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PSYCHOLOGY AND PHILOSOPHY.

I.—THE PROBLEMS OF HYPNOTISM.

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OF all physical analogies, the one which most constantly suggests itself outside the limits of the physical universe is that of the pendulum. Alike in our sensory experience where excitement leads on to fatigue and satiety begets aversion, and in the wider domains of religion and politics where movements and opinions so constantly tend to one extreme by a mere impetus of repulsion from the other, the rhythmic law of action and reaction is ever at work. But sensation and sentiment by no means exhaust the region to which these further applications of the law extend: we find it operating where it would least be sought, and invading the passionless paths of science herself. The characteristic instinct of the scientific spirit is, of course, to simplify and unify: as science advances, theories of a multitude of separate agents, whether personal deities or abstract faculties, gradually give way to the recognition of large general laws. But if in the main this tendency towards unity and simplification brings nothing but good, it is inevitable that an end in itself so eminently conducive to intellectual peace and satisfaction should also act as a temptation—that in yielding to the generalising instinct the mind should sometimes be swayed too fast and too far, and so be landed in premature

hypotheses. And thus it is that, even as the old pre-scientific speculation sought a transcendental unity of things in such principles as water or fire, so even advanced science may occasionally do injustice to the immense variety of Nature, and, in the determination to formulate a law for some special department of facts, may seek and observe too exclusively the facts which can be made to square with the law. It would be hard to find a better instance of such over-simplification than is afforded by the modern science of Hypnotism. For so short a span of existence, few sciences can have been so prolific in theories, presented often concurrently, and with little attempt at mutual refutation; and the time has perhaps come when the experimental knowledge of the subject which is so rapidly advancing may be usefully supplemented by a brief critical review of its theoretic vicissitudes. If such a review reveals how divergent have been the various paths which speculation has taken, and how one after another of them seems to leave this or that set of facts on one side, it may at least aid in defining the problems that actually remain.

The facts of Hypnotism, it is needless to say, first became prominent in connexion with theories which science has with one voice rejected, finding nothing therein but absurd personal pretensions, and an ignorant jargon about forces and fluids. The facts themselves, however, were too indisputable and extraordinary to be neglected; and the first and most comprehensive theory of them, advanced in opposition to those of 'mesmeric' influence and 'odic' emanations, was that of *suggestion* and *imagination*. The singular mental phenomena which followed 'mesmeric' manipulations were ascribed to a temporary suspension of the 'subject's' independent powers of will and judgment, whereby both his beliefs and his conduct were left at the mercy of external suggestions. This was the theory crudely set forth exactly a century ago by the Commission of the French Academy of Sciences which was appointed to examine Mesmer's claims. Though presumably regarded by them as an explanation, it clearly contains no explanatory power whatever: it is simply a description (and, as we shall see later, a very imperfect one) of the particular mental condition which the 'subject's' actions suggest. The crucial question remains: If the doctrine of a specific influence from the operator be rejected as outside the domain of natural law, what are the natural laws to which this peculiar mental condition can be referred? Above all, what is the law of its production?

This question remained for a long time without an answer; but two answers were at last given by countrymen of our own—one, which as far as it went was of a clear and definite character, by Braid; the other, of a hazy and unexplanatory character, by Dr. Carpenter. This description may at first sight seem unjust to the latter, inasmuch as he professes general agreement with Braid, and does not seem aware of having adopted a different basis. It will not be hard, however, to justify what has been said.

Dr. Carpenter's explanation (*Mental Physiology*, c. xiv.) rests purely on *mental* ground: his argument is concerned with states which (though of course, like other mental states, they have their physical correlate in the nervous system) he treats throughout in their purely mental aspect. There could be no objection to this treatment, were it successful as far as it goes—the conditions of success obviously being that the phenomena of the mental state for which we seek explanation should be brought into relation with phenomena of other and more familiar mental states; for scientific explanation consists in bringing out identities between new and old knowledge. Dr. Carpenter's failure to realise this condition seems to me to be complete. The region where he seeks the needed identities is the well-recognised one of *reverie* and *abstraction*; and his endeavour is to embrace the phenomena of these familiar states with those of Hypnotism in the common category of 'automatic mental action'. As an instance of the automatism of reverie, he describes the loose play of fancy to which the poet may resign himself under the influence of some pleasing aspect of Nature. To illustrate the automatism of abstraction, he describes the 'absence of mind' which has characterised many clear and profound thinkers,—showing itself in their eccentric conduct in the streets, or in random answers to persons who have addressed them when their whole attention was absorbed in following some complicated train of logical thought. The reader will observe, even before we begin to test the resemblance of these 'explanatory' phenomena to the unexplained facts of Hypnotism, how confused and confusing the idea of automatism has already become. It is more than doubtful, to begin with, whether 'automatism' correctly describes the poet's condition at all. As long as the idea of *vill* is absent, 'automatic' is an excellent word to describe actions, the conditions of which are inside and not outside the subject of them: such, for instance, is its appropriate meaning in physiology. But the mind is not a cell or a tissue; and, in the present connexion, to call the mind's actions automatic,

simply because it is taking its own path unsolicited from moment to moment by new sensory impressions, seems very misleading. 'Automatism,' if it is to serve Dr. Carpenter's purpose and to embrace hypnotic facts, must mean something quite distinct from spontaneous and unsolicited origination of ideas; it must mean nothing less than temporary paralysis of the directive power of the will; and there is nothing to warrant the assumption of this paralysis in the fact that the mind's action for the moment is unimpeded and effortless.

But even if we waive this objection and extend the meaning of 'automatism' to cover what is properly expressed by *spontaneity*, the automatism in the described condition of the poet and that displayed by the absent-minded mathematician are surely so far from identity that they present an absolute contrast. The spontaneity or 'automatism' of the poetic day-dreamer, in the sense of a free and aimless play of mind, belongs to the essence of his activity; so far as it is a correct description at all, it is a description covering the whole ground of what his mind is doing. The mathematician's mental activity, on the other hand, is just exactly *not* free and aimless, and just exactly *not* automatic. It is the most conscious and strenuously-directed effort, concentrated on successive points in an argument which it may require all the strength of his will to stick to and grapple with; and any automatism that he may display is a mere *accident* of this state, showing itself if external demands happen to solicit an attention which is already irresistibly set in one particular channel. The condition described as 'automatic' in the case of the poet is charged with consciousness, which may be of the most vital and delightful kind; it *is*, in fact, itself the stream of consciousness in a particular aspect—*i.e.*, winding hither and thither in a roving and easy way. The automatism of the mathematician who does or says odd things while solving a problem, is essentially remote from the stream of his consciousness; *that* is engrossed with other things, and his automatic sayings and doings are distinctly reflex actions, the result of suggestions which may never reach even the threshold of conscious perception.

Having thus observed the total dissimilarity, or rather opposition, of the two mental states whose fundamental characteristics Dr. Carpenter treats as identical, we shall not be much surprised to find that the hypnotic state, which he goes on to identify with them—in order by that means to obtain an expression for the less known in terms of the

better known—is essentially distinct from either. The looseness of thought which has already made ‘automatism’ cover two quite distinct things very easily extends it to a third equally distinct thing, which, being thus referred to a class, is so far—and all by the magic of a word—explained! The automatism of the hypnotised ‘subject,’ in his response to external suggestions, is often automatism in a true sense; in that respect differing *toto celo* from those spontaneous or internally-originated impulses of fancy to which, in moments of random reverie, the poet’s mind may give the rein. But it differs no less distinctly from the automatic or reflex words or actions with which we saw the absorbed mathematician responding to external impulses. For of those responses, as we observed, the essence was that they were unattended to, the stream of consciousness being rapt away in another direction; while in the hypnotic case, consciousness and attention,¹ so far from being abstracted from the things which are being done in response to the external suggestion, are directed with even abnormal concentration upon those very things. We might without incorrectness describe the higher hypnotic phenomena as *reflex* action, in respect of the certainty with which particular movements follow on particular stimuli; but they are, and their peculiarity consists in their being, *conscious* reflex action. The central problem of Hypnotism lies in the combination of those two adjectives; and in the following pages each of them will have to be emphasised in turn. The hypnotised ‘subject’ who carries out complicated orders is a conscious, and often even a reckoning and planning, automaton. Reflex response (if we wish to retain the phrase) is here raised from the merely physical to the mental plane; the external suggestion evokes a particular idea in as certain and as isolated a way as an appropriate electrical stimulus evokes the isolated action of one particular muscle. This isolation of a single object in the mind naturally implies abeyance of the normal controlling and relating power. In the normal state, successive vivid points of consciousness are surrounded by a swarm of subordinate perceptions and ideas, by reference to which it is that conduct is instinctively or subconsciously kept rational, even though the attention may be strongly focussed on its immediate aim or object. In the hypnotic state the contact is broken between the predominant idea and this

