



Suggestibility, Automatism, and Kindred
Phenomena.

(I wish to acknowledge my indebtedness to the recent French and English writers on these topics, especially to Pierre Janet, with whose theory as developed in his work, *L'Automatisme Psychologique*, the above doctrines are essentially identical. It should be noted, however, that Janet expressly repudiates any attempt to bring his psychological theory into connection with our psycho-physiological speculations.)

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I. Mental Co-ordination & Organi-
zation.

The thoroughgoing parallelism of mind & brain may be regarded as an accepted principle of current psychology. There remain, it is true, a few psychologists who dispute it,

and many of those who accept it as a working principle refuse to regard it as final. It is conceivable, say they, that when our knowledge is more complete we shall discover that the relation of mind and brain is very different from what we now suppose it to be. Yet we may be sure that the facts upon which the doctrine of parallelism rests will never be set aside by any new discoveries, and will find their place in that final theory toward which we are slowly moving.

It is somewhat surprising that few, even of those who accept this theory as a working hypothesis, have endeavored to carry it out into all its logical implications & to see how far they will fit the actual facts. It is my own belief that the more thoroughly this is done the more probable does it appear that every mental state has its accompanying physical process, and the more rigorously we apply the dynamic conceptions suggested by our scanty knowledge of these physical pro-

cesses to their accompanying mental states, the more intelligible does our inner life become to us. Especially is this true of certain curious phenomena to which our current psychology pays little attention — those of automatism, suggestibility, and double consciousness as seen in hypnosis, spirit-writing, trance speech, et id genus omne. Not that we are yet in position to explain these phenomena in detail. There is much that defies analysis at our present stage of knowledge, but I have no hesitation in saying that in these dynamic conceptions we have found the key which will in time solve these and many other psychological riddles.

We know little or nothing of what happens in the brain while we live & move and have our being. In the early days of experimental psychology the physical bases of mental states were crudely conceived as gross movements

either of the nerves themselves or of some fluid supposed to flow along the nerves themselves, or of some and veins to the brain and heart. Nowadays these simpler conceptions are displaced by theories of chemical activities or molecular vibrations of some kind. For my own part, I am sometimes inclined to suspect that the true physical basis is none of these, but a disturbance of the same medium that transmit light and heat — the ether — and to regard the cellular and fibrous structures of the nervous system as a mechanism for producing and transmitting these disturbances, much as the battery and wires of an electric circuit produce and transmit that mode of ethereal disturbance which we call electricity. However this may be, it is quite certain that the processes which take place in the nervous system are all of one order and analogous to — nay, a part of — the physical transformations of energy which we see in the outer world. Their proximate source is the stored-up

molecular energy of the food we eat; they are disengaged by the operation of external & internal stimuli; they can reinforce or destroy one another; they can produce extensive molecular, secretory, and nutritive changes in the body.

Although all of these processes are of essentially the same order in that all taken together form one system of forces, the constitution of every part of which depends for its character upon the constitution of all the coexisting parts, it is probable that consciousness is not connected with every part of the system, but ^{only} with those processes that take place in the cortex — that is, the outer layer of gray matter that covers the surface of the brain. In every moment of conscious life the cortex is the scene of activities so delicate and complex that we can never hope to frame an adequate conception of them. The masses of cells are forever disengaging pulse after pulse of molecular or ethereal disturbance, probably of a vibratory cha-

racter; by the countless systems of interlacing fibers these pulses are transmitted from one cortical area to another; meeting they re-enforce or destroy one another; impinging upon a cell system which was in comparative quiet, they rouse it to activity, and are themselves modified by the pulses which it gives forth. At every second this man of activities is receiving from the myriads of nerves that reach out to the eye, ear, skin, and other sensitive portions of the body countless other pulses of the same character, but initiated by the physical stimuli of the external world or by the chemical changes of the body. These pulses are not accompanied by consciousness, but when they reach the cortex they merge into the complex mass there existing and contribute their share toward the character of the total conscious state. And in the last place, the activities disengaged within the cortex are ever disengaging downward through the outgoing channels into the co-ordi-

nating mechanism at the base of the brain. This controls the systems of muscular contractions needed for the performance of our bodily movements much as the "combination stops" of ~~the~~ ^{an} organ control the systems of pipes needed to produce any given timbre effect.

Thus the consciousness that you and I at any moment experience depends for its character upon the constitution of a system of activities as definite & determinate as any known to the physicist, although so complex that we can never hope to unravel it. To compare the complex to the simple, we have all seen the play of color upon the surface of a soap bubble. These colors depend for their character upon the constitution of a system of forces far more simple than that which underlies the human consciousness. They are due to the interference of waves of ether reflected from the inner and outer surfaces of the film,

they depend, therefore, upon the angle of incidence and the thickness of the film.

These two conditions again depend upon the tenacity of the film, the difference between the pressure within and that without the bubble, the action of air currents, the muscular tremor of the hand that holds the pipe, the action of gravity, etc. If any one of these conditions be in any way altered, some change will be made in the tint. This throws light upon one of the reasons why psychology lags so far behind the other sciences. Suppose the physicist should select that one square inch on the surface of the bubble where the colors were brightest, & should endeavor to formulate for each, in terms of the others, the laws of existence & sequence ignoring the whole the system of forces upon which those colors depend. However painstaking his efforts, they would meet with little success, & this has been the fate of the psychologist. Too often he has confined his attention

to that portion of consciousness which was brightest, or for some other reason the most interesting, while he had but looked into the marginal or subconscious he would have found traces there of the activities which were all the while affecting the area of greatest vividness.

Not only is consciousness as a whole thus correlated to a system of physical forces, but we find that its several elements are also related to certain subordinate systems of forces which, while forming ⁿⁱ part of that total, have a certain degree of independence. It is known, for example, that the activities that take place in the temporal occipital or hinder portion of the cortex are accompanied by sensations & ideas of color; those that take place in the temporal region, in the neighborhood of the ear, have to do with sensations & ideas of sound; those of the Rolandic region, which forms a archlike band passing over the brain from a point a little in front of the ear, are probably the basis of sensations & ideas

of movements as felt. Since the awakening of these latter tend to produce or sustain the movement in question, and since volition is but another name for the initiation of a movement through an idea representing it or something ^{with} which it is associated, this is also a region essential to the performance of voluntary movements. And it is probable that all the definite qualities of sensation & the corresponding ideas are related more or less well defined portions of the cortex. But we know that even our very simple ideas — as those of a rose, or a book, or a man — involve elements drawn from many of these sources. We must then suppose that the idea of a rose depends upon a co-ordination of processes which, although situated in different portions of the brain, act together in the production of this idea. As my thought flits from the color to the fragrance, to the touch, to the plucking of the rose, so do the pulses of energy pass along the conducting fibers from the region of vision to that of smell, to that of

touch, to that of movement. Further, as the rose is to me a relatively stable thing, we must suppose that these physical processes are not merely co-ordinated for the time being, but are organized into a quite permanent system which retains its coherence and existence as a system as long as the idea of a rose remains to me one and the same idea, although consisting of unlike mental elements.

I can not undertake to work out in detail many of the more complex organizations or systems which we can detect in mind. To do that would be to write a treatise on psychology, and my only object at present is to make clear the conceptions of co-ordination & organization. Yet to two of these more complex forms — and they are unfortunately the most complex of all — I must make some reference, since a comprehension of them is presupposed in the application of this theory to the curious phenomena which we wish to explain.

I have shown that the state of conscious-

ness at any given moment involves a very complex co-ordination of the forces that underlie it. And I have also shown that the permanent existence of any element of consciousness, if at all complex, involves not merely a co-ordination, which might be temporary, but a permanent organization of certain of those forces into enduring systems. Not enduring in the sense that when any one element is active it calls into activity the other elements as well. The same is true of consciousness as a whole. We may discern this in two quite different forms. The first is what we may call the permanent form of consciousness. We observe that at any given time consciousness has a certain form of organization which is so constant that we are tempted to think it can not exist in any other form. Some one element or organized group of elements tends to be more clear & distinct than the others. This one is called the center of attention or focus of consciousness; the others constitute the margin. From moment to moment the

focus shifts; new elements rise into dominance, and the old fade away. Yet there is always a dominant element, & this is to which we attend. Usually the focus & margin are inversely related to one another, that is to say, when any given group tends to become more clear and distinct the other elements tend to lose with respect to clearness and distinctness. This is what we mean when we say that we can not attend to two things at once. But it is not always true. There are states in which the heightening of one element tends to heighten all the others as well. In imminent danger, for instance, there is frequently an intense exaltation of the total content of consciousness, & the same phenomenon is occasionally found as a precursor of an epileptic attack. Now, this constant form into which consciousness tends to fall, and which is, by the way, the basis of our notion that the mind is a single entity of some sort, is very suggestive. We know that all physical forces, if they can in any way act ^{upon} one another,

tend to coalesce & into one common resultant, and I think it probable that in the law of attention we see the mental manifestation of some form of coalescence between the physical forces which form its basis.

Again, the consciousness of each of us forms a permanent entity which we severally call "myself." Into all the problems connected with this word of many meanings I can not enter, but of one thing we may be quite certain — whatever the consciousness of self may be, it is largely dependent upon the continuity and uniformity of our memories. Any great & change in a man's life which introduces into his present a mass of experiences quite out of keeping with his past is apt to introduce into his consciousness of personal identity a strange sense of unreality and uncertainty. He rubs his eyes & says: "Who am I? am I really John Smith? am I the man who did this ~~or~~ that? or is it merely a dream?" And when we go further, and ⁺totally destroy a man's memories, as not infrequently

happens in cases of disease or accident, we find that the consciousness of personal identity is also gone. The ^{man} may know that he is some body, or at least that he ought to be some body, but he can not tell who he is. If the injury be greater still, even this consciousness that he ought to be somebody is lost, and the patient sinks into a condition of dementia, which we can not well understand because it is so utterly unlike anything that we have experienced.

