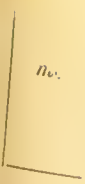
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BORDERLAND OF PSYCHICAL RESEARCH

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BORDERLAND OF PSYCHICAL RESEARCH

BY

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"Science and a Future Life," etc.

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WHOSE INTEREST AND PERSONAL SACRIFICES IN BEHALF OF SCIENTIFIC TRUTH DESERVE THIS HONOR

PREFACE

The present volume is not intended for the scientific student of psychology, but for the layman who wishes to understand the difficulties that attend the conversion of the more educated world to the more recondite problems of psychic research. I have here written on the more conservative side of the general question, and so have taken pains to show why it is necessary to be cautious about admitting supernormal phenomena. The book is devoted mainly to normal and abnormal psychology, with philosophic reflections bearing upon the problems of both. It is intended, of course, that it shall be helpful to all who sympathize with the present movement to investigate the residual phenomena of mind, and yet do not understand how they may be connected with the accepted doctrines of traditional knowledge. To the present writer all new facts and theories must, in some way, find an assimilation with previous knowledge, and however great the departure involved in the discovery of the new, it must have some point of contact with the old. The present work, therefore, should serve as a preparation for the consideration of supernormal problems, especially upon the evidential side. It is not a sequel to "Science and a Future Life" and "Enigmas of Psychical Research." On the contrary, it rather leads up to them and may help to aid the understanding of them by

indicating what the means of discrimination are between the normal and the abnormal, on the one hand, and between both of these and the supernormal on the other.

I have not tried in this to make any contribution to science. I am not trying anything new or sensational, but only to aid a little in the general enlightenment of those who are seeking some way of an intelligent understanding of the human mind in its less normal experiences. Hence the book must not be adjudged from the point of view of the trained psychologist as an effort to help scholars, but from the standpoint of public education as designed to do what text-books can hardly undertake. I have been free with illustrations and striking incidents, both as a means of exhibiting the nature of the problems of psychic research and of creating interest and intelligence regarding them. If the work avails to serve any such purpose, I shall be satisfied. But it is designed as a conservative treatment of very perplexing questions, and any expectations that it will do more will mistake both its aim and its usefulness. It simply touches upon problems which yet await investigation, and, though it proceeds along the lines of well-established truths, it suggests what there may be beyond them.

JAMES H. HYSLOP.

New York, May 17, 1906.

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BORDERLAND OF PSYCHICAL RESEARCH

CHAPTER I

INTRODUCTION

There are several groups of mental phenomena which are more or less residual, and which, lying on the borderland of both normal and abnormal psychology, have also both a scientific and a popular interest. They have been as much neglected by the one as they have proved fascinating to the other of the two classes of mankind. It may be unfair to say that science has neglected them, for there has been much attention given to some of them and little to others. But I mean by neglect of them that the attention to them, as compared to that given to normal psychology, has been small. The popular mind, however, has been interested in them more than in normal phenomena, and has been much more deceived than benefited by that interest. I refer to the phenomena of dreams, illusions, hallucinations, hypnotic states, secondary personality, apparitions, trances, and various phenomena, like reverie, abstraction, and exaltation, or ecstasy. Dreams, illusions, and hallucinations in the past have received cursory attention by some psychologists, and more consideration from psychiatrists, or students of abnormal psychology. But by none of them have these phenomena been

brought into the service of normal psychology. They have been the object of curious reflection, especially dreams, by many men and many ages, but instead of being appropriated for better and more intelligent views of normal mental action, they have appeared so exceptional as to fall outside the domain of consideration by normal psychology.

The reason for this is very simple. The views which had separated them from ordinary interest were due to a reaction against the more ancient conception of dreams. We are wont to suppose that men naturally distinguish between their dreams and normal experiences. This, however, is not altogether true. The ancients gave an external or objective meaning to dreams, and savages still do so, — a meaning that associates them very closely with normal experience. The causes of this may be the untutored neglect of ordinary for supposedly significant dreams, and then the consideration of only the latter, as there is some evidence that this was the case. It matters not what the reason for it was. The fact is indisputable that to many ancient people dreams were as much testimony to external influences or meaning as were normal sensory experiences. Illusions and hallucinations did not altogether escape the same interpretation. It is possible that the more intelligent views of these phenomena among the ancients were not recorded as were those of the ignorant and superstitious. But this does not alter the impression that we get of the natural man's ideas.

But when philosophy had gone far enough to distinguish between what was caused by the outside world

and what was caused by internal agencies, a radical distinction could be drawn between dreams and ordinary sense-impressions. It was the psychology of the latter part of the middle ages that gave rise to the distinction. The controversy between what was called Nominalism and Realism resulted in the conclusion that the mind itself had something to do with some of its phenomena. Dreams especially were considered its creations, and the view of illusions and hallucinations was affected by the same theory. Nominalism had shown that even our normal experiences were affected by the mind's own action, but "common-sense" philosophy could not accept this idealistic tendency, and in whatever way it expressed itself, it referred normal sensory phenomena to external causes for their explanation and remained by the subjective view for dreams, illusions, and hallucinations. As soon as pathology took up the abnormal, it resorted to a materialistic explanation of it, and associated the explanation of dreams with cerebral agency in a manner that connected them with the materialistic theory, and so separated their interest from the spiritualistic view which had based itself upon the normal and the distinction between it and the abnormal.

It was during the last half-century that the interest on both sides of this controversy was awakened. Philosophy and education, following the prepossessions of a civilization which had based its views upon the moral and religious conception of Christian spiritualism, were so occupied with normal human experience that the abnormal appeared to offer no value for their problems. The influences which kept them

to this aspect of psychology need not be detailed, but they are all summarized in the opposition between those two schools of thought which divided on the question whether the brain could account for mental action, or whether a soul was required to explain it. Those who thought the brain sufficed to explain mental phenomena emphasized the abnormal as proof of their view, since they found that correlation between cerebral disturbances and abnormal mental action which coincided with their view of a purely physical basis for them. The opposite school, appreciating the force of their antagonists' contention, emphasized the distinction between the normal and the abnormal, and rested its case upon retaining that position safe from criticism and refutation.

