves at the points where their maladies had their seat. Around these tubs the patients took their places in several concentric ranks, forming a chain by contact of their finger tips, just as is done in our day by spiritists. Then, music and the darkened room assisting, the expected phenomena were not long in manifesting themselves. A goodly number of the subjects, but not all, experienced a bodily agitation more or less marked, and soon fell into convulsions characterized by "involuntary jerky movements of all the members and of the whole body, contrac tion of the throat, subsultus of the hypochondrium and epigastrium, disordered vision, shrill cries, weeping, hiccoughing, and immoderate laughter "-in short, all the tokens of a most pronounced fit of hysteria.

If I have dwelt a little on this description, it is less on account of its historical interest than

because of its importance as regards our conception of the role of Mesmer and mesmerism in the question of hypnotism. In fact, the Viennese thaumaturgus supposed that he was subjecting his patients to the action of a physical agent freely diffused throughout nature, which he thought was best applied by means of conductor bodies-metal rods, water impregnated with iron filings. Even the "passes" he used were intended merely to aid the circulation of the fluid. As for the result, it was commonly just a fit of hysteria.

In all this, it is to be noted, there is nothing that is not entirely natural. There is no personal action of the operator upon the subject; and the result obtained, consisting ordinarily of hysteric convulsions, has no connection whatever or in any degree with sleep. Mesmer's animal magnetism, therefore, was essentially different from what is now customarily designated by that name.

One of Mesmer's disciples, the Marquis de Puysgur, was destined to initiate tue new order of things. Immediately on his return to his estates, after having attended the séances of the master, he amused himself with magnetizing the people around him. To his great astonishment, during one of his experiments a young peasant fell peacefully asleep in his arms, without convulsions and without pain, and began talking aloud, telling of all his thoughts and feelings in the different occupations in which he imagined himself to be employed, according to the directions given to him by the Marquis de Puysgur. Under the influence of the magnetic manipulation the man slept, and while sleeping walked; hence the term "artificial somnambulism," proposed by Puységur's brothers. Further (and this is of no small importance), the images that came before the mind of the subject during this sleep, were capable of being indefinitely modified at the pleasure of the one who had put him in that state. The three terms of the modern magnetizer are thus found united and revealed in the case of the Marquis de Puysgur; namely, sleep not inconsistent with lucidity of mind, and allowing the subject to be influenced by another person.

An impulse was given to animal magnetism, which henceforward was identified with artificial somnambulism; and magnetizers swarmed not only in Paris but throughout the provinces. Still, public favor was not entirely won for these novel practices, whether simply because people mistrusted the unknown and the unaccustomed, or because they remembered the mischances that had befallen Mesmer and after him the priest Fana, causing the edifice of their fortunes, that for a moment excited wonder, to collapse ridiculously. Then it was that the heads of the magnetic school resolved to ask of the learned societies an official inquiry. Mesmer having already been banned by the Paris Academy of Sciences, the request was this time addressed to the Academy of Medicine. A special committee was named in 1826, and five years later Husson presented the report upon its labors. With this report, famous in the history of magnetism, one might have hoped that the matter would enter its scientific phase; but that was still distant. Alongside of a few positive facts, what a searching for the marvelous! Seemingly, before they strove to obtain even a superficial knowledge of the effects of magnetism, the committee wanted forthwith to penetrate to the uttermost limits of its action. Hence, though Husson's report was favorable, the doctrine neither made progress nor won proselytes among physicians; and in 1840, upon motion of Double, who likened magnetism to circle-squaring, the Academy of Medicine declared that "nothing is demonstrated in magnetism," and that on no account would it thereafter have aught to do with anything connected with that class of facts.

At that time, therefore, and since Puysgur's discovery, the initiated and the inquirers devoted themselves principally to the investigation of marvels. The subjects must see with the eyes shut, must have the sense of smell at the finger tips, must even divine the future; but it did not occur to them to study the subjects, to notice how they act, what phenomena they present, what laws control these phenomena, upon the strength of winch all the laws acknowledged in physiology were to be completely reversed. Again, therefore, researches upon magnetism fell into absolute discredit, having become a close preserve for the sole benefit of charlatans and illumùzati. Then it was that the ideas of the absolute power of the magnetizer's will, of his unlimited influence over the will of the subject, were set forth with unheard-of exaggeration and in the most positive form. Reaction came quickly. Braid, a surgeon of Manchester, indignant at the thought of the degradation of human nature implied in this mind slavery, so-called, began, in 1841, the experiments by which he showed that in order to produce artificial somnambulism there is no need of any extraneous influence, and that any person of moderate sensibility can easily produce in himself the "magnetic sleep " without any aid or act of another. One has simply to fix his eyes for a few minutes upon some shining object placed a little higher than the ordinary plane of vision and at the distance of a few centimeters. The "imper-

sonal" sleep thus produced was called by Braid "hypnotism," and the process published by Braid is now known as "braidism." The word hypnotism (from sleep), coined by Braid, has also been generally adopted in our time by scientific men to denote sleep artifically produced by mechanical means. The word possesses at least one advantage, namely, that it implies no foregone conclusion, and merely states a fact without basing it upon a theory, as was the case with the term magnetism.