Now, evidently, this is very like the case of the simple idea, as that of a rose, which is the standard illustration of psychology, depends upon the organization of a permanent system of physical forces of some kind and I think we have reason to believe that the man remains the same for much the same reason, although the elements entering into that system are a thousandfold more numerous and more complexly interlaced.

11. The Properties of Mental States. —

The Conception of the Subconscious.

There is another deduction from the doctrine of parallelism which has been much disputed but which seems to me legitimate. I know that when I glance up from my paper, see a pen, reach out & take it, ether waves which fell upon the retina of my eye produced these chemical changes which irritated the optic nerve; the irritation was transmitted to the visual centers of the brain, thence propagated to the motor centers, and from the motor centers went an impulse which contracted the muscles of my arm. But I am not directly conscious of all this. It seems to me that the conscious state which I call the perception of the pen caused the thought of the movement and the movement itself at almost the same time. Now, if we believe that every conscious state which we know has its physical concomitant of which we know nothing save by inference, I see no reason why we may not, for the time at least, ascribe directly the mental states

the properties which we believe belong in all strictness to their physical bases only. This, I think it correct to say that the perception of the pen awakened the thought of taking it & that that in turn produced the movement. Yet in using this form of speech we must guard against certain erroneous inferences which are frequently drawn from it. The first is that the perception of the pen was the only cause of ^{the thought of} taking it, and so on, we now know that the whole sequence which I have described depends for its existence & development upon the constitution of the total system of processes. This we are apt to forget, when we deal with the mental only, for the law of attention prevents any but a small portion of those processes obtaining ^{clear} proper recognition in consciousness at any one time: the remainder affect the clearest portion more or less, but exist themselves only dimly in the marginal region to which I am not attending. Again, we must not suppose that in ascribing to the mental states active properties we mean

to imply that the mental states could exist or manifest those properties ^{and} from the physical processes which form their basis, or that they can act upon them in any way from outside, as the older psychology supposed, I do not think, as most psychologists do, that this notion is inconsistent with the doctrine of parallelism, but it certainly can not be derived from it, or from the facts upon which it rests. Guarding against these two errors, then, we may justly regard ^{the} mental state as an active, dynamic thing, subject to laws and possessed of properties into which it is the business of the psychologist to inquire.

We all know the difference between red as seen and red as we think it, although the difference is hard to describe. In most persons the sensation red is peculiarly intense & vivid, while the idea is lacking in some indescribable way in both these traits. Now, we have reason to believe that both mental states are of the same general kind, and that the idea is capable of passing

into a state distinguishable from the sensation. Such a transition is known as development. In some persons certain ideas are normally already developed, so to speak, to their maximum degree. A friend of mine tells me that, so far as vividness & intensity go, it makes little difference to him whether his eyes are open or shut — what he sees is about the same in either case. But more commonly the idea must be much heightened before it reaches sensetinal intensity. Another friend of mine by thinking intently of a friend's appearance can see that friend slowly taking shape, at first as a shadowy outline, then gaining in clearness & solidity until the shadowy outline has become the perfect form of a real person. Now, if we regard the dimmest idea as zero & the clear sensation as the maximum, we may say that any mental state may conceivably run through all the intervening grades, & we have reason to believe that every mental state tends to run through some grades.

This I would express by saying that every mental state tends to develop within limits which we can not at present assign. The first property of the mental state, then, is that of development. It is of importance in explaining the phenomena of dreams and hallucinations.

The second group of properties which I shall mention depend upon the transmissibility of the physical impulse. I have already shown in my first paper how mental elements become agglutinated into systems in which any one tends to awaken the others. It is also true of the relation of any one system to another; ~~they~~ they tend to awaken one another. This is what is commonly described as association of ideas. The reverse is also true, although not as well known; many states tend to prevent the appearance of other states. Agreeable states, for example, tend to force out the disagreeable, & vice versa. This, then, may be generalized in the statement of the second property of mental states: every mental state tends to produce, or prevent the production of, other states. We may suppose

that these phenomena are due to the interplay of systems of activities within the cortex with one another.

But these activities within the cortex which underlie our ordinary life of sensation & thought tend also to discharge downward through the Rolandic region into the motor mechanism, producing contractions of the muscles. Thus the third property of the mental state is the ability to produce or prevent muscular contraction. Not all mental states have this property in the same degree. It is most evidently true of the feeling of movement. I once asked a class of sixteen girls to think intently what it would feel like to lift the right hand & touch the left shoulder. After a few minutes had elapsed nine of them confessed having felt a desire to do it. I then dropped the subject & spoke of some thing else: in a few moments six actually did it. Most persons when concentrating attention upon the thought of what a given movement would feel like, find themselves becoming possessed of a desire to do it,

and the desire marks the tendency of the thought to produce the movement. But as we not only feel but also see our movements, we find that the thought of what a movement looks like has also motor value & tends to produce it. This is also true of touches & ideas of touches — indeed, all or nearly all mental states produce some motor changes in the body, but the motor effects of sensations and ideas of sound, taste, & smell are relatively slight.

Again, mental states tend to help or hinder the processes of secretion and nutrition. We all know that the secretions of the salivary glands, of the kidneys, of the mammary, and other glands are readily affected by many mental states, but its effects upon the process of nutrition is more disputed. It is quite certain that in a general way the impulses sent out of the central nervous system are necessary to the proper nutrition of the body, but it is not as generally accepted that individual mental states can produce definite changes,

as, for example, when it is reported that a hypnotized patient, by thinking of a burn, has actually produced the burn. Yet even for this there is good evidence.

One may justly ask. how it is, if mental states have really, have definite consequences, that we fail to note in our mental life the orderly sequence of cause & effect with which we are familiar in the physical world? If there be any truth in the theory above outlined, this inability to observe it is precisely what one should expect. It is not possible to analyze the total content of consciousness into any definite number of "states". The total state of consciousness at any given moment depend upon the condition and character of a system of physical activities, & its few distinguishable elements are related to some rather than to other elements of that system. But no portion of the system could be what it is the other portions were not just what they are, and in the succession of the clearer states of consciousness we see not merely the effect of the one clear

state upon the next clear state, but the effect of one whole system upon the next whole system; and often the active factor in determining ^{the} character of the next clear state is not what was clearest in the preceding, but one of those which were dimly existent in the margin, or even one of those that were subconscious. To determine the true properties of any state it would be necessary to isolate it by breaking up this co-ordination, & that, as I shall show later, we can to some extent do,

Before taking up these more complex forms of disorganization, or, better, disordination, I must make plain the meaning of the word subconscious, which, I have had occasion once or twice to use,

I am sitting in a chair & reading an interesting story; the clock strikes & I do not hear it. Why? There are only four possible theories. We must suppose that the air vibrations strike the ear drum & are propagated through the ear bones & lymph to the audi-

auditory nerve. Then either (1) the physical process is blocked at some point between the terminal filaments of the auditory nerve in the inner ear & its origin in the cortex; or (2) the irritation reaches the cortex, but fails to awaken any cortical process; or (3) it awakens a cortical process which is unaccompanied by any mental state, or (4) it awakens both a cortical process & a mental state. For the first of these alternatives there is no evidence. On the contrary, since I hear the clock strike if I am expecting it, and since all theories require us to regard expectation as dependent upon cortical processes, if any mental phenomena are, we must look to the cortex for the explanation and not to the peripheral machinery. The second alternative is conceivable, but there is no direct evidence for it & there is some against it. It is frequently possible, for example, to awaken by hypnotic suggestion a memory of the event which was not consciously experienced, and, as memory depends upon the traces left by

earlier experiences in the cortex, it would seem to follow that there must have been a cortical disturbance. The third alternative is more probable. There is reason for believing that any cortical process must attain a certain degree of intensity before its mental concomitant comes ^{into} being at all, & perhaps the existence of other active processes prevents its attaining that degree of intensity. Again, if we revert to the old soul theory, now almost wholly abandoned by psychologists, but still, I think, worthy of consideration, we may suppose that the cortical process alone can not produce consciousness, but requires the co-operation of some other factor. The pros & cons in these last two suppositions are too intricate for present discussion, and, indeed, my purpose is, not to prove a theory, but to state the fourth supposition & to analyze some of its logical implications.

The parallel theory would raise the presumption that any cortical process is accompanied by mental phenomena of some kind.

We would then assume, in the case under consideration, that the cortical process in the auditory center generated a sound. But how ^{is} this to be reconciled to the testimony of consciousness, that I heard no sound?

Well, it may be that I did hear it, but instantly forgot it, so that my present memory of that period contains no trace of it. That this frequently happens there can be no doubt, but there are many curious phenomena which require a further assumption, and that further assumption may be thus stated: The sound may have existed & simply as a solitary sound, all alone, not in my consciousness or in the consciousness of any one, but as a bare mental event, related to my consciousness much as a sound in your consciousness is related to mine. It is not an easy conception to grasp, for our mental life always consists of many elements, and it would seem that this multiplicity is essentially involved in our notion of consciousness. Yet occasionally we have experiences which help us in forming the conception of a mental state existing outside

a personal consciousness. I remember a trifling operation upon the eye which I once underwent. For a few seconds my consciousness seemed reduced to one element — a flood of frightful pain, which was not in my eye but seemed to pervade my whole being, to me almost complete exclusion of all else. Again, under nitrous oxide, my consciousness seemed reduced to something so rudimentary as to be wholly indescribable. I have heard of many similar experiences.