The consequence was that all residual phenomena received little attention in solving the problems of normal psychology. When these problems were limited to the meaning of experience for culture and ethics, that is, for practical life, the distinction and the evasion of the abnormal were justifiable. It was the explanation of the two types of phenomena, their ultimate causal source, that invoked the tendency to consider them together. But whatever their explanation, the distinction between them had to be maintained for the sake of their very different relation to our actions. The one could be taken as indicative of an external world which the other did not represent as it is. The only reason for recognizing the abnormal at all in this view was the necessity of protecting the mind against delusion. But when science, which is a search for causes, substituted its investi-

gations for philosophy and ethics, it discovered that the explanation of both the normal and the abnormal in physiology and psychology must be the same: when it was found that important humanitarian methods and results depended upon a better knowledge of residual mental phenomena, and when it was suspected that the more fundamental problems of normal psychology might find a solution, as the materialist thought, in the abnormal, the student of these phenomena, abandoning his traditional prejudices about them, found a new interest attaching to them, and began to investigate them in a more scientific manner. This, however, is very recent, and we are simply in the dawn of that conception which is to link normal and abnormal psychology together for the solution of both scientific and metaphysical problems.

Let me dwell a little longer on the different interests associated with these phenomena, and one might say with all phenomena whatsoever. There are two problems for human reflection, which, however closely associated, are distinct and involve somewhat different methods for their solution. They are the explanation and value, or the cause and the meaning of facts. Explanation endeavors to find how events come to take place; to determine what it is that originates or causes them; to ascertain the conditions under which they do and will happen. In the pursuit of this end we do not stop to distinguish between their normal and abnormal, regular and irregular, true or false character. We take them as facts, whatever their character or relation to practical matters. But in considering their value or meaning we are con-

cerned with their utility in our conduct and adjustment. In this suit we are more interested in what is normal, regular, true, as distinct from what is abnormal, irregular, false. We require to recognize and understand the latter as well as the former, but it is the normal and regular that constitute the facts which interest most of our life and conduct. These have the most value for our natural activities, and it may suffice simply to know what they are, and the distinction in kind from the abnormal, in order to regulate our behavior. In fact, we do not require always that we shall be able to state the cause of events, if we know their law, in order that we may adjust our conduct to the proper life. Hence the ethical interest is primarily in the character of phenomena, whatever their causes, and will be content with ascertaining their regularity or frequency; that is, their numerical relation to our natural and proper development. On the other hand, the scientific problem is concerned with the causes of all events without regard to this ethical value of a part of them. It may be the primary condition of determining what shall be ethical, and I shall not enter into any dispute against this claim, as it is not necessary to assert the independence of the ethical and scientific view of facts in order to retain the distinction between the causes and the character of events. It simply happens that we can often ascertain the character and value of facts before we know their explanation, and this character may suffice to determine the right course of action previous to our knowledge of causes,

though the discovery of the latter may still further fortify us in the regulation of action.

It was the difference between the scientific and the ethical interest that kept the materialist and the spiritualist at odds with each other so long in the question of normal and abnormal phenomena. The one was seeking primarily an explanation of both types of facts, and he did not stop to consider their relation to the ideals which had been founded on normal facts. The moralist and spiritualist, besides an interest in the great speculative question of a soul, which he tried to solve by the distinction between the normal and abnormal, conceding physiological influences in the abnormal, took refuge in the ethical and practical aspect of the phenomena as a justification of his indifference to abnormal facts. We have arrived, however, at that point in human reflection at which we can no longer disregard the relation between normal and abnormal mental phenomena in the ethical and philosophical problem as well as in the scientific. However distinct the scientific and the ethical view of facts may be in common life, the deeper and higher view of them will not permit the discrediting of one interest for the other. The wider view of them will be conditioned by the explanation, whatever immediate importance attaches to their practical aspect. This is more particularly true of the controversy waged between the materialistic and the spiritualistic theories as to the causes of mental phenomena. The fact that abnormal mental phenomena have to be considered as mental by the man who wishes to escape the materialistic interpretation of their source, while

he insists on denying the materialistic theory, places him in an embarrassing position, as he has to admit a character for them which shows that he may not have the right to base the integrity of his spiritualistic view upon the distinction between the normal and the abnormal. If abnormal mental phenomena could be characterized as purely physical in nature, like supposed molecular action of the nervous system, the matter might be different, as long as it was insisted that normal mental phenomena were not mechanical or molecular. But the moment that the two types of phenomena were considered as mental in nature, whatever consistency the distinction between them has with the spiritualistic theory, the way was open for the materialist to urge the simplicity of their explanation, and, finding that cerebral influences were conceded for the abnormal, he could hardly be blamed for advocating a similar explanation for the normal. In that process of unifying the causes of mental phenomena, materialism found its advance, and the consequence was to make the causal interpretation of mental phenomena prior to the determination of their ethical valuation. In this way, normal and abnormal psychology are brought together in mutual service, and there is reason to believe that they may sustain the same relation to each other that pathology has to physiology and medicine. Pathology, which is the study of the abnormal in physiology, revolutionized medicine, and in the same way psychopathology may revolutionize our ordinary and normal psychology, or, if not revolutionize it,

may solve its problems where it was supposed to destroy them.

For this reason I propose to introduce the study of some abnormal phenomena by a brief consideration of the fundamental processes of normal psychology, assuming that the same laws govern both fields of mental events. We shall be better prepared in this way to understand the deviations from the normal which we find in dreams, illusions, and hallucinations. We may admit all the extraneous causes we please into the case; that is, causes extraneous to those affecting the normal field; we do not in that fact discredit the identity of the laws which govern the nature and contents of the abnormal as mental phenomena. This will be apparent when we come to consider the matter in detail. Here I can only announce my intention as a reason for outlining the normal laws of mental action.

It was as a practical means of studying and curing insanity that attention was called to the importance of abnormal psychology. Of course the scientific interest was awakened in the clinic and the asylum, and brain physiology appropriated the significance of the facts to its own purposes. But it was not long before the discovery was made that they were usable in the diagnosis of disease within the limits of mental disturbance. Then came an interest in hypnotic suggestion which reflected something like a causal relation of mental states to organic, and this was followed by phenomena which apparently suggest a causal nexus between mental states themselves parallel with the causal connection between different

physical phenomena on the one hand and between physical and mental phenomena on the other. I shall not stand for a theory of causal nexus between different mental phenomena, as something to be sought for with perfect confidence. But the appearance of some causal agency of mental upon organic operations indicates that its nature is open to investigation and use. It seems so well assured that it is but a matter of larger and more accurate observations to determine the nature and limits of its application. But it is not so clear that any causal nexus exists between different mental states analogous to that between physical events. The suspicion or supposition of it is not so well supported as the influence of mental states upon the organism. But if it be a fact, or if there be reason to suspect it, this alone makes inquiry necessary. But the first step in any such investigation is to determine the relation between normal and abnormal mental states as connected with mental laws, and then to push further investigations as the phenomena demand them.