But Braid's discovery did not save the study of these phenomena from becoming, with very few exceptions, the exclusive province of charlatans and illuminati, nor from falling into almost absolute discredit. It needed, perhaps, a little courage for a man to take up again a question upon which the anathema had thus been laid, and to attempt its official rehabilitation. In the lack of any other merit, may the generations to come credit me at least with that!

From the inception of my investigation of these questions, my aim has invariably been to study the hypnotized subject himselfhow he bears himself under hypnosis. This study has seemed to me to be much preferable to that which considers, not the subject, but the hypnotism in its essence and as a special force. I have also endeavored to consider the hypnosis as a state into which a man may be brought; not as an agent, whether superhuman or extrahuman. And the more I have examined the facts, and the further I have advanced in my study, the more I am convinced that hypnotism is a reaction, not an action.

The end I have ever held before my eyes, then, and which I hope I have never lost from view, is this: to study the hypnotic phenomena according to a strictly scientific method; and for this purpose to employ processes purely physical and which can always be compared with one another, so that the results obtained by me may be rigorously tested by all observers who shall use the same processes under the same conditions.

Before I speak of these processes, I must say a few words about the subjects with whom my experiments have had to do. At the very outset my studies dealt with hysterical women, ami ever since I have always employed hysterical subjects. There were two reasons for this: first, because the practice of hypnotizo tion is by no means free from danger to whoever may be subjected to it; and, secondly, because not infrequently we see hysteric symptoms manifest themselves at the first attempt of this kind, which may thus be the occasional cause of this neurosis. One avoids this danger, and consequently a heavy responsibility, by operating, as I have ever clone, only upon subjects that are manifestly hysterical. The second reason why I have always preferred to act in this way (and the first alone would suffice to determine my mind), is that hysterical subjects are as a rule much more sensitive than persons reputed to be in sound health. To this point I invite the attention of observers; for if some experimenters have not reached the same results that I have reached, their want of success is certainly attributable to the fact that they have operated upon non-hysterical subjects. For a like reason, I have chosen rather to deal almost always with the female sex, because females are more sensitive and more manageable than males in the hypnotic state.

And now I come to the processes employed to produce hypnosis. In choosing arnolig these, I have, like Braid, wished to make use of means that might as far as possible be impersonal. I have thus had recourse to sundry physical agents capable of producing upon the sense organs impressions that might result in hypnosis. Among the processes employed, that used by Braid is one of the easiest to apply and of the most certain in operation. It consists in holding in front of the patienta small shining object, and getting him to gaze upon it without letting his attention be diverted. This object must be held 10 or 15 centimeters distant from his eyes, and a little above the usual plane of vision. Soon the eyelids begin to wink; then the winking becomes more and more rapid; later they tend to droop, and finally they fall. The subject can still lift them, with an effort; but after a little while even that effort becomes impossible and has no result. Then comes a sleep more or less deep according to the person, or according to the experience of the subject with the process; for sleep comes the quicker the oftener the subject has been thus put to sleep. In practice, I have often been able to simplify Braid's process, by merely making the subject gaze fixedly upon the tip of my finger, held at the proper distance from his eyes.

In both these cases one factor is absolutely necessary to success-the good will of the patient. In other cases we can supply the deficiency by substituting for the effect due to persistency of impression (protracted gazing), suddenness and intensity of impression. This I have often been able to do by suddenly- and unexpectedly unmasking before the subject's eyes an electric or a magnesium light. If, instead of acting upon the

organ of sight, we act upon the Organ of hearing, results strictly analogous are obtained; and here, too, we may employ the slow or the instantaneous method, as when we have to do with the eye. The slow method consists in placing the subject near a very large tuning fork, operated by an electro-magnet. Little by little, under the influence of the swelling vibrations thus produced, sleep supervenes and becomes as profound as when the other processes are employed. As for the sudden auditory method, it consists in the use of a gong or tom-tom. The instrument being struck, the patient not expecting it, she is seen to become suddenly motionless, as though frozen where she stands, fixed in the gesture she may have been making at the moment when the gong was sounded. But it is to be remarked that this method, like the others, is not always successful; besides, it is a rather brutal expedient, and may in some patients provoke a veritable fit of hysteria, instead of producing hypnotism. Nevertheless, it has this advantage over the other methods, that it does not require the good will of the subject, who may therefore be hypnotized in spite of himself. But it is dangerous to employ it, arid it is not to be resorted to habitually.