Without pronouncing upon the relative merits of the last two hypotheses I shall develop some of the logical implications of the latter. A state such as I have described, supposed to exist within my head, so to speak, but outside my consciousness, may be described as subconscious. There are, then, two conceivable ways in which a mental state may vanish from the upper consciousness. The cortical process upon which it depends may die away; it then perishes absolutely; or the cortical process

may be dissociated from the system underlying the total consciousness and yet remain active, thus giving rise to a subconscious state. This supposition, that a cortical process may exist without coalescing at all with the general system, is a somewhat novel assumption, and it is in my opinion the weakest point of the theory. It would require the further assumption that a cortical system, once co-ordinated, tends to exist resist the introduction of a new element into it, & for this there is some introspective evidence.

For consistency's sake the dynamic conceptions which I would apply to mental states in consciousness must be applied also to these mental states existing subconsciously. Subconscious ideas and sensations must be capable of development in intensity, and in perfection of finish, so to speak; must be able to awaken associated ideas, to produce bodily movements, to affect secretion & other metabolic processes. It would appear possible that the dissociated processes underlying them may suddenly effect re-union

with the upper system, thus intruding the sub-conscious state into the upper consciousness. When it does not actually effect a union it is conceivable that some of its results, such as its associated ideas or emotional consequences, may appear in the upper consciousness. It is also conceivable that its mere existence may disturb the normal tension of the cortical activities, what has been termed the psychostatic equilibrium of the cortex, and thus affect the upper consciousness. A mental state supposed to be thus growing & working subconsciously has been happily termed by Pierre Janet a mental parasite or neoplasm. For all these inferences, which I have stated as deductions from the hypothesis that there exist mental states dissociated from the normal consciousness, there is a great deal of direct evidence, & it is upon an inductive study of that evidence that the hypothesis is based; but the limitations of space prevents my giving concrete illustrations.

III Disordination & Incoordination.

In my two former papers I have sketched the conception of any state of consciousness as a coordination of mental elements which might conceivably exist independently, and have endeavored to bring it into relation with our conception of the physical basis of consciousness as a similarly coordinated system of forces to certain elements of which the various discernible elements of consciousness in some sense correspond; and I have drawn from this fundamental conception two inferences; (1) That we must think and reason about the mental thing as we would about its physical basis; we must therefore ascribe to it dynamic properties which will in the long run be found correspond to the laws of brain functioning. (2) It is conceivable that a cortical process might exist without coalescing with any such system as underlies a personal consciousness, and that a mental state might exist in connection with the process outside any consciousness whatever. We can not, however, logically stop

at this point. If a single cortical process and its concomitant mental state may be dissociated from others, there appears no a priori reason why many may not be simultaneously dissociated, nor yet why the entire system may ^{not} be dissolved & reduced to a chaotic mass of physical processes & concomitant mental states. For such a supposition, condition I would propose the term disordination, the etymological opposite of coordination. We may well believe that if a disordinated state occurred it would not be remembered. Memory depends, from the psychological point of view, upon the law of association, & from the physiological upon the fact that between the cortical processes underlying the present state of consciousness & the traces left in the cortex by those accompanying the state remembered, there is a continuous system of traces, representing actual processes that discharged successively into one another. In a disordinated state there is no such conditions continuous sys-

tem & consequently no memory. But it is also conceivable that, from a present state succeeding a state of disordination, a single devious thread of traces, so to speak, might lead us back a little way into the maze of confusion which lies behind. As I shall later show our memory of a dream depends upon such a line of continuous discharge.

In a disordinated state the dissociated elements would not of course be what they would be in a well coordinated state. In the latter the characteristics of each element are largely determined by the relation which it bears ^{to} other elements of the system with which it is interwoven. Freed from the restrictions & incitements of the others, each process would tend to work out its own proper results in a very different way from that which it would otherwise have been compelled to follow.

Furthermore, it is conceivable that coordination might be defective without being absolutely lacking. I would term this incoordination. It might occur in either of

two forms, or in both at once. The coordinated system underlying the upper consciousness might consist of relatively few elements as compared with those of other persons, there being a larger subconscious field. The upper consciousness would then habitually be narrow; the individual would be unable to grasp many considerations at once & would be easily abstracted. Or, the elements actually coordinated might be defectively coordinated. The consciousness would tend to be confused, the individual would see dimly things which would persistently refuse to get clear, & would be in general what we call "muddle-headed." And, as I have suggested, many are both muddle-headed & narrow-minded.

It is evident that the distinction between disordination & incoordination, is merely a question of degree, and it will frequently be difficult to assign any given concrete case to either the one class or the other.

So much for the logical analysis of the hypothesis we are considering and its implications. If we turn now to the

facts & try to apply these principles to them we shall find, I think, that many phenomena for which our current psychology can not give any explanation, become, if not entirely intelligible, at least more comprehensible than they were.

A familiar form of disordination is found in states of which sleep may be regarded as the type. Perfect sleep is not a disordinated state. In perfect sleep we must suppose that all mental life is absolutely quenched; not even isolated states remain. But most sleep is not perfect, and it is probable that some cortical activity persists throughout. When we would go to sleep we withdraw ourselves as much as possible from the storm of stimuli that is always assailing our sense-organs, thus cutting off all vivid sensations with ~~our~~ their complex & far-reaching associations. Little by little the activities that remain — i.e., those that lie at the foundation of our ideational life — become quiescent. Then the laggards among them, freed from their usual restraints, assume distorted forms. Isolated scenes, dislocated scraps of sentences,

vague thoughts, flit through the mind's rapidly emptying chambers, coalescing & combining with one another in fashions grotesque & unpredictable; from moment to moment they become fewer, and then - oblivion. Sometimes on awaking we remember strange experiences had in sleep - what we term dreams. What are they but dislocated systems of mental elements, sometimes springing out of elements which have persisted through the period of disruption as when we dream of things ^{with} which our thoughts have been busied through the day, sometimes springing out of sensations occasioned by stimuli falling upon our sense-organs. Yet in every case dreams are developed under associative laws analogous to those of waking life, although very different in the details of their operation. Take the case M. Maury reports. He got a friend to tickle his face with a feather while he was ~~at~~ asleep, & dreamed that he was being tortured by having a mask of pitch applied to his face & then torn forcibly away, taking with it the skin & flesh. Had he been awake, the

stimulus would have caused a sensation of tickling, by associative reasoning he would have instantly divined its cause, & would have thought of ^{the} movements suitable to stop it. In sleep the sensation developed far more than it would have done in waking life, & was therefore magnified into an intense tearing sensation, & for this magnified state by similar associative reasoning a suitable cause was found. Had he been awake, even if the sensation had succeeded in developing, the least suggestion of torture as an explanation would have been quenched by a mass of inconsistent ideas. In sleep the grotesque notion finds no obstacle to its acceptance. Who has not dreamed of himself as being in some public place & then suddenly become aware that he is naked & exposed to the gaze of the crowd? What is this but the coalescence of the sensations arising from his actual state as he lies in bed with the thought systems representing his imaginary experiences?

If one puts a man asleep and all the while keeps talking to him, touching him and otherwise keeping him aware of

one's presence, one gets in many cases a peculiar type of sleep known as a hypnotic state. We may suppose that all the elements composing one's normal consciousness are disordinated and for the most part extinguished, but the one group which he calls the consciousness of the presence of his friend Smith who is hypnotizing him still remains. That has no chance to go to sleep, as it were, and consequently in his disordinated brain all processes originated by that one still active group tend to work out their normal results with a precision & certainty unknown in waking life. He is either totally dead to all other stimuli, or can be made aware of them only with difficulty. Frequently the attempt to force such a stimulus upon him is followed by great nervous excitement, somewhat like that which usually follows a great shock or surprise. This is, I think, the true character of the suggestibility found in hypnotic states & of the so-called phenomenon of rappot.

Another common form of disordination is that which accompanies a "nerve storm",

We know that if a mass of heated and moisture-laden air begins to escape into the upper and colder regions of the atmosphere any at any point, the upgoing current, no matter how slender at the outset, may increase in volume and velocity until it develops into a vast storm center hundreds of miles extent. So also does it appear that a relatively small & localized nerve explosion is capable, under conditions which we do not at all understand, of propagating itself irregularly through the nervous system, ignoring the usual association paths, until the entire nervous mechanism is exhausted. Such a progressive, periodic disturbance is said to be epileptiform. Some, however, are due to the mechanical irritation of the cortex, as by a depression of the skull, an extravasation of blood, disease of the membranes, or the growth of a tumor on the cortex. Others are produced by some continuous and intense peripheral irritation, as that springing from an unhealed wound, an ingrown nail, etc. Others still are due to the memory of some great shock or fright, and we may suppose that the subconscious memory of that experience is capable

of becoming from time to time strong enough to disturb the coordination of the upper consciousness. Indeed, most of these cases may produce chronic incoordination without going so far as to destroy coordination altogether. Now, all these cases may be generalized under one conception. In my first article I compared the system of activities underlying consciousness to the system of forces upon which the existence of the soap bubble depends. We all know that the introduction of any new and intense factor into that system, as when one pricks the bubble with a dry pin, instantly destroys it. It would appear that much the same is true of the system of cortical activities.