The physiological question may be held in abeyance. I mean the problem of organic explanation of mental phenomena. In the study of both normal and abnormal mental phenomena we are first interested in the coexistences and sequences of the phenomena themselves, and the question of their ultimate causality may be postponed. No doubt the study of causes must at last land us in the organic basis for their occurrence as we know them; for the body is the last fact in the series which we find connected with mental phenomena. It unquestionably has some

causal relations to the facts. But there are additional questions to be settled which have to be determined before any final opportunity can be offered for determining the physiological problem. There are laws and associations which have to be studied before the autopsy is possible or before the dissecting-room can disclose any secrets. It is this course that is open to psychology before physiology can even approach its problem. The psychological meaning and connections of mental phenomena may be ascertained without waiting for the scalpel and physiological methods, and experience has shown that much can be determined which cannot be effected by physiological methods. The application of suggestion, normal and hypnotic, to therapeutics, though we know very little about it, nothing physiologically, is the most striking illustration and proof of this contention. The same thing is apparent in all education on a larger scale, and even in ordinary medical practice, where the physician relies quite as much on the influence of the patient's mind as he does on the use of medicine. He has consciously or unconsciously learned that mental balance, or perhaps better, the healthy mental state, is often necessary to the utility of therapeutic agents of a physical kind. Besides, there are all sorts of systematic relations and laws for mental phenomena that can be known only independently of physiological procedure. No amount of physiological investigation will throw any light upon the order of mental events or their contents. These have to be ascertained precisely in the way we ascertain the order of physical events, and, if

metaphysical explanations are to be disregarded, as the phenomenalist always tells us, we do not require more than the determination of the regularity and irregularity of phenomena to satisfy our curiosity.

However this may be, it is certain that the nature and importance of many of them are determined before their cause is known. Hence, while no abatement of physiological study need be encouraged, and without disparaging its right to insist upon an organic basis for consciousness as sensibly manifested, there may first be that investigation of the uniformities of coexistence and sequence in mental events which makes physiological investigation interesting and important, and which will justify the assumption that residual mental phenomena have the same explanation as the normal. If we cannot connect the two types of facts, we cannot remove the conviction that the abnormal are so anomalous in character as to forfeit classification as mental. This must be settled before physiology attacks the issue. The consequence is that such study as will here be undertaken of the abnormal must be only that which determines its relation to the normal, and physiological theories may have a free field. In order to understand modern ideas on the matter, however, it may be necessary to outline the established conclusions of neurology, but I shall do nothing more, and shall not attempt to contravene any theory of the relation between the mind and the brain which physiology may defend.

There is a class of phenomena that is specially qualified to throw light on the relation between normal

and abnormal psychology, as they probably lie on the border-line between them both. I refer to the phenomena of *secondary personality*. I shall define and discuss these at length in a separate chapter, and hence I only refer to them here for the purpose of indicating what I believe to be very important for bridging the wide chasm between normal and abnormal phenomena in their clearer manifestations. Secondary personality is not an abnormal phenomenon that suggests insanity of any such type as requires treatment, and as it is so common a phenomenon in those whose whole lives seem to be perfectly normal, we may even raise the question whether it is anything but a normal fact. I am not concerned at present with the solution of this problem, but only with the general fact that, being a name for subconscious phenomena that cannot be directly known by the normal consciousness, it defines a class of facts which are important for various interests affecting the problems related to the claims of the supernormal and especially for limiting those claims to some reasonable field of application. In any case, it defines a group of phenomena having a very great importance for the present problems of psychology, and must here receive an attention commensurate with that importance.

Secondary personality, however, must be preceded by the investigation of illusions, not because there is any connection whatever between illusions and secondary personality, but because illusions are so definitely related to normal mental states that, whatever suggestion of the abnormal they may contain,

they are a departure from the normal in a much less degree than subliminal phenomena. Hallucinations will follow illusions because they represent phenomena nearer subconscious action than illusions. They may even merge into those of secondary personality, at least of a certain type, and so afford another link in the connection between one extreme of the normal and the other extreme of the abnormal. These considerations have influenced the choice of order in the discussion of the various topics.

With the view of studying the abnormal in the light of the mental laws which regulate normal action of the mind, and also of analyzing those laws more clearly, I have resolved to introduce the discussions of this work by a brief statement of the fundamental processes by which all our knowledge is gained and the circumstances which give rise to the problems suggested in abnormal psychology. I therefore begin with the problem of sense-perception, and follow it with that of the interpreting functions of the mind. In these we shall provide ourselves with the criteria which the scientific student uses for making phenomena intelligible and testing their claims to any particular character. The examination of memory will follow these two fields of elementary processes, and provision will be made for the problems that are apparent in certain phenomena of secondary personality and illusions of memory. In these three chapters the foundations will be laid for a better understanding of the skeptical attitude which scientific psychology takes toward much that claims to transcend ordinary knowledge.

CHAPTER II

SENSE - PERCEPTION

In the study of exceptional and residual phenomena, it is always necessary to have some standard by which to measure them and to make them intelligible, and, unless they in some way embody the same general laws and functions, they must forever remain outside the ken of the understanding. The slightest examination of many abnormal phenomena reveals the action of familiar laws and causes, and suggests that, if these exceptional and residual facts were better known, they would exhibit less mystery, though they remain just as exceptional as before. To ascertain the extent to which this is true, and to which we may apply the interpretations of normal mental phenomena to the abnormal as simply disturbances in the action of very complex functions, we must go to the study of our normal mental processes, where much the largest part of our average experience is found. We shall then better understand the real and apparent variations from these normal occurrences, and the reluctance with which the scientific mind accepts any such deviation from them as is implied in supernormal phenomena. For this reason I shall devote a little time to the analysis and interpreting of the elementary processes of knowledge, as presented in our normal experience. I begin with sen-

sation and perception, which represent the first stages of our knowledge.

The senses are the channels through which comes our knowledge of the external world. I do not here say or imply that this knowledge is correct, or that we form from it immediately right conceptions of this external world, but that, in some way, we obtain it *through* sensory experience. Whatever its nature, it would not be normally acquired in any other way, and hence sense-perception confines our knowledge of external things to sense-impressions. There is no proposition of psychology on which men are more agreed than on this. They may dispute about the nature of our knowledge, about the nature of matter, and about the limits of sensory experience, of its contents and of its certitude; but they are agreed that we can have such knowledge as we do possess only through the agency of sense-perception, and that this agency consists of the organs or media represented by the senses. Now how do the senses give us this knowledge? The answer for the layman is that we get it by sensations. But what are sensations, and what do we "know" as a result of them?