¹ Consciousness and attention, that is, so far as they are present. The very varying degrees, and in many cases the indisputably high degree, in which they may be present will be discussed a little later.

attendant swarm ; and conduct thus ceases to have reference to anything except the predominant idea. And the difference between that isolation of the dominating idea which is the cause of automatic answers and actions in the case of the absorbed mathematician, and the isolation of the dominating idea in the hypnotic automaton—though to a superficial observer the states seem similar just because each produces irrational actions—clearly goes to the very root of the phenomenon, regarded as mental. The mathematician has no fraction of attention to spare for external solicitations: his mind is in a state peculiarly impregnable to them; the mind of the hypnotic 'subject' is absolutely at their mercy. The one mind is working with unusual force and individuality in its self-elected channel, and what its owner says or does in response to external influence is as little attended to by him as the influence itself. The other mind is working with marked absence of individuality in a channel elected by others, and what its owner says or does in response to external influence is that on which his attention is concentrated to the complete exclusion of every other thought.

The attempted explanation of the phenomena on *mental* ground, by bringing the mental condition within the recognised domain of abstraction or automatism, thus falls to pieces. Braid's explanation was a very different one. He fearlessly took *physical* ground, and attributed the hypnotic effects to an exceptional and profound nervous change produced by a particular muscular straining. His experiments and conclusions, which were the foundations of the actual science of Hypnotism, are too well known to need recapitulation. They dealt, it is true, chiefly with the lower phenomena—the obvious bodily effects, and Braid's grasp of the subject on the psychical side was certainly very imperfect; still his claims to have traced to their true source effects which had hitherto been ascribed to imagination and imitation are sufficiently explicit to pass as a suggestion, at any rate, of a physiological basis for the higher phenomena with which we are here chiefly concerned. Since his time, the principal gain to our knowledge has been the proof that it is not necessary that the eye should be the organ employed, or even that the strain should be of a muscular sort at all. With sensitive 'subjects,' the ticking of a watch held at the ear, and light monotonous passes acting on the nerves of touch, have been found as effective as the fixed gaze. But this, it will be observed, is a mere extension of Braid's doctrine; for the

physiological condition of preparatory nervous adjustment to a regularly-recurring stimulus is really *fixation* in as true a sense as where the employment of muscular apparatus more immediately suggests the word. Concentration of attention is, no doubt, the natural mental concomitant of the physical fixation ; it may even be that for the artificial production of the state in man it is a real condition, in the sense that physical fixation alone would not be effective if the attention were kept actively employed on external topics. But Braid never for a moment suggested that the peculiar muscular or nervous strain could in the first instance be dispensed with, or was anything less than the full and sufficient cause of the subsequent phenomena. He is throughout consistent and urgent in his view that the basis of hypnotism is a complete alteration or rebalancing of the nervous system, artificially producible by special means of an obviously physical sort.

Here, then, we seem to have at any rate the beginning of a satisfactory account of many of the facts popularly attributed to 'mesmeric' influence. Braid clearly saw—what Dr. Carpenter has failed to see—that the hypnotic state is a unique one and is due to a quite special cause. If the fact is experimentally established that a particular sort of physical process is perpetually followed by an exceptional mental state having no apparent relation to it, the hypothesis of an exceptional nervous change—as a middle term, and as the proximate condition of the mental state—is one which, in the present stage of our knowledge as to the connexion between mind and nerve-tissue, we not only may but must make. And so far as the mental change is profound and the mental state unique, to that extent, we are justified in saying, is the nervous change profound and the nervous state unique. Even to enunciate this doctrine may appear somewhat out of date, now that science is attempting to define, what Braid left uncertain, the exact nature of the nervous events—whether, for instance, they consist in 'cortical inhibition' or in 'local erethism'. But there is a special reason for constantly insisting on the more general position. For Dr. Carpenter's is by no means the only attempt that has been made to frame an explanation of hypnotic phenomena out of psychical factors ; and such factors have proved themselves peculiarly liable to illegitimate use. Above all, they have tended to confuse the important distinction between the production of the state and the state itself—a distinction which Braid's conception enables us to keep clear.

The psychic factor mainly relied on has of course been that of *attention*. And there are doubtless cases where such reliance might seem justified—cases where the physical means which are successful in producing hypnotism seem much less exceptional and violent than those described by Braid, and where, therefore, the accompanying psychical element of concentrated attention becomes relatively more conspicuous. Even these cases, however, include none where physical means have been altogether absent: we have no record of the production by attention, however concentrated, of the characteristic phenomena of suspension of directive power and loss of memory, unless accompanied by some amount of physical fixation.¹ And indeed the very nature of the concentration, when present, seems to involve some such fixation: it would probably be impossible where the bodily state was wholly pliant and natural. In its strained immobility it is itself exceptional—so much so that an educated mind may find the greatest difficulty in attaining to it—and is, in fact, the very opposite of the active sort of attention with which an object is normally contemplated or a train of thought followed. Nor can attention be represented even as an inseparable accompaniment in the production of the state, unless by resolutely ignoring a large part of the hypnotic field. As Mr. Romanes some time ago observed, and as Prof. Stanley Hall again pointed out in his most interesting and suggestive paper in *MIND* XXX., it is easy to hypnotise animals, but not easy to credit such an animal as a frog or a crayfish with any true power of mental concentration. And the phenomena of natural somnambulism or 'sleep-waking,' which in respect of the absorption of the mind in one direction present the closest analogy to those of hypnotism, demand no previous concentration of attention at all. But even if we confine ourselves to cases where attention *is* actually present during the production of the state, what ground is there for describing it as the *cause* of that state, in the absence of any extraneous empirical proof of a tendency in the antecedent to produce the consequent? The general effects of a one-sided strain of mind or body are pretty well known; and 'tonic cramp of the attention' (to adopt Prof. Stanley

¹ This of course does not apply to the production of the state in sensitive 'subjects' who have been hypnotised on previous occasions, and who fall into the trance by attention, not to a button, but to their own memories of past sensations. The power of representing and revivifying past states is one which manifests itself in many directions, and has no special relation to the hypnotic problems.