The precise effect of the nerve storm upon consciousness, however, varies with the region upon which its force is chiefly spent. In the so-called masked epilepsies or periodic insanities consciousness is directly affected, and with greater or less severity, but the complex disturbances so produced can not be reduced to de-

finite classes. New elements are introduced, old elements are destroyed, or weakened or intensified, as the case ~~be~~ may be, and the character temporarily modified. Whenever the disturbance is very great, however, memory is more or less impaired, as our theory would lead us to expect. In the true epilepsies the violence of the storm is expended upon the motor region, producing movements, sometimes of a purposive character, & sometimes not. Whenever the storm is at all severe, consciousness is disordinated & no memory remains. After the storm is over, the patient sinks into a state of true unconsciousness, and often he recovers from it but slowly, passing through stages of automatism as the elements of consciousness slowly find one another, and are built up into a system. If you question him after his recovery, he says he was unconscious the whole time. But we have reason for believing that during the period of convulsion mental states — such as muscular sensations, sensations of pain, and probably horrible dreams and nightmares — really existed, while in the comatose state & there were

was nothing of the kind. The first was a state of disordination; the second, of ~~the~~ true unconsciousness.

The symptoms of incoordination are, as one would expect of infinite variety and incapable of classification. It is known in medicine as hysteria, and I can say but little of it here.

In its simpler forms there seems to be a general inability to think of much at once. Consequently, what is in consciousness is very much there, to use a colloquial phrase, and tends to work out its own results. The patient is easily abstracted, fails to notice things, is narrow & prejudiced. In practical matters he has bad judgment, for good judgment implies the ability to weigh many considerations at once. It is difficult to convince him of a new point, but, once convinced, there is no length to which he will not go in its application. At any given time he is a man of one idea, given to a fad, and very apt to be zealous in reform movements of all kinds. He can rarely discriminate the probable from the possible, and consequently can never think of a disaster without fearing it will come

to pass. This is especially true of his own health. If he reads a medical book or a patent-medicine advertisement, he discovers in himself the symptoms of most of the diseases of which he has been reading. In a person of this temperament any great shock is apt to bring on a state of disordination with concomitant derangement of the motor coordination - what we vulgarly call a "fit of hysterics".

In more serious cases the indisposition to notice things goes further and often culminates in absolute inability to perceive what a normal person would. Entire system of sensations may be wholly or partly lost. Touch is the sensation most frequently lost in this way, although sight and hearing sometimes go too. Very frequently sensation is lost on one side of the body only. The control exerted by the idea trains over the movements of the body is also partially or wholly lost and the patient is paralyzed. Hysterical losses of this kind are often cured by suggestion, or by any means in which the patient has faith. In the most extreme cases the patient passes hours, days, and months, or even years in a state of apparent lethargy, which is probably a chronic disordination.

With the retrenchment of the field of consciousness goes hand in hand a corresponding increase in the subconscious field, and the elements dissociated from the upper consciousness frequently appears to become coordinated with one another, forming subconscious systems analogous to the upper system. They are then sometimes manifested to the patient himself by being obtruded upon the upper consciousness in the form of inner voices, hallucinations of sight or hearing, etc., or to other persons by means of movements. Occasionally they go so far as to produce writing in which the upper consciousness of the patient has no part. Hence arises for outsiders the appearance of two minds existing in one body, while to the patient his body seems to be running like a machine, without his cooperation. All such phenomena may be termed automatic, & upon them the popular belief in "spirit control" and "demoniacal possession" undoubtedly largely depends. When automatic phenomena are numerous and complex, the upper consciousness of the patient is usually profoundly affected. He sinks into a dreamy state, and often loses "consciousness" — i.e., memory — altogether. "Me-

diomistic trance" may then be regarded as a form of a disordination analogous to that of the hysterical crisis.

In some of these unfortunates the upper consciousness is not only of very narrow range and liable to frequent disordination, but is of such unstable composition that, after being disordinated, it is reconstructed out of a quite different set of elements. Mr. F. W. H. Myers has proposed to call this phenomenon an "allotropic crystallization" of the elements of mind, which seems to me a highly appropriate simile. The patient can then scarcely be said to have any permanent self at all. He is, as it were, broken to pieces and rebuilt out of different memories, desires, and aptitudes at every hysterical crisis. It seems as if his body were successively possessed by totally different persons. But we have no reason for believing that the different persons all coexist. Probably the emergence of one is only made possible by the destruction of another. In some of the extreme forms of hysteria it is possible to take advantage of this principle to reconstruct the lost normal individual. Pierre Janet has taken a hysterical woman who had lost many of her memories and sensations, and to some degree her power of movement, disordinating the upper consciousness by hypnotizing her,

he has grasped, as it were, by suggestion the lost mental elements, restored them to the upper consciousness, and made her for the time being quite normal. But, unfortunately, the enlarged upper consciousness seems of very unstable composition, & the patient soon sinks into trance & awakens in her former state.

I have briefly outlined this conception of consciousness as a system of elements capable of disintegration and of various novel recombinations. And let me repeat what I have already said, that although I have preferred, for the sake of brevity, to develop it deductively from certain fundamental hypotheses, it has been attained by the opposite process from a study of facts. Confessedly it is as yet only a theory, and will doubtless be essentially modified before being accepted as the foundation of the science of psychology. In its present form I can not myself regard it as more than a good working hypothesis. But it is something to have even a good working hypothesis in a field in which the constructive conceptions of current psychology prove absolutely useless.

Normal and Heightened Suggestibility.

There is perhaps no question so perplexing to a worker in a relatively new field as that which arises with reference to his terminology. Not only must he be influenced by considerations of euphony and etymological correctness, but he must also be on his guard against using words the connotations of which would tend to lead both himself and his reader astray in their practical inferences. It is, for example, true that a quart of alcohol acts as a poison, but it does not follow that we should use an ounce of alcohol as we would an ounce of strychnine. It may be eminently proper to apply a bad name to a dog under certain conditions, but it does not follow that the dog should be forthwith hanged.

"Suggestion" and "suggestibility" are words which usage compels us to employ, and, as their connotations are apt to mislead us, I shall find it necessary to preface my account with a brief analysis of their various meanings.

In dealing with any mental state, we have to consider (1) its character, (2) its conditions and causes, (3) its effects. The word "suggestion" properly denotes either an agency which produces

a mental state, or the state so produced, and in the latter use it connotes the notion of the agency. Its most common meaning, however, is still narrower, and is limited to mental states springing directly or indirectly from physical stimuli, especially from words.

The effects of mental states, to which I called attention in my second article, were long ignored in psychology. The first to obtain clear recognition was the property of producing ideas, and this has become famous as "the law of association". The motor effects of mental states have been more recently noted, and the study of such effects is now rapidly becoming the fashion in current psychology, much as the study of association came into vogue in England a century ago or thereabouts. Now, the study of association has been prosecuted for the most part by the psychological ^{ist's} ~~state~~ watching the flow of his own ideas, but the effects of mental states upon movements — what Prof. Baldwin calls dynamogeny — has hitherto been studied chiefly by noting the motor effects of ideas & sensations suggested from without by words or physical stimuli of other kinds. Hence the word "suggestion" has

come to include among its connotations not only the notion of the cause but also that of the effect — especially the motor effect — of the suggested state, and in the derivative "suggestibility" the original meaning is almost lost; it does not mean "a condition in which mental states may be more readily initiated by suitable causes," but, "a condition in which mental states however initiated, tend to work out their proper results more readily than usual." From this usage, which is now a days the most common, is derived a still broader one, which I shall not scruple to employ. By an individual ^{is} suggestibility we denote the fact that in him every mental state tend to work out definite results of its own. In this sense we are all suggestible. The word conveys to dynamogeny, save that the latter term has reference to the motor tendencies only of the states, while suggestibility includes its tendency to developments, its associative & metabolic tendencies as well. The condition commonly known as suggestibility, in which the results of the individual state are more easily traced than usual, I would strictly term "heightened suggestibility," but for the sake of brevity, it may be allowable to call it also simply suggestibility; the context will usually show what degree of suggestibility we are talking of.

Suggestion may be subdivided with reference to their origin into suggestions from without, due to impressions received through the senses, and suggestions from within, arising from some ^{pre-}existing thought. These are usually termed auto-suggestions and hetero-suggestions. Both words are barbarous & hybrids, but the former at least is too deeply fixed in usage to be displaced. The distinction is sometimes of importance, since many patients who are very suggestible from within are not at all so from without, and vice versa. Yet it is difficult to draw any sharp line of demarcation between the two classes, and in the account which I shall give of suggestion I shall confine myself to the latter. I may have occasion to recur to suggestions from within in a later paper. I shall also limit myself to the discussion of the tendency to development & the associative and motor tendencies of mental states, omitting for the present their effects upon the metabolic processes. Thus the chief phenomena which I shall pass in review are, (1) the development of a suggested idea ~~into~~ into a "sensory" hallucination, (2) the expansion of a suggested idea into a complete dream by

evocation of associated ideas, (3) the production of bodily movements by means of suggested sensations or ideas. As I have already said, it is not easy to observe that one is one's self suggestible. One's present consciousness contains at all times such a mass of subnascent, nascent, and vivid states that it is impossible to trace the effects of any one group, yet occasionally one can catch a state on the wing, as it were, and note its effects. Some years ago, I came home about ten o'clock one sunny morning, deeply absorbed in thought; of the latter part of my walk I had no clear memories, but I came to myself to find myself standing in the sunlight, holding a lighted match aloft in my right hand, apparently looking for a gasjet. I always carried in a certain pocket my keys and a matchbox; the sight of the door had prompted me to thrust ~~to~~ my hand into my pocket, but I had no clear thought of the latchkey of which I was in search. Had I had, the mere fact that my hand happened to come in contact with the matchbox would have produced no result. As it was, the feeling of the matchbox found no obstacle to its working out its own results — my hand closed on the box, withdrew & opened it, took out a match and struck it, and

struck it, and this organized motor series was wrecked merely by the physical impossibility of lighting a gasburner where there was none to light, & not by the interference of inconsistent mental elements. Such phenomena are familiar to us all, but we rarely take pains to analyze them in detail, otherwise the precisely similar phenomena of hypnotic suggestion would not excite so much astonishment.