Having spoken of the choice of the subject of hypnosis and the means employed to produce the hypnotic state, we have now to describe the phenomena produced-hypnotism itself.

First of all it is to be noted that the results obtained through the different methods are not absolutely identical. If hypnosis is produced by fixing the eyes upon a shining object (braidism), and if the gaze be prolonged a sufficient time, the eyes are seen to close, the subject becomes totally unconscious, perceives none of the objects around him, hears none of the words addressed to him; but if sufficient pressure be made upon a nerve or a muscle, the corresponding segment of a member assumes a fixed posture, which is in all instances the same, being due to contraction of the muscle directly manipulated or of that innervated by the nerve upon which the pressure is exerted. This special hypnotic state, so easily recognized by the neuro-muscular characters just described, is what I have called the "lethargy."

If the gong or the electric light is employed, the state into which the patient is brought is very different; it is now, not lethargy, but "catalepsy." This state is distinguished by the following characters: The eyes are wide open and staring; the muscles and nerves are no longer capable of being excited directly by pressure, and contractions cannot be produced; but, on the other hand, the muscles acquire the property of retaining whatever attitude may he given to the members, and the latter oppose to passive movements a mild resistance, which produces in the experimenter a veiy peculiar sensation-the flex 1 bull as cerea of the old authors. In this state is to be seen the very interesting phenomenon of the unison of attitudes and facial expressions: the patient will clinch his fist if the face muscles that express anger be made to contract by electricity; conversely, ins face will assume the expression of violent anger if his fists be clinched and made to assume an attitude of threatening.

Lastly, there are subjects in whom the hypnogenic processes produce neither of the two states mentioned, but a third and totally distinct state, to which I have given the name of "somnambulism." This is the state which "magnetizers" specially desire to produce. Whereas, in the two preceding states the subject seems to have no mental connection with the outer world, perceiving no sound, responding to no question, powerless even to make any spontaneous movement, the case is entirely different in the somnambulism. The somnambulized person can keep his eyes either open or closed; often he has exactly the appearance of one that is awake, and, to see him walk, no one hardly would suppose him to be a hypnotized subject. He answers questions addressed to him, and even can take part in a prolonged conversation. In the somnambulic state the muscles can be made to contract; not, as in the lethargy, however, by direct pressure upon muscles or nerves, but by merely grazing the skin overlying them, or even by making passes along their course, at a certain distance.

Thus, these three states, as can easily be seen, differ essentially from one another; and I have chosen to fouid distinctions between them upon strictly objective characters that can easily be demonstrated. The neuro-muscular phenomena of which I have spoken with an emphasis due to the importance I attribute to them, are among the most stable of these characters. But does it follow, because these three states are really distinct from one another, that they stand abolutely isolated, and that they may not be transformed one into another? By no means; and it is the easiest thing in the world to produce this transformation. SLippose the subject is in the lethargy, we need but open his eyes wide with the fingers, in order to put him into the cataleptic state; and by rubbing briskly the top of the head, we can make him pass into the som-

nambulism. Conversely, the patient being in the catalepsy or in the somnambulism, to put him in the lethargic state we have only to keep his eyes shut for a few seconds by exerting some little pressure upon them.

So far I have dealt only with phenomena directly amenable to physical analysis; indeed, with phenomena that can be analyzed with comparative disregard of niceties of distinction. But, the preceding facts once established, this no longer suffices, and we must, for the sake of completeness, enter upon the study of phenomena of a quite different order-phenomena of the psychic order. Here we meet with greater difficulties, and, truth to tell, we have to feel our way. Researches of this nature must be made in the somnambulism, for in that state the hypnotized person speaks freely and answers questions put to him. The psychic characteristic of the state of somnambulism is an absolute trust, a boundless credulity on the part of the subject toward the one who has hypnotized him. However improbable the story told in the hearing of a person so hypnotized, he believes it, takes it in, makes it his own; it becomes the center of his entire cerebral activity; all his thoughts radiate out of it, until some new thought is furnished to him, though the same be diametrically opposite to the former. It is because of this state of mind that the phenomena of "suggestion" are so easily produced. Everyone knows what is meant by this suggestion and to what lengths it may be carried. Take one example from among a thousand. I present to a woman patient in the hypnotic state a blank leaf of paper, and say to her: "Here is my portrait; what do you think of it? Is it a good likeness?" After a moment's hesitation, she answers: "Yes, indeed, your photograph; will you give it to me? " To impress deeply in the mind of the subject this imaginary portrait, I point with my finger toward one of the four sides of the square leaf of paper, and tell her that my profile looks in that direction; I describe my clothing. The image being now fixed in her mind, I take that leaf of paper and mix it with a score of other leaves precisely like it. I then hand the whole pack to the patient, bidding her go over them and let me know whether she finds among these anything she has seen before. She begins to look at the leaves one after another, and as soon as her eyes fall upon the one first shown to her (I had made upon it a mark that she could not discern), forthwith she exclaims: "Look, your portrait! " What is more curious still, if I turn the leaf over, as soon as her eyes rest upon it, she turns it up, saying that my photograph is on the obverse. I then convey to her the order that she shall continue to see the portrait on the blank paper even after the hypnosis has passed. Then I awaken her and again hand to her the pack of papers, requesting her to look over them. She handles them just as before, when she was hypnotized, and utters the same exclamation: "Look, your portrait!" If now I tell her that she may retire, she returns to her dormitory, and her first care will be to show to her companions the photograph I have given her. Of course, her companions, not having received the suggestion, will see only a blank leaf of paper without any trace whatever of a portrait; and will laugh at our subject and treat her as a visionary. Furthermore, this suggestion, this hallucination, will, if I wish, continue several days; all I have to do is to express the wish to the patient before awakening her.