Hall's phrase) may be a very satisfactory description of the one-sided absorption in a particular direction which characterises many isolated stages of the hypnotic trance. But what tendency should the cramp of an attention which is directed to a button held in the hand have to produce, or to facilitate, a fresh cramp or series of cramps when the attention is diverted to quite fresh objects? The cramp of a limb which has been kept too long in one position does not issue in a tendency to move it rapidly into new positions: yet it is just such an anomaly as this that the hypnotic process and its sequel perpetually present. Prof. Stanley Hall's excellent remarks—*à propos* of the idea of attention—on the danger of using terms in a manner which necessitates 'radically reconstructing the notion of them familiar to common consciousness,' would surely be equally in place here *à propos* of cramp. Even the case which he himself describes—where powerful excitement, both physical and psychical, was produced by the effort to change the current of the 'subject's' ideas, and where it was necessary to wake and re-hypnotise him before impressions of a new *genus* could be given—presented a feature which seems an odd result of previous rigid attention to a button, namely, 'great mobility of attention' within the single genus of ideas suggested. But this necessity for waking and re-hypnotising is so far from being constant that in my experience it is unexampled. I have again and again found the complete change to a new *genus* of ideas to be absolutely effortless and instantaneous—found, that is, that the attention, which had been as usual fixed during the *process* of hypnotisation, became quite abnormally mobile afterwards. Thus—to give one example out of many—a youth well-known to me, with whom I have made many experiments, was told by the operator, before the proceedings began, that when hypnotised he was to recognise and converse with me. He was then hypnotised by fixation in the usual way; after which he talked to me for a minute quite naturally. Then, with a single sentence, he was taken from my room to a church-yard, and was set to work at trimming a grave, where the grass had grown too long. He put great energy and humour into his task, and he now regarded me as a stranger who wanted to interfere with and rob him of his job. Another word from the operator, and he was in a boat in a storm, running up an anti-macassar for a sail, and lashing his companion to the mast for safety, his comments throughout being extremely vivid and amusing. Another word, and he was engrossed in watching a conjuror spinning

plates in the Brighton Aquarium ; he indulged in very free criticism, and, while greatly admiring, opined that the plates were loaded and the table made to slope inwards. I now got the operator to introduce me to him, and to place my hand in his, and by this means I obtained sufficient hold on him to make him half believe that he was in church ; but he was puzzled by the continuation of the plate-spinning, and at last he compromised his beliefs by saying that, though he would consent to sit in church, he must insist on watching the conjuror. A word from the operator obliterated the latter impression, and brought him wholly to church, where he pointed out various objects and, without the slightest suggestion, began mimicking the manner of a local preacher. I now again addressed him, and he again disowned acquaintance with me, though curiously he regarded me as the same stranger who had interfered with him before. Another word, and he was at home helping his mother with accounts, and did a sum which I gave him on paper correctly and with rapidity.¹ Here then the order of mental events, in the whole experiment, was unusual rigidity followed by unusual mobility. But how can we pretend that we *account for* the latter by recognising the former? So long as we keep to physical ground, it will be observed, no such difficulty occurs. If Braid had been asked how it is that fixation of particular muscles or nerves reacts on the higher nervous centres in so remarkable a manner, he might have fairly replied that physiology

¹ It may be asked what guarantee can be had, in such cases as the above, that the 'subject' is not acting a part in a condition of normal wakefulness. The test of pain cannot well be immediately applied, as in the alert stage of hypnotism there is rarely a marked diminution of sensibility. But the sensibility test can nevertheless be effectively brought to bear ; for, if left alone at the close of such manifestations as the above, the 'subject' will fall, usually with great rapidity, into the deeper stage of trance, in which any amount of such minor torments as pin-sticking and pinching may be applied without arousing him, or his conjunctiva may be touched without evoking more than a feeble reflex response. This is a state into which it cannot be maintained that robust youths are wont to pass at will out of a condition of normal wakefulness. Another test, which I have repeatedly applied, is to inform the 'subject,' on his complete waking, that he has apparently been dreaming of taking part in various scenes, and to offer him £20 if he will say what the scenes were. It will still, perhaps, be objected that though truly in a hypnotic condition and unable subsequently to recollect what has passed, the 'subject' may still at the time be only pretending to be a party to the scenes suggested. This supposition however is in conflict with all the evidence of every sort as to the conduct of hypnotised 'subjects,' and with every theory hitherto propounded ; while, even if true, it would leave the fact of the mobility of the attention just where it was.

abounds in puzzles no less special and insoluble. But if I am told that a particular mental attitude—that of fixed or one-sided attention—is the *cause* of certain mental phenomena which are new to me, I am surely justified in demanding that the order of events shall present some perceptible coherence—shall at least not run directly counter to what my general experience would have led me to expect. Such an objection might be pedantic—as against writers who of course have no thought of differing from Braid, or of denying the physical correlative of the attentive attitude—were it not that in their advocacy of attention they have curiously disregarded the *facts*, such as those just recorded, where this want of coherence is evident. The oracular simplicity of Bürger's formula, that the cause of hypnotic phenomena is essentially psychic, would hardly retain its impressiveness in face of hypnotic phenomena which in psychic character are at the precisely opposite pole from their antecedent.

But this objection has yet another side. Suppose we were told that the final result of cramping a limb or a psychic faculty was *paralysis*, where should we expect to find the paralysis? Surely in that limb, or in that faculty. And in the case of the *lower* hypnotic phenomena, what happens to the faculty of attention may doubtless be regarded in this light. Thus if a favourable 'subject' be allowed to stare at a button undisturbed, he will soon pass beyond the 'alert stage,' when his imagination and his body might be brought into activity by suggestions, and will simply become torpid and indifferent, though still often capable for some time of rational conversation; the cramped condition of his attention has not resulted in continued and absorbing attention to the button, but in *gradual paralysis* of the whole perceptive function. We have just observed how different is the case with the attention, if the 'subject' be taken in hand and suitably treated for the higher phenomena before this deep state has supervened; but the further point to be now noted about such phenomena is this—that while in them the *attention* is so little paralysed that it is even found to be abnormally mobile after a period of fixation on the button, *other* functions—those namely of choice, and will, and reaction in the way of attraction and repulsion—are paralysed. The effect on these reactions admits (as we shall see) of various degrees, but there can be no doubt as to its reality. In psychological terms, then, cramp of the *perceptive* has led to paralysis of the *appetitive* faculty—a fact which it would surely need a very enthusiastic psychicist to regard as self-explanatory.

It may be worth while here to note what I think has been

a main reason (though a very illogical one) for the tendency to regard previous fixity of attention as in itself a sufficient ground for the unhinged automatic mental condition of hypnotised 'subjects'. It is that certain *physical* phenomena, which may at first sight seem more startling (but are in reality far less unique) than the mental condition in question, have undoubtedly been known to follow or to accompany the state of fixed or expectant attention—that attention, however, being then always directed to the part of the body in which the phenomena were actually to appear; as in the familiar case where the steady contemplation of a particular finger leads to a sense of tingling in it. But even in this direction, where the mere attitude of attention and expectancy does actually seem of distinct efficiency, cases occur where the physical change cannot possibly be ascribed to that attitude, inasmuch as not even the vaguest realisation of the bodily part to be affected was in the patient's mind. Such a case is that of a woman who had been hypnotised by Braid for relief of violent pain in the arm and shoulder, and who found, much to his and her own surprise, that an opacity which had been left by rheumatic fever over more than half the cornea of her left eye was gradually clearing. This case has been most unaccountably quoted by Dr. Carpenter as an instance of the curative effects of mere attention. The result seems clearly attributable to that re-balancing or re-direction of nervous energy which Braid regards as characteristic of the hypnotic state—to those nervous events which are no mere correlate of an act of attention, but the result (as he explains) of a quite special physical cause.

But the objections to the attention-theory are not by any means exhausted by the difficulty of connecting the *process* with the *results* of hypnotisation: on the contrary, they become even more substantial if we confine ourselves to the latter. And they deserve note the more just because the theory here will actually cover so much ground—because so many of the hypnotic phenomena may be truly described as belonging to the 'pathology of the attention,' and admit of interesting treatment (*e.g.*, in G. H. Schneider's treatise, *Die psychologische Ursache der hypnotischen Erscheinungen*) in connexion with other branches of that wider subject. But in the first place, even in the alert stage of hypnosis, where mono-ideism with its accompanying loss of balance and control is often most conspicuous, it must always be borne in mind that this is not the essential peculiarity of the state. The fundamental fact according to

our formula is not that the psychic activities are abnormal, but that they are *reflex*; it is not the mere subjection of the mind to a single idea or set of ideas, but the certain production and alteration of that condition *ab extra*. In the second place, results are often loosely set down to the 'dominance of an idea,' where, if we enquire what the particular idea is, we fail to find it. A hypnotised boy is told that he may have a £5 note if he can pick it up. To suit the theory, the dominant idea must be that of the impossibility of the act; but even if we allow this idea a momentary dominance, in what sense can it be held to continue dominant during a struggle in which every word and gesture express the strongest determination and incredulity? It may, perhaps, be suggested that the words and gestures express no more than an ineffectual effort to resist a nevertheless dominant idea; but to this suggestion we may often oppose the 'subject's' subsequent description of his experience. And lastly, there remains the large class of cases which do not belong to what I have called the 'alert stage' of hypnotism at all; and where the attention-theory can only be applied by the desperate assumption that unusual deadness of sensibility in one direction necessarily involves unusual concentration in another. If a jet of gas is seen burning specially brightly, it is doubtless reasonable to connect this condition with the fact that the other jets in the chandelier are turned off;¹ but if no light at all can be perceived, the natural hypothesis surely is, not that some jet is burning brilliantly somewhere out of sight, but that *all* the jets are turned off. The energy of attention is not a fixed quantity, bound to be always in operation in one direction or another; nor does the human mind, any more truly than Nature, abhor a vacuum. Even in the 'alert stage,' when the 'subject' can be made by an occasional word to enact scene after scene with astonishing veracity and vigour, the indications, if he be left alone, are of blankness not of concentration. He knows where he is, and will answer if spoken to; but otherwise he sits inert and listless, if asked what he is thinking about will usually