A large proportion of our acts are thus suggested by sense-impressions. Another large proportion is under the direct control of thought almost as simple, but the guiding thought is often so faint & phantomlike that it escapes attention. I was sitting once in a railway train on my way to Philadelphia; in the corner in front of me was an umbrella. I lifted my right hand, extended it, then let it fall. When I say that "I" did this I am not speaking with precision. "I" was at the time occupied with an entirely different train of thought, and the lifting and dropping of my hand struck "me" as something so strange that I fell to looking about in the dark nooks and crannies of my mind to find the culprit thought. Fortunately, I was in time. I had been

looking out of the window, and the lowering clouds had suggested to rain, walking the streets, getting wet; my hand reached out for the umbrella with some dim notion of taking off its cover and making ready for the rain. Then arose a vague, unformed thought which, if it had become articulate, would have taken some such form as, "Two hours yet before I get there": the hand was arrested half extended, and fell. The whole of this little comedy was enacted in an out-of-the-way corner of my mind, while "I", the thinking self, was absorbed in a train of abstract thought, and probably both the actors would have escaped notice and been straightway forgotten had it not been for the inconsistency of their motor results.

Every object of perception and thought is a center of innumerable diverging suggestions. Not all of these are of equal strength, and the manner in which any given object will affect a given individual will vary with its his education, his habits, and his present mood. Many physical objects have, besides the lines of motor suggestion which they share with others, certain special lines peculiar to themselves. Of these perhaps the most impor-

tant is the use of the object. Thus, of all the things which I could possibly do with a dagger, stabbing is to me by far the most attractive, & I find it very attractive indeed. I can not handle a dagger without feeling a marked propensity to strike the point into anything that comes handy. Many other objects are similarly suggestive. A gentleman while visiting a friend of mine, was asked to examine a fine rifle which his friend had recently acquired. He loaded it, poised it, lifted it to his shoulder took aim, remarking in a joking tone, "Suppose I fire?" "Do," said his friend — and he did. Happily, the ball contented itself with plowing its way through a cherry bookcase and four or five books, & no lives were lost. When asked why he did such a reckless thing, he could only say that he did not know — he did not intend to do it. To my mind there is nothing surprising about it. The rifle, to a man fond of shooting but without much experience, is instinct with dangerous suggestions. Ordinarily the immensely preponderating mass of inhibiting ideas keeps

even the most reckless well within the danger line, but when the rifle was loaded, cocked, & aimed, and the finger on the trigger, a great mass of ideal and sensational suggestions were excited to the highest pitch and all ~~so~~ converged upon the delicate muscles of the forefinger. Still, the inhibitory suggestions of time & place would, under most circumstances, have been sufficient to counteract all these; probably, the command, "Do", re-enforced the latter at the very moment, that it distracted attention from the former, and the slight advantage thus given to the weaker of the two systems of forces was sufficient to contract the finger and bring about the catastrophe.

The spontaneous phenomena which the Germans call Massenpsychosen — a word denoting a state of mind shared by a mass of people at once — are nothing more than Nature's experiments in suggestibility conducted on a large scale for our benefit. The panic is a familiar illustration. The terrifying suggestion which each man could easily brave alone becomes so intensified in being reflected upon him from a thousand frightened faces that he gives way and becomes for the time

being an unreasoning, struggling animal. During every great strike such phenomena are common. A crowd gathers, the spirit of disorder is abroad, and the soberest of citizens feels his fingers fairly itching for mischief. A stone is thrown, another, and then another, and in a few moments every man is vying with his neighbor to see how much damage he can do. In these cases the frequently repeated suggestions given by the words, and still more by the deeds, of others overcome the results of years of training in orderly habits, and when the excitement has subsided many a participant in the late riot may fall to wondering "what in the world possessed him." The colloquial phrase, like many another, enshrines a truth. He was indeed possessed — not by any evil spirit, to be sure, but by myriads of delicate physical impulses, which, streaming in through eye and ear, prompted him with almost irresistible force to violence.

The so-called "contagion of crime" is somewhat analogous. There are at all times in the community "weak brethren" who, while

not criminals, are drawn like moths to the flame by the fascination of a great crime. The White-chapel murders and the assassination of Mr. Harrison, the late Mayor of Chicago, are illustrations fresh in our minds. In each case a crop of dangerous "cranks" was brought to light, who, without the suggestions, might never have fallen into the hands of the police.

Turning now from these illustrations of suggestibility in general to the conditions under which it is heightened, the first phenomena to arrest attention are those of childhood. The consciousness of a new-born baby must be very unlike anything that we can picture. It contains perhaps sensations of pain and touch something like those with which we are familiar, but differing from them in lacking all localization and reference to an outer world. It is only by slow degrees that sight and hearing are developed, and can we never hope to know the various stages through which the raw material delivered to consciousness by the developing organs of sense must pass before it becomes anything like what we call sense-experience. Yet, however dim, confused, and rudimentary the baby's consciousness may be, the ingoing

nerve current produce more or less definite movements, and, as consciousness becomes more highly evolved, not merely do the impressions of sense produce movements, but the ideas also, or copies of those impressions, acquire control over the body. The later history of volition merely records the steps by which the inner control, through its gradually increasing complexity, comes to supersede the outer. In the earlier years of life the child may almost be said to be a slave to his environment. His conduct is controlled for the most part either by what he actually sees and hears or by his most recent memories and immediate anticipations. The remote past and the distant future affect him but little: he is a creature of the present. Consequently, one can see the motor effects of sensations and ideas more directly in children than in the adult. At first definite responses are limited to a few reflexes. Sucking, blinking, crying, swallowing, clutching, and one or two more, constitute the capital with which the children begins life. Besides these we find a mass of random movements out of which all later forms are evolved. At a some-

what later period the child enters upon the imitative stage, to which so much attention has been attracted of late; no sooner does he see an act performed than he attempt to do it himself. Of the mental and physiological conditions which lie at the basis of imitation we know very little. It probably marks a period in which the visible appearances of the grosser bodily movements are entering into associative union with those thoughts of how the movements feel when performed which are immediate psychological antecedents of the movements which they represent. "Naughtiness", in children passing through this stage, is frequently nothing more than sheer inability to overcome the imperative suggestions of the environment by the relatively feeble thoughts which its parent's commands suggest. For children, example is indeed better than precept.

As the child grows older and his mind becomes more richly stored with memories, as his hereditary instincts come to view, and his increasing power of imagination enables him to picture the future more distinctly, he is little by little emancipated from his slavery to the present. Yet in many children marked suggestibility persists to a quite late period. In the normal adult the store of memories

has become so rich and the power of anticipating the future so great that the primitive suggestibility seems almost to have disappeared. The man's conduct is no longer mainly controlled by this or by that suggestion of his environment, but springs naturally from the steady stream of thoughts and purposes that fill his mind. No suggestion can enter his mind without running the risk of encountering a mass of ideas which either are antagonistic to it or overcome it by sheer weight of numbers. Furthermore, most persons who closely watch their mental life can detect ⁱⁿ it that at present mysterious activity of the "self" to which I alluded in my first article. We must conceive it as in some way originated by and dependent upon our past experience, and in it we see, as I have elsewhere expressed it, the present conscious representative of the net resultant of our past experience, brought to bear upon the nascent mental state. Its function in our life may be compared to that of the rudder on the ship: it serves to hold us steadily to the course already laid out, and makes our present & our future symmetrical with our past.

It is evident, then, that, if we would restore primitive suggestibility in an adult, we must either break up the consciousness of self, or weaken its power of control. If we can do that, we have removed from the path of the suggested state the formidable possible impediment to its free progress and development. But to give it full liberty we must abolish or enfeeble all other sensations and ideas as well. These would be, from the psychological point of view, the conditions of heightened suggestibility.

In many cases it is, unfortunately, impossible to get any evidence as to the mental condition of the patient, but such evidence as we have goes to support this hypothesis. The hypnotized patient, if asked what he is thinking about usually says, "Nothing." Sometimes you find that he is dreaming and will tell his dream, but, like other dreams, they are readily guided or dissipated by the least sensory suggestion. In the few cases in which the patient remembers his experiences upon awaking, he says he felt drowsy, dull or weak. One of my patients told me that it seemed to him as if the motor suggestions I gave him were executed by his body, mechanically, without his own concurrence. He did not feel disposed to resist,

but, when he did, he either found himself helpless, or could overcome the suggestion by the most strenuous resistance only.

But the suggestibility thus produced differs widely from that observed in children. The consciousness of the child is so rudimentary in character that complex thoughts can not be awakened in it by any means; its suggestibility, therefore, is limited to the performance of relatively simple acts. But in the complex brain of the adult, with its myriad ramifications, the range of suggestibility, when once it is established, is far greater and its phenomena more striking. In language we possess an instrument which, although intangible, is as much physical as an axe, a saw, or a knife, and with it, as with an adjustable stamp, we can impress upon the still sensitive brain what modifications we will. Once started, they work out their proper results with almost fatal precision.

Turning now from the theory underlying these phenomena to the actual facts, we may say that heightened suggestibility is found ~~in~~ under three chief groups of circumstances. First, it is found in sleep occasionally, and more frequently,

in the states akin to sleep termed hypnotic. Second, it is sometimes found as one of the symptoms produced by certain drugs. As we suppose these symptoms to be due to poisons circulating in the blood, the type is termed toxæmic suggestibility, from two Greek words, meaning blood poison. In the last place, heightened suggestibility is found as a spontaneous phenomenon for which no reason can be given. This is called idiopathic suggestibility.