The foregoing experiment has been made hundreds of times by nie and by others, and the facts can easily be substantiated. Their objectivity is as complete as could he wished in researches of this kind. Let us then analyze each of these phenomena, and so obtain a notion of what is meant by suggestion. I show the patient a perfectly blank leaf of paper, telling her that on it is drawn my protrait-an entirely baseless affirmation on my part, and one that would he flatly contradicted by any person even of moderate intelligence. And yet, because of the unheardof credulity of which I have spoken, the hypnotized subject sees the matter quite differently. Almost without any hesitation she seizes tile idea that I present to her. Indeed, to say that the hypnotized subject seizes the idea is not a precise expression of the fact; it is more correct to say that the idea seizes, takes possession of, the hypnotized subject. The portrait that I tell her to look at she distinguishes perfectly; and if I but urge the point a little, she will describe the picture with great abundance of details, unrolling ad infinitum this panorama of induced hallucination as she grafts upon the simple notion of a portrait every association of ideas that occurs to a quick imagination. Yet she never lets herself wander from her starting point, ever and again going back to the initial idea-the piece of paper by her transformed into a photograph. She holds it at different angles, turns it this way and that, brings it near or holds it at a distance, contemplates it from every side; and if I cease to talk to her, she will go on thus for hours fondly gazing on the bit of paper. It seems as though, under the influence of the hypnosis, there exists in the brain an absolute thought vacuum; and that, taking advantage of this solitude, every idea introduced by suggestion spreads itself out immeasurably and lords it in the tenantless domain. In the case we are considering, the thought of the

portrait, its existence once granted, is entirely rational; but were I pleased to suggest to my patient something utterly absurd, she would accept that suggestion with the same docility. Were I but to tell her that the portrait has two noses and three eyes, she would believe that quite as readily, without raising any difficulties.

Such is the influence of suggestion in its less complex features, and one can easily imagine what a variety of results may be produced by it. But let us proceed with the analysis of our experiment. When, upon my injunction, the patient continues, even after being awakened, to see my portrait upon this leaf of paper, that is a proof of the intensity with which a suggestion may be impressed upon the mind; for even when the mind has resumed its normal life and functionment, the impression made during the hypnotic state persists, like a veritable parasite, for hours, nay for days, sometimes for weeks, and that without losing aught of its potency. The importance of these facts is patent, and I regret that space does not permit me to discuss the highly interesting questions raised by hypnotism regarded from the medico-legal point of view, as an agent in crime and a factor in lessening individual responsibility. But that would carry me too far, and I must give simply a broad general notion of hypnotism, without discussing its applications.

Return we once again, therefore, to the experiment already described, for we have not yet examined all its phases. Having suggested to the patient that the leaf of paper set before her eyes is a photograph, I put it amid a great number of other leaves so exactly like it that even a keen eye cannot tell one leaf from another. Then I tell the lady to find whether the lot of papers contains anything she lias seen before. Whatever I may do to "throw her off the scent," she never misses; every time that, as she goes over the papers, her eyes fall upon the leaf in question, she recognizes it without any hesitation. Here we enter the domain of the marvelous, the enchanted garden toward which every one has been drawn who has studied magnetism; and from it few have come back. But is there any need to appeal to the miraculous for an explanation of facts of this character? Must we invoke the supernatural? Certainly not, when we can account for thse phenomena in the simplest way in the world, by assuming an enhanced acuteness of some of the senses -an acuteness developed under the influence of the hypnotic state. Is it matter for astonishment that a dog follows his master by scent through forests and fields, or that a carrier pigeon comes back to its home from a distance of hundreds of miles?

No; these phenomena contain nothing supernatural. This view I shall never be weary of proclaiming. Hypnotism is directly amenable to our means of investigation, and must needs be an integral part of the known domain of science. To that goal our efforts ought to be directed. Let us, then, continue in this path -the only one that may save us from precipices and that can lead us to success.