¹ *A propos* of this metaphor, which is often of course an entirely just one, the following instance may be worth recording. A hypnotised 'subject' who strongly resented being even slightly pinched was impressed with the idea that a person to whom he was attached had died. He showed considerable emotion, and was now completely indifferent to the most savage pinching. Again, several 'subjects' who were sensitive to pain in the alert state, were thrown into the deep state, and impressed with a command which was to be executed when they emerged again into the alert state: when the emergence came, they showed entire insensitiveness until the command was duly performed.

answer 'nothing,' and soon passes into the deeper stage with closed eyes, in which, though still able for a brief period to respond to questions, he is insensible to any ordinary tactile stimuli. It would surely be irrational to refer that insensibility to the strong concentration in some unknown direction of an attention which, even in the previous 'alert state' with open eyes, there was no ground for supposing to be active. I do not urge the cases of obvious reflex action (on which Prof. Stanley Hall has made some good remarks in the paper already referred to), since on a theory like that of Herr Schneider, in which the lower centres, so far as they distinguish stimuli, are credited with an embryonic consciousness, the question might there be a mere question of words. The cases which I have in view are those where the results observed cannot, by any stretch of the meaning of attention, be reasonably connected either with the 'positive field'—i.e., with unusual absorption of the attention in the line of the result, whether as immediately producing it or as inhibiting its opposite¹—or with the 'negative field,' where insensibility and irrational conduct are the result of an unusual draining-off of attention from the ordinary sensory or ideational tracts into some other line. They are cases where, if we wish still to hypos-tatise attention, we must just say that it is paralysed or has fallen asleep. But such a mode of expression is not to be commended. For the sleep and paralysis may invade

¹ I gather from some expressions of Prof. Stanley Hall on the subject of 'active inhibition,' that he holds that the condition of the attention in this positive field may be further subdivided—that the *actual direction* of concentration may be not only towards the production, but towards the inhibition, of a particular mental phenomenon. This direct action of inhibition is hard to picture. The activity of active inhibition appears to me always to lie in a determined setting of the mind in some *new* direction: I mitigate a pain not by attending either to the pain or to an imagined absence of the pain, but by clenching my teeth and thinking of something else, i.e., by opening quite new channels of nervous energy. So when Prof. Stanley Hall inquires whether when a hand is made insensitive to pain, it is 'due to abnormally intense inhibition of sensation or motion by consciousness, or is better conceived as an entire detachment and vagrancy of attention from consciousness, of which it is conceived only as a concentration,' I find a difficulty in admitting the possibility of the first alternative, as also, I must confess, in catching the meaning of the second. In the proposed case, at any rate, I should not myself see the necessity of having recourse to either. If the hand is rendered insensible in the ordinary way by faint sensory stimuli, it is surely a case where the theory of direct physical inhibition of the lower sensory centre is exactly in place. The very different case where the manipulations employed do not produce any sensory stimuli at all, as where no contact is used and the arm is thickly enveloped in clothes, is one on which I shall have a word to say later.

some faculties and not others; *e.g.*, colour-blindness may supervene while the hearing remains perfect; and even in the deeper state of trance, ideas, and especially commands, may be impressed on the 'subject's' mind. What do we gain then by employing a general term to describe such special effects? When once the chandelier-metaphor is abandoned—when once it is recognised that in a multitude of cases the quantity of attention turned on in one direction is in no way connected with a withdrawal from any other—the idea of a common psychic factor seems out of place and misleading. The 'subject's' ear wakes while his eye sleeps; so in ordinary paralysis the right side may feel while the left does not; and it does not then occur to us to talk about the patient's *attention* being asleep on the left side and concentrated on the right.

And now we must make a sudden transition, from the theories which have unduly magnified psychic functions in hypnotism, to those which have unduly ignored them, and have substituted the shibboleths of physical reflex action and automatic cerebration for that of attention. If we trace the natural logical route of the subject, we shall see that a time was almost bound to arrive when a purely physical account of the whole range of phenomena would be attempted. Up to the time of Braid's death, no serious question seems to have been raised as to the relation of *consciousness* to the hypnotic manifestations. No doubt, at any rate, was expressed as to the presence of consciousness in those higher phenomena which belong to the lighter stage of the trance, and which form by far the most interesting part of the whole subject. Braid himself speaks of 'the extraordinary power of concentration of thought,' 'the rapt contemplation,' 'the glowing scenes and images' presented to 'the fervid imaginations' of his patients. But the very fact of tracing the observed phenomenon, as he did, to a peculiar physical condition must lead on to the question how far the psychical factors of consciousness and volition are really involved in them at all, and how far the suggested idea has any true existence in the 'subject's' mind. Granting that his attention has to be directed in the first instance to the monotonous process by which the state is produced, we have seen that the power of attention might naturally be expected to be paralysed by that very process, so as not to survive when the state is once reached; and we have seen that, if the 'alert stage' is not caught and used, this is what actually happens, the gradual dulling of the faculties passing on into

comatic unconsciousness. But there is nothing *prima facie* unreasonable in supposing attention to have passed away *before* this deep stage is reached—in supposing that it does not survive that profound nervous change which, following Braid, we infer to have supervened as soon as the alert stage is reached. The state of the 'subject' is so obviously peculiar that there would seem to be no strong *a priori* obligation on us to interpret what would ordinarily be accounted signs of consciousness in the usual way. Dr. Carpenter's wavering utterances already indicate some suspicion on this point; and the gradual progress in our knowledge of physical reflex action, and of its special connexion with the hypnotic state, has naturally given the question a new shape and significance. Hypnotism being, beyond doubt, the field on which such reflex action reaches its furthest limit, where is that limit to be drawn? The consideration of this point will further establish the distinction between the lower and the higher hypnotic phenomena, and will thus further define the fundamental peculiarity of the latter.

If we begin at the bottom of the series of phenomena, we certainly find no reason to suppose that they are accompanied by any distinct consciousness or concentration of attention. If we found it hard to credit the frog with attention during the process of hypnotisation, it is still harder when the process is complete; and the insensibility and immobility of the human 'subject,' if left to himself in the 'deep stage,' seem to indicate a mental condition not very different from the frog's. Higher in the scale, actual experiments in reflex action suggest a decided lowering of the psychical functions. The heightening of the reflex responsiveness of the *muscles*, which is often the first symptom of hypnotic influence, does not, it is true, serve as a sign of diminished mental activity, especially as the phenomenon itself—the twitching limbs and the inability to control them—is peculiarly calculated to stimulate the 'subject's' attention. But Prof. Stanley Hall's recent experiments avoid this difficulty, and give us just the indication that is needed. For in establishing the diminution, during the alert stage of hypnotism, of the time necessary for *voluntarily* reacting on a stimulus, they suggest that the reaction has become to some extent reflex;¹ and since this implies that the brain-