Of these three forms, hypnotic suggestibility is best known and for many reasons the most interesting. Dreams, as I have already pointed out (February number), are largely due to suggestions given to sleep. A higher degree of suggestibility is sometimes found in normal sleep. A friend of mine told me that, when a boy, he had a schoolmate who became highly suggestible whenever he was slightly disturbed, in sleep. Without awaking, he would become partly conscious and would do everything, no matter how preposterous, which the mischievous ingenuity of the boys could suggest. In hypnotic states suggestibility is so constantly found that some propose to regard it as an essential characteristic. Let me give a few illustrations of its varying forms. T—B—is

a laborer, twenty three years of age, neurotic, intemperate, easily hypnotized. His muscles are entirely at my command. I can stiffen a finger or an arm by a word so that he can not bend it. I can even contract one set of muscles while leaving the opposite set under his control. I bring his hands together, place the tips of his fingers in contact, and tell him he can not separate them. The systems of muscles necessary to hold them together are strongly innervated, while those that pull them apart are left under his control; he struggles in vain to part them, and his struggles are such as could not ^{be} easily imitated voluntarily. I can control his sensations in the same way. I can abolish his sensations of pain, of touch, of sight, & of hearing. I tell him he will feel in his right hand what I do to his left hand; I then put a lighted match to his left hand and it remains at rest, while the right jerks violently about in its efforts to escape from the fire. I tell him he is blind, & he is — deaf, and he can hear nothing. I tell him he can not see or hear such a man, and he acts as if he were unconscious of his presence. I can create hallucinations of all the senses also.

The limitations of suggestibility are even more

interesting. R — is a college graduate & is now a student of divinity. When hypnotized, he passes into a light sleep, remains vaguely conscious of his surroundings, and remembers all that happens. The smaller muscles, as those of the eyelids, lips, and fingers, are entirely under my control, but the larger groups only in part. I can affect all his senses to some degree except that of hearing. The sense of sight is also refractory, and, although I can obliterate it, it is only for a few moments. I lean over him, look him in the eyes, and say, "I am getting dim — you can not see me clearly — now I am fading out altogether — I am gone — you are blind." "No," he says, "I see you still." He tells me afterwards that I did grow faint and for a moment vanished, but almost instantly reappeared in brighter colors than before. I put a chair before him & say; "There is Mr. S —. You see him clearly — he is looking at you." "No," is the reply, "I do not see him; he is not there." I repeat it over and over again, but ~~with~~ without effect. I try again. We are on the platform. "There," I say, "in front of you, is Prof. F —." R — denies it, denies it several times, and then suddenly admits it. When I press him to tell me exactly what he sees, I find

* "Thinking of that name." "What is your hand doing?"

that he fancied himself sitting in the body of the room where he usually sits during lectures, and sees Prof. F— standing on the platform in an attitude he frequently adopts. In other words, R— is dreaming with his eyes open, & his dream is determined by my command, he himself supplying for the dream of Prof. F— a suitable associative setting. At another time I told R— to reflect upon the name "Henry Jones," & put his hand a pencil. After some time the hand fell to twitching & then swiftly wrote "Henry." "What are you doing?" I ask. "Nothing." "What did it do a moment ago?" "It moved." "Did you move it?" "No." "What did it move for?" "I don't know." No questioning on my part could elicit any consciousness of the writing. In other words, the touch suggestion given by contact with the pencil had re-enforced the motor tendencies of the thought, & the thought had literally written itself.

I have not myself seen any cases of toxæmic suggestibility, but many are reported in the literature of the subject. For example, Dr. Janet describes a patient suffering from alcoholic delirium who was suggestible in the highest degree. Dr. Carpenter quotes from Dr. Moreau a description of the effects of Lash-

est, than which nothing could better describe the augmentation in the developmental & associative tendencies of the suggested states. "We become the sport of impressions of the most opposite kind; the continuity of our ideas may be broken by the slightest cause, we are turned, to use a common expression, by every wind. By a word or gesture our thoughts may be successively directed to a multitude of different objects, with a rapidity & a lucidity which are truly marvelous. Fear becomes terror; courage is developed into rashness which nothing checks; the most unfounded doubt or suspicion becomes a certainty. The mind has a tendency to exaggerate everything". So, also, Dr. De Quincey, of the effects of opium: "What soever things I did but think of in the darkness, immediately shapes itself themselves into phantoms of the eye; and, by a process apparently no less inevitable, when once thus traced in faint & visionary colors, like writings in sympathetic ink, they were drawn out, by the fierce chemistry of my dream, into insufferable splendor that fretted my heart." In the delirium of fever and in

the coma of ether and nitrous oxide suggestibility is sometimes noted, but it is not a common phenomenon, & more information is much needed.

Idiopathic suggestibility has been reported by many observers, but I shall limit myself to the description of one case which has fallen within my own ken. Florrie is a little girl aged twelve. Her father is a blacksmith, in good health but not robust. Her mother is a work-worn woman, slow of speech & slower of wit, & is easily hypnotized. Florrie is a quite child, has suffered from frequent & violent headaches, and is very forgetful. In all other respects she is quite normal. She was hypnotized some time ago by a travelling showman. Of her condition before that time there is no record, but since then she has been markedly suggestible. A command forcibly uttered, once, twice or three, is sufficient to displace her ^{upper} consciousness and throw her into a dreamlike state in which she executes nearly all suggestions. A typical experience with her

will serve as an illustration. I had been lecturing in an amphitheater crowded with students, and she had been waiting outside. The patients I had already shown aroused a great deal of laughter, & when I went for her I found her panic-stricken, sobbing bitterly; she would not go, no, she would not go before all those men — she was afraid. I said to her in a low tone: "Florrie, of whom are you afraid? Are you afraid of me?" "No." "Of your mother?" "No." "Well, there is no one else here." After much persuasion I got her look out. "There," said I, triumphantly, pointing to a crowd of physicians & nurses, "don't you see that bare wall? There is no one here but us three." Her tears were dried at once. I led her into the amphitheater and said, pointing to the rows upon rows of men: "Don't you see, Florrie, there is nothing here but empty benches & ourselves?" She saw nothing save what I told her to see, was perfectly cheerful and happy, entirely at her ease, and absolutely subject to my commands. She seemed to be quite normal, and she acted out the dreams

I suggested to her with a grace that any actress might envy. I told her there was a plate of strawberries on the table. "Oh," said she, "What beautiful berries! May I have one?" She began eating them, and took the stem off each imaginary berry with a precision that almost made an observer believe that his own eyes were at fault, and that the berries were really there. "Are they sweet?" said I. "Oh, yes!" "Rather odd, in February, isn't it?" said I. "I would have thought they would be sour." As she ate the next berry she made a wry face. "Dear me!" she said, "it is as sour as sour can be." At another time I told her I had two bouquets for her, and wished her to choose the one she liked best. I gave her with my right hand a real bouquet — with my left, nothing. She took both, smelled each in turn, exclaimed over their beauty, & finally returned to me the real bouquet, saying the other was much the prettier.

I might cover pages with such illustrations but one is as instructive as a thousand could be. This child was not "hypnotized", yet she

was in a "secondary state" or dream, I was never able to determine precisely how much of the real, visible, tangible world entered into her dreams apart from what I deliberately suggested to her to see, but my impression was she saw and felt as the rest of us do unless my suggestions were inconsistent with the testimony of her senses — in that case the suggestion triumphed. The suggested dreams were remarkably permanent. If she were told there was a parrot, or cat in the room, she would continue to see it until it was abolished in the same way. Once or twice she refused suggestions that I gave her. For example, when I told her she was a princess, she acted the part very well; but when I told her she was a horse and was pulling a cart, she said she was not, and no amount of insistence on my part could make her see that cart. Once I tried to "hypnotize" her — i.e. I told her I would put her to sleep — and she went to sleep so soundly that I had great ado to get her awake again. So also after suggesting dreams to her, it was not

possible to restore ~~to~~ her at once to her normal condition, although if left to herself she slowly returned to it. I always took pains to abolish all the hallucinations I had given her, afterward and she would then seem quite normal, but upon questioning her afterward I always found that her memory did not begin until perhaps a half hour after she had left me, and the attempt to elicit recollections of the forgotten period by leading questions always resulted in throwing her into a similar secondary state. Yet there was no connection between her secondary states; in one she never recollected what had happened in another, and no suggestion could make her remember. Nor was I ever able to produce posthypnotic suggestions, although I frequently tried to do so. I wished very much to relieve her headaches in this way, but could produce no effect upon them whatever. In other words, she failed to present many of the most characteristic phenomena of hypnosis. I think, perhaps, I should say that my attention was called to this little girl's case by her physician, and

although in all the experiments that we made upon her we kept a sharp lookout for any indication of evil results, we were, ^{never} able to detect any. Her waking dreams did not seem to be more injurious than other dreams.

One may justly ask how one can guard against simulation in such cases. I do not think the possibility can be altogether excluded, and in this case I was at first very suspicious. But after a good deal of ^{careful} observation, one forms a pretty clear opinion, based upon many slight indications. My chief reason for thinking that the phenomena in her case were genuine was that taken as a whole they differed widely from the type of hypnosis she had seen in the public shows she had attended, which would naturally have given the model for her to imitate, and agreed very closely with rare cases reported by other observers.

Hypnotic States, Trance and Ecstasy.

I shall deal in this paper with abnormal states of several types, all of which, in my opinion, may be grouped under the one concept of disordination. The normal consciousness is in all apparently destroyed or displaced, & very often memory of the abnormal state is lacking. Hence we are often compelled to rely upon ambiguous external indications for our knowledge of the patient's condition during the abnormal state, and any attempt to explain it from the psychological point of view is attended with difficulty and open to attack.