The answer to this question also seems very simple. We are accustomed to have it said that sensations are the mental states by which we get our knowledge of the material world. Here, then, we are going round in a circle and make no progress with the problem. The means of getting external knowledge is sensations, and sensations are the means of getting our external knowledge, and we are just where we started. But the curious mind will not stop with

any such answers, and insists on a more thorough description of the process, especially as man's experience has revealed to him a large number of illusions and errors of judgment associated with his sensations, a fact which has suggested to many the question whether we know anything at all independently of our mental states. That is, they would say we can know only the states themselves. Illusion and error seem to have the same source as our assumed truth. This creates a problem for us which is how to know when we can accept sensory deliverances and when we can disregard them. We require some criterion by which to distinguish one type from another and to determine the nature and limits of sense-experience. The need of discriminating between his normal sensations and his dreams, for instance, on the one hand, and between his sensations and his inferences on the other, forces man into a most careful study and definition of his elementary mental states. His first aim, therefore, is a theory of how his sensations occur and what they mean. The hope, in thus studying them, is to find the laws which determine or regulate the order of both the normal and the abnormal states associated with sensory functions. Their superficial resemblances are clear, and the conviction of an external reality in one and of illusion in the other is as tenacious as their apparent identity is clear. Consequently, investigation of some kind is rendered necessary for understanding the meaning of all of them and for distinguishing the one type from the other.

An ancient Greek philosophy formed a very simple

theory of sense-knowledge, which probably represents the most natural conception of the untrained mind when it is called on to explain how sensation can take place. The majority of lay minds probably do not imagine that there is any problem in the matter, but simply take sensations for granted as facts which, whatever their explanation, are not particularly mysterious. But when asked to treat them as puzzling phenomena they will probably give a naïve explanation of them. Such was the theory of Empedocles and Democritus, the ancient Greeks, to whom I have just referred. Their view, while it was a tacit explanation of sensation, was less such than it was a theory of knowledge aimed to give an intelligible account of how we came to know an external world of matter. Democritus thought that objects threw off little *eidola*, or images of themselves, *corpuscula*, as they were also called when the doctrine was translated into Latin, and that these little bodies, simulacra of the objects themselves, impinged upon the soul, or sensorium, as we should say, and in this manner we came to know these external objects which threw off such images. This view was tantamount to saying that the reason that we could know objects was that they succeeded in impressing upon us some simulacra of themselves, and, of course, if our sensations were only impressions like objects, it would be natural to feel that there was nothing puzzling about our seeing them or knowing them. They were *there*, one and the same in kind, with the knowing process and the known object.

But it was not long before this naïve view was

modified. It took but little skeptical reflection to discover that there was no sense-evidence for the flight of these *eidola*, or images, and for their impingement on the soul. Such a theory might seem possible on certain assumptions, and might conform to some speculative demand to bridge the chasm between the sensorium and objects at a distance; but the theory wanted the necessary evidence for its truth to the very senses under consideration, and so had to succumb to a view which was not so easily attacked, even though the corpuscular theory might have been refined to suit the situation.

Hence the view of sense-knowledge which followed the corpuscular theory of Empedocles and Democritus was that objects set up some motion between themselves and our senses, and that the immediate stimulus or cause of sensations was this motion, and in connection with this stimulus our perceptive knowledge arose. This view dispensed with the difficulties of the corpuscular theory, and permitted objects to retain their bodily integrity while the idea of contact could still remain to explain the occurrence of knowledge. Action at a distance was regarded as inconceivable, and hence the theory of Democritus, which assumed that contact and similarity of the sense-impression to the object were necessary to perception. But the idea of corpuscular emanations soon became as absurd as action at a distance, and to save the situation, the conception of motion, intervening between things and sense, was substituted for that of corpuscular impressions, and the assumption of contact was preserved, while that of flying *eidola*

was abandoned. The theory of motion has survived ever since its assumption.

This view serves very well for sight and hearing, where we have come to think, whether rightly or wrongly it is not necessary to say, that there is an interval of space between the object and the sensorium, and that the light and sound which are their respective stimuli are motional or undulatory in nature. But antiquity had no scientific knowledge of light and sound to substantiate its speculations, hence its only guide was the anomaly of action at a distance, which it overcame by the supposition of *eidola* or motion. In accepting motion instead of corpuscular impressions, it gave up contact of the object with the sense affected and assumed some sort of influence conveyed across the interval of space admitted to intervene between object and sensorium. This conception, however, was not necessary, even if true, in the case of touch. Here the object was supposed to be in contact with the organism affected. It was not necessary to invoke motion from the object to the sensorium. Hence the analogy here was that of the seal or stamp on wax, the seal corresponding to the stimulus and the wax to the sensorium. In this view the conception was much the same as that of Empedocles and Democritus, except that the assumption of *eidola* was unnecessary.

It is probable that Aristotle was better satisfied with this analogy than with that of motion or of the *corpuscula*. For he compared all sensation to the impression of a seal on wax. Both views had the common conception that objects acted on sense, but

they did not agree upon the manner of this causal action or upon the conditions under which sensations occurred. Each view had its own perplexities, but it is curious to remark that the theories adopted assumed a point of view which did not cover the whole field of sensation. One formed its theories upon the senses of sight and hearing, and the other upon that of touch. In one, space intervened between sense and the object, and this chasm had to be spanned, and in the other space did not intervene; contact was the condition of the case. Neither the flight of *eidola* nor the transmission of motion satisfied the terms of both situations, hence the separate schools had to choose one sense as the functional type and ignore the perplexities proposed by the unity of sensory experience. This is still a problem for us, though we have probably decided for undulatory stimuli for sight and hearing.