¹ It is worth observing that this extension of reflex action in one direction may perfectly well co-exist with what might appear a contrary result in another. For instance, Prof. Stanley Hall's 'subject' (I presume while in the same hypnotic stage as he was in during the reaction-experiments) could gaze at a sunny window for 13 minutes without winking. But the

action associated with conscious attention to the work of reacting is diminished, we may fairly suppose that the amount of conscious attention is itself diminished. And this leads us on to the more general supposition, that actions which would normally involve very distinct consciousness may be performed by the hypnotic 'subject' either with a lesser degree of it or entirely without it. There is thus considerable justification for Heidenhain's explanation of the singular exhibitions known as hypnotic *mimicry*. According to him, the movements or words of the operator, acting on the eyes or ears of the 'subject,' stimulate as usual the lower sensory centres; but in the hypnotic state, the functions of the higher cortical portion of the brain (to which nervous discharges are supposed normally to pass from the lower sensory centres) are *inhibited*, and consequently no effect is produced in the way of consciousness. At the same time, the disturbance in the lower sensory centres, though thus unaccompanied by consciousness, is sufficient to pass on the nervous discharge to the most nearly associated *motor* centres, which will naturally be those whose activity will produce the *same* words or movements; since clearly no association can well be closer or more constant than that between the sight and sound of a movement or word and the act of producing that movement or word. And since the same inhibition of the cortical functions, which precludes consciousness of the impression, precludes also the normal exercise of the power to direct and control movements,¹ the mimicry takes place mechanically and unfailingly, *i.e.*, as genuine reflex action. Heidenhain further extends this explanation to the phenomena of what he calls 'automatism at command'. He attributes the machine-like obedience of the 'subject' to a similar inhibition of cortical function, and to the consequent opening of an unimpeded channel of discharge from the lower ideational to the motor centres—*i.e.* from the place of the

ability to do this doubtless arose not from an inhibition of the normal reflex movement, but from a direct deadening of sensibility in a particular organ. So extreme a deadening in the 'alert stage' of hypnotism is rare, though out of several hundred 'subjects' I have found two whose eyes remain open even in the deep stage. Such exceptions are valuable as showing the variety that may exist even in the simplest facts of hypnotism.

¹ Heidenhain has introduced an *équivoque* into the terminology of the subject by calling the hypnotic action on the cortical functions *inhibition*, without pointing out explicitly that the *normal* action of those functions in respect of motion is to a large extent *inhibitory*, and that the complete description of the method by which the automatic reflex responses are brought is thus *inhibition of the inhibitory function*.

nervous discharges which, if allowed to pass on in the normal way, would result in the mental picture of an action, to the place of the nervous discharges immediately associated with the performance of that action.

But while it is important to note the facts to which this hypothesis will apply, and in which ideation and volition apparently play no part, it is of still greater importance to avoid mistaking this limited portion of the field for the whole. It is no doubt convenient for the theory to conceive the inhibition of directive and volitional power as accompanied by inhibition of consciousness; but the positive grounds on which the sweeping assertion of the unconsciousness rests are so flimsy that, but for the high authority of those who are opposed to me, I should almost have thought it waste of time to discuss them.

The most thorough-going statement of the doctrine in question appears, I regret to say, in a book which for general acuteness and comprehensiveness of treatment is superior to any other on the subject with which I am acquainted—the *Etude scientifique sur le Somnambulisme* of Dr. Despine, which in 1879 obtained its author a medal from the Medico-Psychological Society of Paris. The acuteness, it is true, is not unfailing. When a man concludes that the highest psychic manifestations may take place without consciousness, from the fact that the complicated vital functions of the animal and vegetable creation, while seeming to demand a capacity at least equal to that of an intelligent man, nevertheless take place unconsciously, and that the highest human intellect could not construct a butterfly's wing, we may defer our answer till a stomach or a tree begin to reason, or a butterfly's wing to decide knotty points. Popular arguments, moreover, are sometimes caught at in a manner fatal to consistency. Thus an appeal is made to the well-known ability of somnambulists to keep their balance in dangerous places and at giddy heights; which may reasonably be connected with unconsciousness of danger, and so far might pass muster as an argument for the temporary abolition of *all* psychic function. But on Despine's own principles, how should the somnambulist be any the safer for his unconsciousness? If cerebration, even its most subtle and complicated forms, can go on just as usual without any psychic correlative, why are we to except the particular cerebration that would normally be accompanied by fear, giddiness, and loss of balance? What is to prevent *that* in the given conditions from functioning in the normal way, and so producing a fall? So far from affording a proof of true auto-

matism, this is emphatically a case where the theory of *attention*—of a mind exclusively occupied with the next step and not occupying itself with ideas of falling—seems of most assistance. Dr. Despine's next argument, however, has more force. He finds an indication that even the most complicated psychic phenomena of hypnotism may be purely automatic in the fact that in certain abnormal states the personality seems doubled; as where a person recovering from typhoid fever spoke and sang, while seeming to himself to be listening to an other's performance, and without any idea what the next sound to be produced would be. Similarly religious ecstasies and 'trance-mediums' have delivered impromptu discourses without conscious cerebration, and have been the devout and admiring auditors of eloquence whose sense they grasped only after it had issued from their own lips. In these cases Dr. Despine attempts to make the one part of the person—the watching and attentive part—the witness of the automatism of the other part; and since, viewed in this light, the presence of the witness is not necessary to the production of the result, an argument is obtained for the general possibility of similar manifestations without any participation of consciousness. This artifice of making two people, A and B, out of one, in order (in the absence of evidence) to obtain a sort of presumption that A's presence is not a condition of B's actions, is not very convincing; at the same time there need be no great difficulty in admitting the particular possibility claimed. Few will dispute that the talking and singing might appear as purely automatic phenomena; and even the impromptu discourse, with its far more complicated series of actions, may be conceived as producible either in the absence or with a minimum of consciousness—its contents being presumably a string of familiar ideas, closely connected by association, and clothed in a hackneyed phraseology. Despine's error is in sweepingly applying the same argument to hypnotism, without remarking how radically different are many of the phenomena there presented. The psychologist who claims for his study the dignity of a science is surely bound to follow the physicists' example, and to take some trouble to vary the conditions of his observations; and in this question of the presence of consciousness, the very simplest experiments suggest the sort of variation that is necessary. A 'subject' is asked a question to which the obvious reply is 'yes,' and answers 'yes': he is asked another to which the obvious reply is 'no,' and answers 'no'. 'Clearly automatic reflex action,' say Despine and Heidenhain, with a

great show of reason. But now let us take a case where, though the answer is equally simple, the question itself does not suggest one answer rather than another. For instance, let some one, standing behind the 'subject,' give a very light clap of the hands at intervals, and let the 'subject' immediately before each clap and also at other times between the claps, be asked the question 'Do you hear this?' He will be found to answer 'yes' when a clap follows, 'no' when no clap follows. Now here even to suppose the answer 'yes' to be automatically given involves some strain of the reflex-theory; for granting that the physical attention might be fixed by the question—*i.e.*, that the nervous events corresponding to expectation of a faint sound might be thus produced—these events would in themselves have no tendency to produce the word 'yes' in response to the clap. In the normal state, that answer would involve a sense that a doubtful point had to be decided by the person himself, and the result truly communicated—a mental operation of some complexity and great delicacy; and if the same result be produced without any psychic concurrence, the physical events must at any rate differ considerably from anything involved in the trance-medium's self-propagating stream of irresponsible verbiage. But when the answer given is 'no,' the indication of a true psychical event—*viz.*, the consciousness of not hearing—corresponding to it seems almost irresistible; for here the answer, besides involving just the same delicate operations as the former one, would have to be reflexly jogged out not by the stimulation of sound, but by the *non*-stimulation of silence. Similar and far more complicated instances could be easily multiplied *ad infinitum*.