In the first place, I must clear away a prolific source of confusion. All the states which I now have occasion to examine are akin to sleep, and many have in addition a superficial resemblance to sleep: the eyes are closed, the countenance is placid, the breathing regular. In others it is less marked: the eyes may be open, fixed, and staring, the body may be rigid and contorted, the face may express intense emotion, movements may occur, and so on. This distinction is purely

accidental, and is of no importance from the theoretical point of view. Yet it has become set in our nomenclature, and we can not well get rid of it. For the first group I shall therefore use the generic word "hypnotic", which means simply "dream^{sleep}like". The chief characteristics of hypnotic states are: (1) the closed eyes, expressionless face, and relaxed muscles — in general, absence of any spontaneous signs of mental life; (2) the presence of heightened suggestibility. The chief characteristics of the trance states are: (1) spontaneous evidences of mental life, afforded in talking, writing, or emotional expression, movements of other kinds, or by memory after the state is over; (2) the absence of suggestibility. But it is needless to say that many states are found which can not be put into either of these classes.

There are many ways of inducing hypnotic states, but all agree in involving an arrest of the flight of thought, concentration of attention upon one element, restriction of the conscious field. In some very susceptible patients any sudden arrest of attention such as that produced by an intense and unexpected stimulus, may induce a

hypnotic state or some other form of disordination. A sudden flash of light, or the clang of a loud gong, has been known to produce ~~these~~^{his} effects. But generally the concentration of attention must last some time, and it is usually necessary that the patient should voluntarily co-operate with the hypnotiser. One of the easiest methods of getting him to do this is to tell him to go to sleep, for we all, in trying to go to sleep, do precisely what we should do in order to be hypnotized. Often the attention is riveted upon a bright spot upon a sound, a sensation of touch, or even upon a thought. As it is very difficult to hold attention upon an absolutely unchanging thing, it is customary to help the patient by providing some monotonous variations. This is the chief function of the "mesmeric passes" of which we hear so much, of the revolving mirrors, oscillating pendulum, etc.

Whenever the normal flow of consciousness is thus interrupted, there is a tendency for the patient to fall asleep. It would seem as if the other elements — those which are prevented from getting into the upper consciousness,

lose their co-ordination and coherence; they no longer faithfully mirror the past or paint the future, they become broken, dislocated, "dreamy," and finally die away altogether. Then the elements which has occupied attention also die away, and the patient has reached the deepest stage of hypnotic lethargy. I asked one of my patients, while he was apparently sunk into a deep lethargy, what he was thinking of. He told me in a halting, broken way that he was in his own home, it was about eight o'clock at night, he was playing cards with So-and-so; I was at a neighboring table, also playing cards, etc. In what respect does this differ from the ordinary dream? But more often the mind seems like a slate erased, and the only thoughts existing are those which the hypnotiser suggests.

It is often possible to trace the stages through which consciousness passes in its progress toward complete disordination and coma, and many have tried to discover some fixed relation between these stages. There is, I think, none, but there are some recurring sequences. Usually the control of movement by thought is first impaired. The patient feels himself becoming

weak, his limbs grow heavy, the more delicately co-ordinated muscle groups of the eyelids, lips, and fingers become paralyzed, then the larger groups are affected. Sometimes one side of the body yields before the other; and, sometimes, instead of paralysis, rigidity supervenes. I remember one patient who, when commanded to shut his eyes, instantly "went off" like a spring released, becoming as rigid as a log, and we had great ado to "limber him up" again.

If the patient left to himself he will either awake of himself or fall into a normal sleep, from which all signs of suggestibility, catalepsy etc, have disappeared. This is most easily interpreted upon the supposition that hypnotic states are in fact only imperfect forms of sleep, & therefore unstable, tending to resolve themselves in either the one direction or the other. The fact that hypnotic states may be produced not only by putting a waking man partly asleep, but also by partly waking a sleeping man, would point to the same conclusion.

The suggestibility which is so characteristic of hypnotic states probably depend upon the persistence of that portion of the patient's consciousness which represents the hypnotizer, while all else has either disappeared, or become much weakened by dissociation from its accustomed re-enforcing elements. The hypnotizer keeps talking to the patient, touching and stroking him, and he has in consequence no opportunity to fall asleep to him, R— told me that even when his consciousness of the position of his own body was almost lost, and the sounds of the outer world seemed dull & muffled, the tones of my voice and my lightest touch remained as distinct as ever. The consciousness of the hypnotizer is a center from which radiate new forces, and sometimes, when memory is preserved, the patient may be able to describe the first collision between the enfeebled upper consciousness and the foreign element. Take Dr. Coche's account of his own experiences:

"He then said to me, 'you can not open your eyes.' The motor apparatus of my lids would not seemingly respond to my will, yet I was conscious that while one part of my mind

wanted to open my eyes, another part did not want to, so I was in a paradoxical state: I believed that I could open my eyes and yet could not.

The feeling of not wishing to open them was not based upon any desire to please the operator.... He told me that I was asleep, and placed my hand over my head, and stated that it was rigid, and that I could not put it down. Again a part of my consciousness wanted to put it down and another part did not. He stroked my arm & told me that it was growing numb, that it was growing insensible. He told me that I had no feeling in it. He said, 'You have no feeling in it, have you?' I said 'No,' and I knew that I said 'No,' yet I knew that I had feeling in it, and yet believed that I had no feeling in it... I was not conscious of my body at all, but was painfully conscious of the two contradictory elements within me. I knew that my body existed, but could not prove it to myself. I knew that the statements made by the operator were, in a measure, untrue. I obeyed them voluntarily & involuntarily.

As a brief outline of the salient features of typical hypnotic states the above must suffice,

but one must remember that many anomalous states are found to perplex the student. Sometimes one meets with profound lethargy with no suggestibility; at others, the patient becomes extremely suggestible without a sign of sleep, and is afterward found to have no memory of the suggestible stage. Occasionally the attempt to produce a hypnotic state throws the patient into a trance-like nightmare, from which it is very difficult to rescue ^{him} them. Some times it is difficult to get the patient entirely awake, or even if awake and conscious, some disorganized elements may persistently refuse to effect union with the upper consciousness. A friend of mine, on awaking a patient, found her unable to speak or swallow, and some anxious hours slipped by before he succeeded in restoring her power over the paralyzed muscles. Altogether hypnosis is decidedly a dangerous thing to meddle with.

Many typical trance states are brought about, it would seem, by what may be described as the hypertrophy of some perception or sensation or system of ideas. This abnormal growth may be in either or both of two directions. In the first

place, It may be in either an actual increase in intensity and complexity. This is not uncommon in all forms of disordination; thus, Dr. Cocker says that when he tried to hypnotize himself, he first noticed a ringing in the ears, then this "noise in my ears grew louder & louder. The roar became deafening. It crackled like a mighty fire... I heard above the roar reports which sounded like artillery or ~~maste~~ musketry. Then, above the din or the noise, a musical chord. I seemed to be absorbed in this chord. I knew nothing else. The world existed for me only in the tone of this mighty chord." But the development of the state may be not merely a development in intensity and complexity, but also in its importance considered as an element of consciousness. I have shown in my previous papers that consciousness tends to assume a certain form in which some one group is more clear and distinct than the others. This is what we call the "center of attention" or "focus" of consciousness. I have also shown that when any one group becomes focal all others become less clear & distinct, than the others. This is what we call and may

even be driven out of consciousness altogether. Now, in trance states this seems often to happen. In the hypnotic states the element upon which attention is fixed itself disappears; in trances, it & its associated states take possession of the focus, drive out all other states, & serve as the starting point for dreams, hallucinations, & visions of the most complex kind. For the same reason, suggestibility is seldom found in trance. There is no awareness of the hypnotizer to serve as a center of activity and the hypertrophied state usually proves strong enough to resist interference from without.

The close relation between hypnosis & trance is well shown by the case of M —, He is about twenty five years of age; by profession a book-keeper, he has proved himself capable & efficient, and, although he has always been of somewhat delicate health, he is quick in his demeanor, & not in the least hysterical in the vulgar sense of the word. Once, when a child, he was playing with a toy locomotive; the alcohol used to generate steam was spilled upon the floor and caught fire; in great terror he ran away, seized the doorknob, and then became fixed & motionless,

unable to cry for help or to run. At another time, when about twelve years old, his grandfather died. He stole unobserved into the room where the body lay & lifted the shroud. No sooner had his eyes fallen upon the dead face than he lost all power of thought & of movement & remained fixed, the shroud uplifted in his hand & his eyes staring at the corpse, until some one came in & drew him away. As soon as I heard this account it struck me that he would probably prove to be a good hypnotic patient. Although himself very skeptical, he allowed me to try, and in three minutes I had him in a deep lethargy in which he was almost absolutely suggestible. It did not occur to me at the time to look for signs of incoördination, but two years later I found that his visual field was much restricted — that is, he was blind to its outlying portions — and also that his sensation of touch was more or less impaired. I have no doubt that the facility with which his upper consciousness was both accidentally and intentionally displaced sprang from the same conditions of which these

symptoms of sensory incoördination gave evidence.