It is probable that the uncritical mind does not feel any perplexities in the case. In our normal and unreflective experience we probably do not incline to ask how we come to know things. We are so familiar with our sense-experiences that we are satisfied to say that we see objects, that we hear them, that we touch them, that we taste them, that we smell them, etc. We do not have any theory about sensation. We take the perception of external objects as a matter of course. We do not think of them as causing sensations. We do not even think of causal action at all. It is enough to think that objects are there, and that we perceive them. We admit " sensations " in touch, but never think of them

in sight and hearing until philosophic reflection drives us into it. The very fact that we can give no intelligible account of the manner in which we can see or hear objects at a distance, the fact, indeed, not involving any conscious problem for us, makes us satisfied with the mere perception of them; hence we do not think of our knowledge as an effect like the passive result of a cause. We distinguish radically between our tactual experience or "sensation" and our visual and auditory perceptions. We may come to think of the two different agencies of knowledge, or all of them in the physiological field, as senses, but we do not confuse their action. We may readily distinguish in the one between the object and the sensation, namely, in touch, though this is an unconscious admission of conceptions from another sense, but in the others, namely, sight and hearing, we have no "sensations," or are not aware of any such thing as we conceive the term in reference to touch. We simply perceive the object in touch, and this without any direct knowledge of intermediate causal influences. We do not pretend to give any philosophic reasons for considering that all sensations are essentially the same in kind when classifying them as if they were, and so feel no perplexities that assume an anomalous difference between touch and sight and hearing.

This was probably the general state of mind after the decline of Greek philosophy and until modern times. But at the first awakening of scientific reflection, men began to study the perplexities of sense-perception, and, though they did not return to the

naïve views of Empedocles and Democritus, with their supposition of *eidola* or corpuscular emanations from objects impinging on the organism, or to the equally unsatisfactory comparison of Aristotle, namely, that of the seal and wax, they did apply the theory of vibrations and motion in some of the senses and the idea of causal agency in all of them, but they left unsolved the apparent anomaly between touch and sight and hearing. Their wider view of connection was that of causal agency, which was more abstract and intangible than the ancient attempts to unify sense-perception by ignoring the anomaly mentioned, though, in fact, this general assumption of causal agency quite as much ignored the real perplexity as did the Greeks when they chose one sense as the measure of external knowledge and disregarded the others. However this may be, men began to look at sensation and sense-perception as an effect to be primarily accounted for by the causal action of objects on the sensorium, and the unique character of this effect as an activity of the mental or cerebral subject was either unknown or neglected for the time, or at least was subordinated to the causal action of objects, until idealism came forward to emphasize the internal or subjective factor of knowledge. Of this again, as I am not at present concerned with that movement which began to surmise or assert a larger number of intermediate steps in knowledge, though it was in fact an attempt to eradicate the anomaly which had perplexed both Greeks and later philosophers in the relations between the different senses. I shall have to approach that attempted solu-

tion of the problem through the anomaly itself and the substitution of the conception of causality for the supposed essential identity of different sensations. This conception of causality was the general one at the basis of the assumed contact of touch and of motion or vibration for sight and hearing. It was an interesting scientific circumstance that gave them the first place in psychological theories of sense-perception.

The application of motion to the phenomena of sensation and perception in sight and hearing was demonstrated by the physical discovery that light and sound were undulatory and not corpuscular in their nature. For a long time light was supposed to consist of minute corpuscles thrown off from radiant matter. But finally certain phenomena seemed to prove that it was some form of undulatory or vibratory motion of the ether, and soon it was proved that sound was also due to undulations or wavelike vibrations in the air or other matter. These discoveries at once revived the older theory of sense-perception in the sensations of sight and hearing, and perhaps all other sensations were affected by this assumption of undulatory stimuli. However this may be, the doctrine of intermediate causal action between objects and sensations in these two cases has taken a fixed place in psychology and philosophy, and suggests that we must reckon with its conceptions in the other senses when accepting their general identity with sight and hearing.

The naïve view of the man who does not reflect upon the various steps involved in our knowledge

of external objects naturally assumes, as I have already said, that there are no mediating influences in the phenomena. This view is favored by our natural ignorance of what those intervening causes are. As the undulations of light and sound are not immediately known by him, they are ignored in his judgment of reality until investigation discovers indirectly that they are there. Hence we naturally assume that the object of perception is indirectly known when these intermediate influences are known to exist, and at the same time that we come to this view, we often or always retain the conception of these objects which characterized our ideas before we suspected an indirect knowledge of them. With many reflective minds this system of intervening agencies between objects and sensation suggests a theory which conceives objects as "mental constructs," that is, products of the mind or brain upon which the motion or vibrations act. Of this view presently. But with the majority of men who do not reflect upon it, the object remains the same in their conception of it after the explanation of perception and sensation by intermediate agencies as it had appeared before, and their minds may feel puzzled to account for a phenomenon which is mediate instead of immediate. But puzzled or not, earlier habits prevail to protect conceptions which the facts ought to modify, and the problem of sensation and perception takes on a complicated form for the man who wants to insist upon the retention of his earlier ideas while he admits the existence of causal agencies not identical with the objects known, and admits them in

deference to the assumption that causal action can never occur at a distance. Confined to this maxim, and not being able to suppose, as he might do, that, however causality requires contact for its effects, knowledge might not require this for its judgments, he feels an embarrassment in his problem which practical life does not experience, and he remains between the acceptance of his natural conceptions and skeptical influence of scientific facts about intermediate agencies in his view of sense-perception.

But the discovery of these intermediate agencies and their causal influence, such as vibrations transmitted from objects to the organism, gives rise to inquiry about what goes on in the organism itself. If we do not perceive objects without motional agencies intervening between them and the senses, and if these agencies are different from the objects, we may begin to suspect that there may be as much difference between what takes place in the organism after the action of stimulus as we assume exists between the object and the undulations which it radiates. When we get into this state of mind we must be prepared for almost anything.

Right at this stage of reflection an important circumstance occurs. Many of the sensations, especially those of touch, seem to occur at the periphery of the organism, that is, on the external area of the body presumably affected, while we have reasons to believe that there is more than the periphery to be taken into account. We have discovered, during the progress of reflection on the matter at issue, that we have a central nervous system with various

branches and ramifications distributed throughout the bodily tissue, and various evidences go to show that, somehow, all states of consciousness, whether sensory or intellectual, whether localized on the periphery in perception or not, are connected with this central nervous system. I shall not indicate the evidence for this, as the fact is too generally known and accepted to require this. The fact gives rise to inquiry about the apparent source of sensation in affections of the periphery, and so the question whether it really occurs there or in central brain tissues. The supposition sometimes is that the peripheral localization of the sensation is an illusion and that it is really a central affair. But the difficulty is at least partly solved by the supposition of molecular action of the nerves between the periphery and the brain. The phenomena of reaction time seem to prove this fact of transmission from surface to centre, and possibly in return, as the phenomena of peripheral localization after the amputation of a limb seem to prove a central origin for all peripherally localized sensations. Reaction time is the period elapsing between the moment when stimulus touches the sensorium and the moment when the sensation occurs. This is invariably a measurable period, and seems to show beyond a doubt that a certain amount of time, insensible to our rough measures of sense-experience, is required for the transmission of stimulus to the brain and the occurrence of the sensation. This interval is supposed to be filled by molecular vibrations intervening between the periphery and the brain-centres, much as luminous and sonorous vibra-

tions, outside the organism and acting as stimulus, intervene between the object and the sensorium. Additional complications are thus introduced into the already perplexing problem.