But Despine's principal argument, and Heidenhain's only one, depends on the 'subject's' subsequent *defect of memory* as to what has passed during his trance. It does not seem to have occurred to either of them that the requirement, as a test for present consciousness, that its content shall be afterwards remembered, requires itself any justification. Yet if the reality of that test be granted, the question whether a man was conscious when he read an article in the *Times* will depend on whether or not he receives a blow on the head when he has finished it. In his development of the argument, however, Despine shows considerable controversial ingenuity; and it must be admitted that those who have maintained the presence of consciousness in hypnotism and somnambulism have not always been happy in their way of accounting for the subsequent forgetfulness. This has been attributed by Dugald Stewart to the 'subject's' defect of attention to the

events that are passing ; by M. Maury to a mental paralysis brought about by an exhausting concentration of attention on those events,—theories so weak and baseless that we certainly need not grudge Despine the satisfaction of setting them off one against the other. So again, he has no difficulty in disposing of M. A. Lemoine's explanation that memory cannot survive the shock of the sudden change from the somnambulic to the natural state. A single instance, however, will show that his own counter-positions are very little stronger. He adduces the extreme violence of the things which have been done or suffered in the trance-condition, and argues that since these things, though so impressive in their nature, are not remembered, they must have been done or suffered unconsciously. The reply is obvious that equally violent things are done and suffered in *dreams* (which Despine again and again distinguishes from the trance-condition by the presence to them of consciousness and the *ego*), and are forgotten within a minute of waking. Equally obvious is it to notice that Despine's argument quietly begs the whole question ; for he is *assuming* for the abnormal state the same relation of consciousness to memory as exists in the normal state, forgetting that that identity of relation is precisely what he has to *prove*.

But there is a more radical objection to all these arguments for the unconsciousness of the 'subject' from the fact that subsequent memory is absent—the fact, namely, that it is frequently *present*. The *prima facie* indications of this subsequent memory, found in correct descriptions by the 'subject' of what he has been doing, are too obvious for even Heidenhain to have overlooked them ; and he brings them into harmony with his general theory by supposing that, when the abnormal inhibition of cortical function is removed, the excitation remaining in the lower centres transmits a stimulus to the liberated sensorial ganglion-cells—to be psychically represented as memory of the original exciting cause, which, when it actually operated, had no place in consciousness. He holds, however, that some distinct hint or impulse is necessary to bring up this residuary excitation to the requisite strength. And for many of the simpler phenomena this seems a satisfactory hypothesis. Further, the outward indications of remembering, in a new hypnotic state, what occurred in a former one, and the apparent taking-up of an old track of ideas, or even of a connected discourse, at the point where it had been abandoned, have been brought by Despine within the scope of purely automatic brain-action—the renewal of the hyp-

nosis bringing with it the former special excitatory conditions. But other phenomena seem quite beyond the legitimate scope of such a theory. If the 'subject' is brought into the 'alert state,' made to go through the ordinary platform buffooneries, and then reawakened, there is often not any breach of consciousness at all; and he gives a description, which there is not the slightest ground for calling in question, of his state of mind in performing the actions—as, *e.g.*, that he felt disinclined to do them but could not help it, or that he was aware of their absurdity but could see no reason for not doing them. Again, on re-hypnotisation the events of the previous hypnotic state are sometimes spoken of with fulness, in answer to perfectly neutral questions; nor do they merely recur in unrelated sequence, as by the release of particular springs, but are compared and estimated. There is here no mere rejoining of a temporarily-broken associative chain: the phrases used are to all appearance the normal results of a discursive and critical review of past experiences; and the *onus probandi* rests with those who deny that what gives every sign of being genuine memory is genuine memory. When once this hypnotic memory is duly recognised, the study of its varieties will be found of great interest; and in a recent paper (in *MIND* XXXIII.), I endeavoured to make this study the basis of a clear separation between two states—the 'alert' and the 'deep'—that have commonly been distinguished merely as steps in a single process, continuous stages on the path to hypnotic sleep.

The results there given have an important bearing on the central question as to the respective relations of consciousness and of reflex action to the hypnotic state, or rather states. Under appropriate conditions, we saw reason to recognise true subsequent memory, and therefore present consciousness, even in the lighter stages of what I called the 'deep' state; and when we passed upwards to the lower phenomena of the 'alert' state—*e.g.*, mimicry, and mechanical obedience—we could often appeal further to the absolute unbrokenness of the conscious stream. Where memory is absent, and where there is a distinct breach in the train of consciousness, arguments may still be drawn from experiments such as the one on hearing above recounted, where a point is left to the 'subject's' decision, and the truth of this decision is independently ascertained. Again, the end being suggested, the 'subject' will take his own means to accomplish it. He will use his reasoning powers—as in the case of Dr. Hack Tuke's 'subject' who was

asked if he could not walk forwards, and who 'remembers arguing out in his mind, wearily, that it followed from this he was walking backwards'. He will even form original theories as to what is told him. For instance, a young man who had been impressed with the idea that he was going to be hanged, was then told that his sweetheart had been blown off the pier and drowned, and that the announcement of the event was in the evening paper: he at once surmised that she had purposely thrown herself off, through grief at his approaching fate. He was now told that the second edition of the paper showed it was a mistake, and he suggested two explanations; the first that the name Newington had been wrongly printed for Newton; the second (in which he testified his belief by seizing a paper and pointing to what he imagined to be the actual passage), that the words in the second edition ran '*almost* blown off the pier, and *almost* drowned'. Again the hypnotised person, like the somnambulist, will sometimes go through complex calculations, and bring out a correct result with greater ease and certainty than in his normal state; while the vividness and inventiveness of his imagination, as under the stimulation of questions he pursues aloud the course of his waking-dream, are a source of ever fresh astonishment.

These latter facts alone cannot of course be made conclusive against a thorough-going automatic theory; but they at any rate suggest strong probabilities, which ought to be met by something better than bare assertions. First we have Heidenhain's crude attribution to reflex mimicry of *all* the phenomena which others have attributed to the dominance of an idea—his statement, *e.g.*, that a 'subject' will never eat a raw potato on the suggestion that it is a pear, unless the operator makes movements of mastication in his sight. This view produces a treatise. A few more experiments are made, and these produce a practical recantation with an admission of the sufficiency of suggested *ideas* to produce the appropriate bodily movements. Then comes Despine, and maintains that even the 'ideas' have only a physical existence. We do not dispute the admissibility of his conception in simple cases, but ask in vain why we are to extend it over the whole hypnotic field, and apply it to elaborate actions which have been accompanied by consciousness in the whole of our experience, and present every imaginable sign that the attention is completely engrossed by them. Are we to forego all discrimination, just because it saves trouble to have a simple and thorough-going theory? The situation may be put

thus. One set of facts (notably, the unbroken persistence of consciousness and memory in the passage into and back from the lightest stages of the trance) show that a hypnotic condition is not *ipso facto* an unconscious one. Another set of facts show that, in hypnotism, the line which separates mechanical and reflex from conscious and volitional actions is considerably shifted, and actions which would normally be above the threshold of consciousness sink below it. But what of that, if a multitude of actions, performed in that lighter stage of the trance to which the most interesting phenomena of hypnotism belong, do according to any natural interpretation imply a state distinctly above the threshold? We readily grant that we cannot draw the new line with certainty, even for a particular case; but all analogy is against supposing it shifted to the utmost limit at the very outset.