Hypertrophy of these two kinds may be the lot of any mental state. When it is a percept that usurps the conscious field, we speak of the patient as being "fascinated"; if the percept is attended by great emotional disturbance, we use such phrases as "spellbound with horror," "drunk with joy," etc. When the hypertrophied states are chiefly ideas without marked emotional accompaniments, we speak of the patient as being "in trance," "seeing a vision," or simply as "dreaming." If the visions are accompanied by intensely pleasurable emotions the state is termed "ecstasy." In the higher grade of ecstasy the concrete visions disappear and clear consciousness is lost in a flood of emotions of an intensely pleasurable character. The types of trance in which the emotion is acutely disagreeable — grief, terror, remorse — are usually classed as diseases, partly because they unfit the patient to a greater degree for the duties of life, and partly because they often spring from organic disease, especially of nutrition. The disordered physiological

processes give rise to floods of vague but intensely disagreeable sensations, and these in turn generate the horrible & terrifying visions. Many trance states are revealed in the patient's movements, but for the present I shall speak only of those which are remembered & described afterward.

The attainment of ecstasy has been the aim of many religious sects in ancient & modern times, by whom it is conceived to be a direct union with the Divine; these form an important branch of the group of religious mystics, all of whom believe that the human soul is capable of direct union with God during this present life. But our information as to the various possible types of ecstasy is very defective. The essential element is the flood of pleasure, but the sensory elements may be of any and all kinds.

One form is characterized by the appearance of a beautiful light, far more pure and brilliant than any commonly experienced. It is probable that this light is due to the hypertrophy of the vague visual sensations which we always experience in darkness — what the Germans

call the eye's Eigenlicht, Plotinus, the Neo-Platonic philosopher (circa 204—269 A. D.), seems to have experienced this type of ecstasy, & has left us many descriptions of it, and of his methods of attaining it, albeit couched in rashes of obscure language. "Often," he says (Ennead IV, book VIII, chap. 1), "I awake from the body to myself, I come to be outside all else but within myself, I see a great & wonderful beauty. Then am I most assured of the supreme happiness of my lot, for I have entered into the best life & am become one with God. . . . After thus abiding in the Divine, I descend from intuition to thought, & while descending I can not tell how I descend, or how my soul has got within my body." He thus describes his method (Ennead VI, book IX, chap. 7): "In your contemplation cast not your thought without, for God is not in any one place, depriving other things of himself, but is present there to him that can touch him, and to him that can not he is not present. As in other cases one can not think anything while thinking and attending to something else, but must add nothing to that which

is thought, that it alone may be that which is thought; so also here one must know that he can not, while he has the image of anything else in mind, apprehend God, that other image being active the while, nor can the soul, while possessed and controlled by other things, receive the image of their opposite... Every soul must let go all without & turn within, must not be attracted toward any outer thing, but must lose consciousness of all such, first of her condition & then of her thoughts, and after losing consciousness of herself also must be given over to the vision of God." In another passage (Ennead V, book v, chap. 7) he draws a distinction between light proper & that which is illumined by it; usually we see the latter only, but we can become conscious of the former also. For example, with closed eyes and in total darkness we see a pure light which is generated by the eye itself. "So also the mind, wrapping itself about from other things, and withdrawing within, seeing nothing, will behold light, not here & there, but pure light alone, of itself suddenly shining, so that" (chap. 8) "it can not tell what

whence it shone, whether from without or from within, nor can one say, after it has departed, that it was within or not within. One should not ask whence, for there is no whence; it does not come, nor does it go anywhither, but shines, and then ceases to shine. One should not therefore seek it, but quietly wait until it shines, first preparing one's self to behold it, as the eye awaits the rising of the sun. The sun appearing above the horizon — out of the ocean, as the poets say, presents itself to our eyesight. But this other light, of which the sun is an imitation, whence is it to rise, and above what is it to appear? It rises above the contemplating mind, for the mind fixes itself upon the contemplation." Again (Ennead VI, book ix, chap. 9) "There the soul beholds God & herself in the only way permitted, herself radiant, full of intelligible light, nay rather herself all pure light, weightless, buoyant (*κοῦφον*), becoming God — nay, already become God."

The sect known in the eleventh century as Hesychasts, and later the Omphalopsychics of Mount Athos, claimed to have, and doubtless

did have, the same experience. Prof. Preyer, in a note to his Hypnotismus, has given interesting account of them. Their method was to drop the chin upon the breast, fix the eyes upon the navel, and wait for the light to burst upon them. A great ecclesiastical controversy arose over these practices. The language which George Fox and the early Quakers use of the "inner light" seems to point to the same thing. One of my graduate students, while under ether, had a similar experience, which makes an excellent commentary upon Plotinus' statement that the soul is "pure light." "I took form, I was a body of light in an abyss of ethereal gray; in form I was, as memory reproduces size, eighteen inches by eight, a rounded disk: I was not looking at myself, but I knew and saw myself." Such experiences would seem, from my own inquiries, to be far from uncommon, and I would be grateful to any of my readers who can give me more cases.

Among the monks and nuns of the mediæval Church ecstatic states were com-

mon. The constant fasting and loss of sleep to which many of these saints condemned themselves, are known upon independent evidence to be fruitful sources of hallucinations, and prolonged meditation upon a given topic determined the general form of a vision. The enforced celibacy of the monastic life & the practice of self-torture were further conditions of the greatest importance. Enforced celibacy frequently gives rise to reflex neuroses, and self-torture is in many neurotic individuals a direct stimulus to the very passions which the celibate most desires to repress. It is not surprising, therefore, that the religious ecstasies of the ascetic frequently assume a highly erotic form, although expressed in the most chaste language, and alternate with apparitions of the devil in the forms of incubi and succubæ. Prof. Mantegazza has given interesting accounts of some of these religious ecstasies & visionaries, and I shall abbreviate a few of them.

Margareta Maria Alacoque was possessed by a desire to emulate the sufferings of Jesus, and inflicted upon herself such horrible tortures that her Mother Superior felt called

upon to interfere, although some were inflicted by the express command of God. Is it surprising that she passed much of her time in a state of delirious love for her "heavenly bridegroom", constantly seeing visions and receiving revelations?

Anna Katharina Immerich has described for us most vividly a condition of ecstatic trance in which the consciousness of the real world was not wholly lost. It is analogous to the above-quoted experience of Dr. Cocke, "I see this not with my eyes, but rather, as it seems to me, with my heart here in the midst of my breast. This causes perspiration to break out on that spot. At the same moment I see the persons & objects about me, but do not trouble myself about them; I do not even know who they are — and even at this moment, as I speak, I see... For some days I have been continuously in a supernatural vision. I have to use compulsion upon myself, for in the midst of my conversation with others I see entirely different pictures before me & hear my own voice & the voices of others sounding dull and muffled as from an empty

vessel.... My reply to what is said to me falls from my lips easily, and often with more vivacity than usual, although afterward I do not know what I said, yet I speak coherently and intelligibly. It is very hard for me to keep myself in this double state. With my eyes I see my surroundings dimly, enshrouded in a veil, as one does when trying to fall asleep and just beginning to dream. The inner vision desires to sweep me away with violence, & is far far more clear and brilliant than the natural, but it makes no use of my eyes."

But St. Theresa has left us, & perhaps, the best account of ecstasy that we possess. One should note the complex hallucinations of all the senses which served to bring about the true ecstasies.

"One day, after I had prayed and besought the good God that he would help me to do his will in all things, I began the song of praise, and as I invoked him there came to me an ecstasy that almost put me besides myself.... I heard these words: 'Henceforward it is my will that thou shalt speak no more with men

but with angels only." "These inner addresses of God to the soul consist of quite clear & plain words, but are not heard with the bodily ear.... One day, as I was praying, God vouchsafed to show me his hands only; their beauty was so great that I have no words with which to describe them. A few days later I saw his divine countenance also, and was, I think, entirely absorbed in it, ... While he spoke to me, I beheld that majestic beauty, and the words which that beautiful divine mouth spoke to me breathed an infinite sweetness. In those happy moments I felt an intense desire to see the color & size of his eyes, that I might tell of them afterward, but this favor I never won. All my efforts only caused the vision to disappear." "As the clouds draw to themselves the vapors of earth, so does he draw our souls to himself, ravishes them out of themselves, brings them upon the clouds of his majesty to heaven with him, and begins to reveal to them the ~~or~~ mysteries of the kingdom which he has prepared for them....

In these ecstasies the soul seems to leave the body. Hence the natural warmth diminishes, the limbs slowly grow cold, although one feels the whole most comfortable. In the prayer of union, in which we find ourselves already in our native country, we can almost always resist the divine attraction, though it be with difficulty & with great effort, but not in ecstasy; all resistance is then usually impossible. Before one thinks there comes a shock so sudden & mighty that one sees & feels as if that cloud from heaven, or that divine eagle, had swept one away & borne one off in flight." This condition is a sleep of the mental powers, in which they, without being ^{tell} wholly merged in God, yet can not show they work. The pleasure, the bliss, is incomparably greater than in the preceding state of prayer. The soul is overflowed with the waters of God's grace, which flows full to the banks. She can not & will not go either forward or backward, and only glows with the desire to enjoy such transcendent majesty.... My state then seems to me an absolute death to all worldly things & a ravishment in God.

I know no fit simile for what the soul then feels, she no longer knows what she does, whether she talks, is silent, laughs, or weeps. It is like a blissful delirium, a heavenly madness, in which one learns true wisdom; in short, it is a sort of most exquisite bliss."

With these few illustrations I must turn from the forms of trance which appear to result from the hypertrophy of some mental state to a very different type. From the theoretical point of view we would expect to find the lines of cleavage — so to speak — in disordination taking different directions in different people. In the cases of which I have been speaking the mental co-ordination would seem to be pretty much dissolved or displaced. In other cases, to which I shall return later — those of so-called secondary personality — we shall find the lines of cleavage relatively few, and constant in their direction & location. But to the trance states proper belong those forms of disordination in which ^{the} inner life of thought is left intact while dissociated from movement, from sensations, or from both. The ~~era~~ chronic