Where the naïve view supposed that we simply saw and felt objects, that is, perceived them directly, and where it was not troubled by anomalies about action at a distance, intervening space, or differences between mental and material phenomena, the later view recognizes several distinct phenomena which may be described in the following manner. First, we have the object, often at a distance, perhaps always so, except in the cases of touch and taste. In the thermal sense there is the capacity of perceiving its object either in contact or at a distance. Then there is the system of motions or undulations intervening between the object and sense. There is next the impression upon the periphery of the organism, and this is followed by a conjectured molecular action in the nerve-filaments leading to the central nervous system. When these " impressions," or influences, are received in the brain or nerve-centres there is a reaction, or process so named metaphorically at least, and presumably again some transmission of molecular action back to the periphery to cause either sensation or some motor action in the muscular system. What these inward and outward transmissions are we do not know, at least in any sensible way. They are described as molecular because this is all that we can conjecture of media that are known or supposed to be molecular in structure and function. But whatever they are, they are conjectural and not im-

mediately known. They seem, however, quite as well assured as if they were directly known. Hence there are several different steps in the production of sensations and perceptive knowledge where the naïve view had supposed the process a very simple one; and when each step is supposed to have a different character from the preceding one, it is natural to raise the query whether we actually perceive the object at all as it is ordinarily conceived to be. This suspicion is further confirmed by the doctrine of specific nerve-energies, which shows that the same stimulus acting on different sense-organs will produce different sensations, and different stimuli acting on the same sense-organ will produce the same sensation, indicating that the sensory organism and its mode of action are factors in what is often taken for the object itself. Thus a shock to the retina will produce a sensation of light as well as luminous vibrations will produce it, and a touch on the tympanum of the ear will produce a sensation of sound as well as undulations of the air will produce it.

This complexity of the process, taken with this peculiarity of specific nerve-energies, gives rise to many curious questions in the reflective mind. The first question is, how can we know objects by such a mediating process. This query appears to have much force where it suggests an answer opposed to the naïve view which, even when it recognizes the indirectness of the process, is quite satisfied with the assumption that the thing known remains intact, and that the mediation of vibration between it and sense creates no serious problems.

The most of us, trained or untrained, naturally accept our familiar conception of the object as beyond revision or denial, and so assume that the various steps supposed to explain it do not involve any modification of our idea of the place and nature of the object. But the very fact that we suppose, or once supposed, that the object is immediately known, — and certainly that which usually passes for such an object is immediately known, — while we have no immediate knowledge of the intervening motion or activity affecting the sensorium and nerve-centres, at once suggests the question how we can really know the object when this is assumed not to come into contact with sense and when there is presumably no resemblance between this supposed object and the motion or molecular phenomena that give rise to sensations. All these intermediate steps which appear to have no representative character for things at a distance, and which are not directly known, tend to suggest that we do not really know objects at all, or that there is no such direct knowledge as we had naïvely supposed. Consequently many minds come to the conclusion that what we do directly know is the sensation, the subjective state of the sensorium, and hence, with its non-representative character, that we have to infer the existence of the external object, which can only affect the mind by agencies that are modified all along the line between the external and internal worlds.

Two schools of thought arise here. One still insists that we know objects immediately, and the other that we do not "know" them, but that we infer

their existence. When this controversy, however, is reduced to its final terms, the difference is mainly whether we directly and certainly know the *nature* of reality or not, one holding that we do in some sense, and the other that we know only the "*appearance*" of it, the way in which the sensorium is affected by stimulus. The former school tends to think that this phenomenal nature of the object involves the assumption that our knowledge of reality as naturally represented is illusory and not to be trusted.

But I shall not settle the controversy between these two schools, as it is not important to the purposes of this discussion, which is to be concerned with mental phenomena and their relations to each other, with criteria for determining those which have a normal practical value and those which do not. It would take us far into metaphysics to decide the dispute between the realist and the idealist, between the man who thinks we know reality directly and the man who thinks we know it only indirectly; between the man who thinks we know the nature of things and the man who thinks we know only their appearance or our mental states. But I have alluded to the controversy for the purpose of making intelligible a view of our mental states which can hardly be made clear in any other way, and this was suggested by the enormously complex processes giving rise to sensations. The moment that it was called upon to suppose that objects retained their immediate integrity, after a whole series of intermediate agencies quite different from them was necessary to arouse conscious perception, it was inevitable that the naïve

view which had accepted the direct testimony of consciousness as to the nature of objects should be troubled by the apparent illusory character of the judgment involved. The discovery of the several steps to knowledge brought to the front the fact that the whole matter could be looked at from the standpoint of the mind as well as from that of the object. Whatever the presumed causal influence of objects in exciting sensation, the nature of the sensation was at least apparently the product of the mind, that is, a subjective function, and was in no respect a facsimile or simulacrum of the object, and much less was it supposed to be the object itself. The difference between the stimulus, or at least the conception of what that stimulus was, intervening between the object and the mind, namely, the motion emanating from the object, and still further the difference between the molecular action of the nervous system and what appeared to consciousness in sensation, made it difficult to suppose that we actually saw or heard objects when we did not directly know the admittedly immediate causes of the sensation, without which the perception of the object would not take place. Hence arose the feeling that sensation is purely a product of the mind, in so far as its nature is concerned, though its occurrence depended on external stimulus.