I cannot then for a moment believe that the automatic theory, in the extreme form which asserts unconsciousness for all hypnotic and somnambulant actions, will hold its ground. But in proportion as the theory becomes less sweeping, it gets into difficulties of detail. Heidenhain, as we have seen, has found himself obliged to recognise the psychic element in the higher hypnotic manifestations; but he seems oddly unaware of the effect of this admission on his exposition of the physical processes involved. The point of that exposition, it will be remembered, was the opening of a *direct* channel from impressional to motor nerve-centres, through inhibition of cortical function; and now we find a vast number of cases where consciousness, though conditioned by cortical activity, is *not* inhibited. It is of course easy to reply that here it is only the functions specially associated with spontaneous control and choice of movements that suffer inhibition. But that goes not a whit further as an explanation than Braid's general assertion of a profound nervous change; it is merely a necessary inference from the palpable fact that spontaneous control and choice have ceased. It is just this cessation—which, translated into physical terms, we should naturally call 'inhibition'—that constitutes the novel feature of the case; and nothing that we have otherwise known about inhibition (as Mr. Romanes, in his preface to the translation of Heidenhain's *Animal Magnetism*, has rightly admitted) could have led us to expect or conceive the results attributed to it. Heidenhain's *explanation* in fact, like that of the French Commission, is no more than a *restatement* of the problem. As long as the *whole* of cortical function can be supposed

to be eliminated, his theory has a certain symmetry and explanatory power. It gives a plausible account, involving neither consciousness nor volition, of the power of the simple sound 'go,' to produce an immediate corresponding movement of the 'subject'—the merit of the explanation being the easily conceivable picture of the nervous events which it supposes, and which are quite on a par with the recognised facts of reflex action. But when, *e.g.*, a long series of orders is thoughtfully and painfully carried out, long after they were given—a phenomenon not uncommon in 'mesmeric' exhibitions—it seems impossible to adapt the old (or any other) neat and symmetrical hypothesis of the nervous processes to the new phenomena; and the word 'reflex' can be applied to the latter, if at all, only in the peculiar and carefully guarded sense which confines it to their *psychical* aspect. It seems hardly possible that Heidenhain should have missed seeing this, had he waited to formulate his theories until he had witnessed some of the higher phenomena in their more striking forms. As soon as the elements of consciousness and volition are clearly recognised as active in such phenomena, it surely must equally be recognised that the fundamental peculiarity of the condition is simply the absorption of those elements into the one suggested channel of attention or expectancy, and is thus quite removed from the lower plane of physical 'reflex'.

So far, then, our formula of *conscious* or *psychic reflex* action, as expressing the true peculiarity of the higher hypnotic manifestations, has been defended against two sorts of over-simplification; that which ignores the part played by the mind in the phenomena; and that which, accepting the part played by the mind, fails to see that its differentiating feature is the liability to respond to suggestions with the same mechanical readiness as a stimulated muscle displays when the normal inhibitory influence is withdrawn. It is only stating the condition thus indicated in other words, to say that the heart of the problem lies not in *consciousness* but in *will*. And here another important distinction presents itself. The hypnotic automatism must not be conceived as necessarily implying any abrogation whatever of the will, taken as the *sense of desire or impulse*. That element admits of all degrees. It may be absent altogether, and the 'subject' may perform his acts, consciously indeed, but with complete indifference—in which case nothing is commoner than for him to believe and to assert afterwards that he could have avoided doing those

things if he had chosen; but it may also be present in full force, and may even be directly opposed to the course of action pursued. What is abrogated is not the sense of desire or the power of willing, but the sense of self-determination and the power of choosing. Even here questions of degree come in. In the very lightest stage—as exemplified by the boy who strove to pick up the bank-note—it cannot be said that choice, any more than desire, is abrogated; while even in a deeper stage, a ‘subject’ will sometimes experience such a sense of repugnance as seems to involve some residual power of avoidance; and occasionally he will retain complete power of choice in some isolated particular.¹ At the same time, this suspension of choice must be accepted as the most marked and central characteristic of the higher form of the hypnotic trance. And for those who regard the intuition of free-will as a subjective illusion, it is a point worth notice that decided abnormalities of conduct should present themselves precisely when, and in proportion as, the sense of having a free-will and being a choosing *ego* disappears. The variations are at any rate concomitant; and if nothing else varies, such concomitance would, outside metaphysics, be held to imply some sort of causal connexion. It may perhaps be objected that it would be incorrect to say that nothing else varies—that the essential variation is simply a change in the particular *motive* that assumes prominence; *e.g.*, that when a command is given to put the hand between the bars of the fire, and the determinant motive to a normal mind would be the dread of being burnt, the determinant motive to a hypnotised mind is the desire to obey the controller. But this is not at all in accordance with the evidence of many hypnotic ‘subjects’ who have been able to recall and give an account of their state of mind. They are often conscious of the falseness of what is told them, and of the folly and harmfulness of the things they are bidden to do²; they are even sensible of a strong objection to doing them, and *not*

¹ I was recently experimenting with a youth who had formerly been a telegraph-boy, and who had taken a strong dislike to the *métier*. When hypnotised, he was at the mercy of any suggestion or command, except one: nothing would induce him to carry a telegram. In its strength of resistance to the hypnotic mono-ideism, this repugnance really itself reached the mono-ideistic intensity; for the refusal was unaffected by considerations that would certainly have reversed it in the youth's normal state,—*e.g.*, when he was told that the matter was one of life and death, and that he should have £20 for the job.

² See a case reported by Dr. Hack Tuke, in the *Journal of Mental Science*, for April, 1883, p. 70.

sensible of any positive motive impelling them to act ; but it simply does not occur to them that they have a choice in the matter.¹ Even if we abandon free-will and stick to psychology, such facts as these seem decidedly awkward for the mechanical theory of the determination of conduct, at every point, by a motive that represents the greatest balance of foreseen pleasures or immunities from pain.

And we are thus led to the completing step in our description of the higher hypnotic state. That state may be regarded as the most complete exemplification of Prof. Bain's fruitful formula—*the tendency of an idea to act itself out*. I cannot regard Prof. Bain's own instances (*Mental and Moral Science*, p. 91) as the best examples of the law ; they seem to me rather to exemplify the common impulse to produce a marked effect, to 'make a scene' of some sort, even at one's own cost. At the same time, I think that his formula represents a reality, the scope of which even in ordinary life has hardly been sufficiently recognised. It seems to me the only possible ground for certain brief phases of sulkiness or perversity—the shade of meaning may be best conveyed by the slang 'cussedness'—where a person finds himself persisting in an attitude or a line of conduct which causes him acute discomfort at the time, with a promise of nothing but discomfort as the consequence. But in the case of hypnotism, at any rate, the idea is a most helpful one. For it enables us to bring under rule the cases that seemed most exceptional—where, *e.g.*, a 'subject' is told that he cannot do a particular thing, and struggles ineffectually to do it. We saw how absurd it was to represent his mind as throughout possessed by the idea of the impossibility, or his will as paralysed. But there is no great difficulty in supposing that the idea of impossibility obtains a momentary lodgment, and then tends to work itself out *physically*, even after the opposite idea—the idea that the action is possible and *shall* be accomplished—has dislodged it from consciousness. We might fairly compare the automatic continuance of the brain-

¹ The determinist may, no doubt, make a more general objection : he may say that the consciousness of free choice, however interpreted, is a normal antecedent of human voluntary action ; and that therefore he would have expected its absence to be accompanied by some other abnormality. I must, however, take leave to doubt whether, if taken unawares, he would have evolved this expectation—whether he would have regarded the (to him) purely illusive sense of having a free choice among several different courses as an indispensable element of directive force in the line of the one course that is actually taken. The hypnotic facts might therefore have an interest for him, if only because they clearly show the logical necessity of this very odd-looking admission.

movements which are evoked by the momentary stimulus of the first idea, to the long-continued and far-spreading muscular contractions which in a sensitive 'subject' will follow on a brief sensory stimulation: both are signs of the characteristic hypnotic irritability. This view seems strongly confirmed by the fact that, if the boy's muscles be examined, they will be found in the state which corresponds to the first idea—that of impossibility—and not to the second. I have myself tested this many times. A boy's arm being flexed, he is offered a sovereign to extend it. He struggles till he is red in the face; but all the while his triceps is remaining quite flaccid, or, if some rigidity appears in it, the effect is at once counteracted by an equal rigidity in the biceps. The idea of the impossibility of extension, *i.e.*, the idea of continued flexion, is thus 'acting itself out,' even when wholly rejected from the mind.

It is perhaps well that my space is nearly exhausted; for it might be held unfitting, in this place, to do more than hint at results, however simple and precise, which break away from every form of hypnotic hypothesis. Community of sensation between 'subject' and operator; the distinction by the 'subject' of the operator's faintest whisper, either amid deafening uproar, or among a number of other faint whispers of similar sound; local anæsthesia produced in the absence of expectancy by a process which is itself unfelt; inhibition of speech or memory without a word or sign of any sort;—a writer who should say that he has participated in experiments which establish these facts would grievously imperil his chance of being listened to on the sober ground of Hypnotism. At the same time the *naïveté* and suddenness with which the clamorous facts of Hypnotism itself were welcomed within the portals of science, as soon as a *savant* of established reputation took the trouble to learn (very imperfectly) the ABC of them, and to proclaim that they actually were realities, that his own brother had been experimented on, and that it was *not* all cheating, as he had all his life supposed—may perhaps suggest a quiet surmise as to the scientific future of other events which, with all their absurdity and inadmissibility thick upon them, still go through the hollow form of taking place with surprising accuracy. But leaving these matters aside, no sketch of 'the problems of hypnotism' could be in the least complete without mentioning certain objections which present themselves in the direct path of orthodox

hypnotic experiment, and which concern the very processes on which the hypnotic explanations are made to rest.

At the very outset, there is the difficulty of the vast differences of degree that exist in the power to produce the results—a difficulty which has never been fairly faced, much less surmounted. It has been asserted, and in a sense it may be true, that any one can hypnotise any one: any one, that is, may be competent to make passes in the gentle and monotonous manner which acts on the organism of sensitive 'subjects,' and with immense perseverance may produce some amount of the hypnotic effect. But let a score of likely 'subjects' be taken who have never before been hypnotised, and let a dozen persons who have been instructed in the right method of making the passes be set in turn to operate on them, and let this dozen include one recognised and successful 'mesmerist': if the experiment be often repeated, always with fresh 'subjects,' it may be safely asserted that in the long run the successes of the 'mesmerist' will outnumber those of all his rivals put together, and moreover will as a rule be far more marked in character and far more rapidly effected. And this is the more noticeable in that, supposing the usual process to be adopted, the condition which on the hypnotic hypothesis would appear to be the most important—the staring fixedly at an object in the hand—would be common to all the attempts, and little if any of the required monotonous stimulation would be derived from the actual passes—the operator's hands not being in contact with the 'subject' till perhaps the very final stage of closing the eyelids. But if the truth of the above assertion be denied—and fully to carry out the experiment with a new set of 'subjects' daily would involve great practical difficulties—the result of repeated attempts with the same 'subject' will afford a still stronger argument. A recognised 'mesmerist,' after a very few successful trials on favourable 'subjects,' can send them into the trance in a very short time, sometimes even with a single pass; but except in response to him they will show no particular susceptibility; and no attempt of others, extending only over the few seconds that suffice the successful operator, will produce any effect whatever. To account for facts like these, as Heidenhain has done, by differences in the moisture or temperature of the operating hands, seems little better than childish—as if a somewhat warm and moist hand (even were it indispensable, which it is not) were a sort of *lusus naturæ*. Somewhat more plausible is the suggestion that the facts really exemplify the dominance

of an idea—that the ‘subjects’ *believe* that their mesmerist has special power, and as a consequence of that belief succumb to him. But it really seems absurd to suppose that this faith in a single individual’s power is unfailingly complete and absorbing in every member of a set of careless boys who are new to the whole business, and whose obedience to the simple directions which they receive, and passive acceptance of what happens to them, certainly do not suggest any nice criticism of the nature and limits of their operator’s faculties. There is no difficulty in impressing such ‘subjects’ with the idea that some other person present, who may be of a more dominant and imposing aspect than their recognised controller, is also a powerful ‘mesmerist’; but this preparatory idea will not be found to invest that person with any of the controller’s powers.

The hypothesis of suggestion and expectancy is still more obviously inappropriate where the end in view is not the *production*, but the *termination*, of the trance-condition. It would be very strained to imagine that the mind of the ‘subject’ is in every case dominated, or even that he *was* dominated at the time when the condition was being produced, by the idea that only the producer of it has the power to put a stop to it. Yet he will often remain completely uninfluenced by the efforts of others to awake him, and that, too, even when only a light phase of the trance has been induced. The upward passes, or the slap of the hands and sudden call, which are at once effective when used by the right operator, may be repeated in vain by others. This fact has occasionally led to very awkward results; as, for instance, in London some years ago, when one mesmerised ‘subject’ was set to mesmerise some one else, and then, after he had succeeded in producing a state of profound coma, passed himself into a condition in which it was impossible to impress him with the necessity of undoing his own work.

This disagreeable incident suggests another well-known class of phenomena of which no explanation on any purely hypnotic hypothesis seems possible—the so-called ‘cross-mesmerism’ or agitated bewilderment which is apt to result when a mesmerised person is subjected to new treatment from a second operator, before the effects of the former treatment have disappeared. The phenomena are of too alarming and distressing a kind to admit of deliberate experiment, but when once seen, are not easily mistaken; and a slight but sufficient indication of their nature is sometimes afforded in a momentary way by the violence which the

'subject,' who is perfectly docile in the hands of his mesmerist, will display when accidentally touched or interfered with by a bystander. If this be explained away as an instance of the 'dominance of an idea,' we ask, of what idea? Is it the idea of the operator, with which the 'subject's' mind is so wholly engrossed as to react with violence on any attempt to divert it? But if he is in the alert stage, his mind is so little riveted on his operator that it is abnormally ready to be borne off by any and every suggestion; and if he is in the deep stage, it is an unwarrantable assumption that his mind is engrossed with anything at all. Nor can the view that *suggestion* is the cause of the phenomenon—though a natural enough one to start with and applicable to some cases—survive a prolonged and patient study of the facts. Instances will be found where it is practically certain that no idea, tending to make the 'subject' dread interference from all persons save one had been even remotely suggested to him; and where, if any such idea were really dominant in his mind, it could only itself be an instance of the specific *rappport* which Hypnotism fails to account for.

Such considerations as these, though they lie across the threshold of the subject, are apt from their very generality to be disregarded; but it is easy enough to find in single definite phenomena—and these not among the outlying marvels above referred to, but among the experiments which are the stronghold of the hypnotic theories—a starting-point for similar objections. A boy is placed in a chair and is not hypnotised; but his arm is rendered stiff and insensible after a minute of downward stroking. 'Reflex irritability,' say some of our friends; 'the monotonous sensory stimulation has produced the well-known tonic spasm.' A thoroughly sound explanation; but let us try the effect of downward passes made without contact or any possibility of sensory stimulation. The same result ensues; the usual tests of torture and bribes may be applied, with complete impunity to the 'subject's' arm in the former case, and to the experimenter's pocket in the latter. 'Expectant attention,' say other of our friends; 'an interesting example of the power of mind over body; the boy believes in the operator's power, and his mental energy, being absorbed into the single channel of the expected effect, brings that effect to pass.' Very probably; but on experimental principles it is surely just worth while, before promulgating this very probable theory, to test it by a single variation of conditions. Let the experiment be repeated, then, with this difference—that the boy is made to read aloud a paragraph

from a newspaper as long as the process continues, having been previously warned that he must carefully attend to what he is reading, as he will be examined in it afterwards. After this warning it is not surprising that he should stand the examination successfully; but a little surprising, on the proposed theory, that the stiffness and insensibility should again have supervened.¹ When such an experiment has succeeded with 'subject' after 'subject,' and when their expressions of astonishment have suggested that in many cases the idea of the result was not even latently present in their minds, it is natural to devise measures for preventing the possibility even of the latent idea; as, *e.g.*, by extending the 'subject's' ten fingers on a table in front of him, with a thick screen between them and his eyes, selecting a couple of them (the combination being of course varied each time), and then subjecting the selected pair to the same process as the arm. But I am approaching the region of marvels and the theory of specific influence which I have here forsworn. To relieve one's mind by observing how fairly the mesmeric hypothesis embraces and explains the facts which so violently break away from the hypnotic one, is perhaps not more unscientific than to neglect and ignore those intractable facts; but to those who do not share it, such relief will naturally seem to resemble the escape from subordinate perplexities which the devout Catholic makes by swallowing one huge assumption at the outset.

¹ With regard to the question how far the idea of his arm was present to the 'subject' of this experiment, it was instructive to compare his vivacious reading and subsequent remembrance in this case with his mechanical reading and subsequent oblivion when (as described in *MIND* XXXIII.) he had been thrown into the hypnotic state, and then had the idea of his arm prominently brought before his mind. In that case the idea remained truly dominant, and left no room for attention to the reading.