Various actual experiences also seem to point conclusively to the same result. For instance, if we look at the sun for a few moments and then turn toward the blue sky or some similar background, we shall see a distinct image of the sun projected

on this field, and for a few seconds it cannot be distinguished from the real sun. It will then fade into what is called the negative after-image, an image which is in all respects like the sun except in color and brightness, the positive after-image not being distinguishable from the real perception of the sun, except in its not representing a real or supposed objective fact. The negative after-image may take a red or a green, or even a dark color. But in all cases the phenomenon shows a continued brain or mental activity like the real percept, after the removal of the stimulus, and hence without the actual presence of that stimulus in any normal form. Again if we place the finger on the ball of the eye and move it so that the effect will be to shift the mental images present there, the landscape or objects at which we are looking will seem to move, when in fact they are not moving at all, according to the standard of normal judgment. The image in a mirror does not represent the right object at the real point of space at which it is situated, and certain kinds of mirrors will distort objects beyond all recognition. If we look at objects through colored glass they do not seem the same as in normal vision. Color-blindness illustrates the inability of the sensorium to perceive the object as in normal perception. The prism will produce color-distortion, and the microscope will magnify the size of objects.

These phenomena are not new. They are very familiar examples in the experience of all of us, and perhaps might be multiplied in various ways. But familiar as they are, we do not always think of their

significance for our views of sense-perception. Even after we have discovered their subjective character we still think and act as if our normal experience, which is supposed to have retained its real character, is not to be compared with these illusory instances. But all these and many other facts show that our sensations are modifications of mental action, and that "objects" appear according to the way the mind is made to act by influences intervening between the supposed object and the subject or mind. Hence we are forced to recognize a subjective factor in our elementary states of consciousness that is neither the object nor representative of it in any sense involving identity of kind. This conception of the matter precipitates the feeling that our ordinary judgments are perfectly illusory, if we reflect on the evident resemblance between the normal and these illusory experiences. The consequence is that the question is raised regarding a test for the reality and validity of any of our sensory knowledge. If we cannot trust such primitive and tenacious judgments as those of sense-perception, what can we trust? We seem forced by the facts to think of sensations as reactions of the mind and not in any way presentative or representative of objects at all. That is, they are not facsimiles of them, and we either know nothing of external reality, or we have to obtain our knowledge by some form of indirect, inferential, or implicative act of the mind about it. Sensations are activities of the subject, not images of the object, even though we have reason to believe that they are in some way due to external agency.

The reactions of physical objects under impact afford good analogies of the same thing. The sound of a bell is not like the hammer or the motion of the hammer that produces the sound. The impact of the same kind of a blow on very different objects produces different effects. On a bell it is a musical sound, and on different bells it will be different sounds; on an ivory billiard-ball it is a clear, sharp sound, on clay or wood it is a dull thud. The reaction in all such cases is determined by the nature of the subject or substance affected, or on which the action is directed, quite as much as by the external cause and perhaps more. It is the same with the mind or brain. Its response to stimulus is not like the stimulus, and what we take for reality in our naïve way of looking at the matter appears to be only the mind's own product or "construct." What we have supposed to be an external object thus seems to be a mere phenomenon or internal fact.

What, then, do we know about external reality? How do we know that our experiences in sense are not illusions or hallucinations? In what way are we different from the abnormal or insane mind? What criterion have we for our belief in external objects? The insane mind apparently sees objects which examination shows to be creations of his own mind or brain, and which are not objectively real at all. In what respect are our normal experiences different from these?

The answers to these questions have given rise to two schools of thought. One of them calls itself the realistic school, and means in some way to insist

that our normal sensations and perceptions stand for at least something outside the organism which we denominate external reality. What its reasons are for this judgment I am not concerned at present to discuss. They are not important for the purposes of this work, which is to study mental phenomena primarily in their relation to the distinction between the normal and the exceptional. Hence I am interested in the problem of Realism only in so far as it represents a class of thinkers who suppose they have a means of defending the integrity and validity of our primitive judgments, based upon sensation, and in so far as it represents the effort to distinguish between two distinct types of mental phenomena that have different relations to our practical life. But this realistic school divides between two interpretations of experience. One division holds that sense-perception correctly reports the nature of external reality and that objects are as we see them. This school may be called that of Presentative Realism, meaning that objects are presented to and "in" sense as they appear. The other division of the school holds that we do not directly perceive external reality, but that we infer its existence from our sensations. This view is called Hypothetical Realism. It makes some concession to the idea that sensations are more or less subjective affairs, while the alternative view tends to emphasize the result from the standpoint of the object and perhaps does not appreciate the subjective nature of sensation, though neither denying nor assuming it consciously.

The second general type of thought, opposed to

Realism, calls itself the idealistic, and aims to judge of experience from the subjective point of view. It assumes an opposition of some kind between sensation and what it betokens, or is supposed to betoken. This school, Idealism, divides also into two views. One of them admits the existence of an external reality, but denies that our knowledge of it is direct or presentative and immediate, and so explains that the knowledge is inferential or hypothetical. This view is virtually identical with that of Hypothetical Realism, and differs only in that it is inclined to emphasize the antithesis between sensation and reality. But in essential particulars the view is identical with hypothetical realism. The second type of idealism is more emphatic still in its representation of the limitation of knowledge to sensations or phenomena, and inclines to abandon all antithesis between the subjective and objective, so that in so far as it admits the existence of external reality at all, it makes it the same in kind with the subjective, and to that extent approximates Presentative Realism, save that it inclines to make the real mental instead of material. But it insists on maintaining that we know nothing about the nature of the external cause, if it is not mental. Its favorite formula is that we know only appearances or phenomena; that we know things only in terms of consciousness, etc. This view does not wholly escape the belief in something other than sensations, though it tends either to deny all possible knowledge of this reality, or assumes that it is mental in nature. Hence, though there is a point of reconciliation between this view and either

form of Realism, it has certain aspects of skeptical difference that distinguishes its way of looking at things from that of naïve Realism.

I shall not undertake here to solve the problem discussed by these two schools. It is a problem that involves more than the criteria to distinguish between the normal and the abnormal or exceptional in mental phenomena, though it is closely connected with this in some respects. The question in dispute between these two schools primarily regards the *nature* of reality, the limits of *presentative* knowledge, rather than the fact of external objects, and the question of illusions arises incidentally. Illusion is suggested by the necessity of reviewing our primitive and naïve judgments when we come to admit the creative agency in what it knows or seems to know, if creative agency is the proper term for describing the act or product. Hence, though controversy between realism and idealism concerns the mode of explaining knowledge, and does not in fact represent the question regarding the distinction between valid and illusory mental states, it gave rise to this problem and associated or confused it with the metaphysical issue. This has been the reason for discussing it as much as I have done, because it is the historical line of thought about it that represents the way in which it has been approached. Though we may abandon the specific way in which the dispute is carried on between these two modes of speculation, we can hardly escape the use which it has for the problem of deciding between what has an objective and what has a subjective origin.

The realist has always supposed himself assured of a criterion for distinguishing valid judgments from illusions. Whenever he discovered or suspected an illusion in vision, he tested his experience by an appeal to touch which was supposed to give reality unmistakably. Any apparent object which could not affect touch was an illusion in the sense to which it appeared. Thus the normal and the real became the same thing. But as the psychologist could assert the subjectivity of tactual sensations quite as well as the visual, the aural, or the thermal, and as illusions are occasionally discoverable in tactual experience, the security against illusion had to be sought by some other means than touch alone. In our ordinary experience tactual phenomena are our test of what is real when we find the need of asking whether any other has such a meaning or not, and its practical value in the various adjustments of life need not be disputed or doubted when asking whether it is any better expression of the nature of things than any other sense. Whatever reasons we may have for an appeal to tactual experiences for testing our relation to things, we do not require to suppose that its superior importance for this end indicates its right to estimate the nature of things to the exclusion of vision, hearing, and the other senses. Reflection on the common relation of all the senses to our knowledge, and on the occasional illusions of touch, shows that this sense no more gives the " real " directly, as the naïve view conceives it, than the other senses, and the consequence is that it becomes necessary to distinguish between the real and the normal as a means

of evading the philosophical controversy. Hence we may relegate the dispute between the realist and the idealist to the domain of metaphysics or to epistemology, and seek the explanation of illusory and abnormal phenomena in some other way. This new way actually came into recognition with modern science with its emphasis upon the relation of phenomena and the laws of their occurrence rather than upon their metaphysical causes.

This new way of solving the problem of illusion had nothing to do with the nature of things, interesting as this question may be to the human mind, and however important it may be to certain types of reflective speculation affecting wider than immediate practical issues. Ignoring this metaphysical question, it sought to determine the practical question by ascertaining the *laws* of mental action and their relation to daily life, in which there was no dispute between idealist and realist. In the last analysis we may have to resort to the principle assumed by both these schools, namely, that of external causality, for deciding when a phenomenon is purely subjective in its origin and when it originates outside the subject. But in regard to the question whether our knowledge of reality is direct or indirect, mediate or immediate, whether we know things as they are or only as they appear, we may find a common field for scientific investigation in the uniformities of coexistence and sequence in mental phenomena, where we may find at least a preliminary and provisional criterion for distinguishing between the normal and abnormal until a better be found, if it be

required. But if we are not seeking the causes of phenomena, we may be satisfied with a means of measuring the expectation of their occurrence and relation to welfare by something else than their explanation. In this view we do not ask for the nature of objects, or perhaps even for their existence, as a test for the normal in the first degree, but for the association of different sensations and the relative frequency of their association as a means of fixing their place in regulating our actions. In other words, our provisional test is the relation of experience to the practical affairs of daily life and immediate adjustment to environment. The limitations of this criterion may be seen in the conclusion. But for practical emergencies, as they are affected by the immediate demands of action, the various associations of sensation and the observed experience of other persons are the main test of what is "real" and what is illusory.

In applying it we shall still correct the judgments of one sense by those of another, but we shall not involve ourselves in the problem of the nature of things. We shall confine ourselves to the relations of phenomena. Our ordinary practical life has to be regulated in the same way under all theories of the world, whether we believe in the existence of matter or spirit, whether in an external world or only in subjective states. Even if vision, for instance, is illusory in its data, we cannot persist in the act of looking steadfastly at what we call the burning sun. Nor can we ignore considering our footsteps in our behavior toward what we appear to see. We have

to at least preserve caution and to see that our expectation of associated experiences has some law for its guidance. If sense-perception generally be illusory, and if we have no criterion to distinguish between the nature of purely subjective and the nature of the objective facts of knowledge, there is a common means of distinguishing between different subjective experiences and of determining their relation to survival in the struggle for existence. This means is suggested by the illustration mentioned above. No matter, for instance, how subjective tactual perception is or may be, we cannot act toward a stone as we would toward a figure behind a mirror. No matter how subjective heat-sensations may be, we cannot treat them as we would after-images or stereoscopic pictures. We have to regulate our conduct to suit certain consequences, or, if not consequences, certain recurrent phenomena and associations that are related to our welfare. Hence it is certain uniform relations between one set of sensations and another, coexistent or sequent, that constitutes the first test of the illusory, the illusory being merely that which can be safely neglected in the immediate adjustment of ordinary conduct. The full meaning of this view will be apparent at the close of the next chapter. For the present we must be content with the general fact that the investigation of the normal and the abnormal in mental phenomena can be carried on without any prior solution of the metaphysical problem, and that the practical test of the distinction between them will be some law of their recurrence and association.

CHAPTER III

INTERPRETING AND ASSOCIATING FUNCTIONS OF THE MIND

Our sensations are not the whole of our mental phenomena. They, our sensations, are the events that occur to us without our direct voluntary effort, and seem to be the effects of something not ourselves. Whether they mean anything more than themselves is the question to be discussed in the present chapter, but they are certainly that type of occurrence or experience which enlists our curiosity and interest most distinctly. They seem to demand some explanation of their occurrence, especially in that they are extremely numerous and variable in each sense-organism, though we do not rely upon this explanation as a measure of their practical value for immediate conduct. They are conceded to be events which do not explain themselves, whether we adopt the realistic or the idealistic theory of their meaning, the one seeking their sole cause outside the subject, and the other partly in the actions or reactions of the subject. In this conception of a cause for them they seem to imply something other than themselves, and, as they represent but one class of mental phenomena instead of the sole type of them, we have to examine the complementary functions of mind that can look at these sensations and assign them a meaning. I do not here

refer to self-consciousness and its numerous data, as they are not of interest in our present problem, though they are important in the final discussion of philosophic questions: but I refer to those mental acts or processes which apply alike to sensations and reflections, as the various states of consciousness may be called. These functions I shall call *judgment*, thus dividing the material of the present problem into Sensations and Judgments, and so reduce the fundamental processes of the mind to two types. Sensations are facts or phenomena which are to be explained. Judgments are the acts of mind explaining them.

Judgment, as here conceived, is the act of mind which interprets and explains facts, as in referring a phenomenon to its cause or to the class to which it belongs. Such judgments are governed by certain principles or laws of thought determining their meaning. These laws are sometimes called necessary assumptions in contradistinction to those assumptions which are not well accredited, or, if well accredited, may require proof. But whatever we call them, they are those conceptions which are necessary to the interpretation and explanation of all phenomena or events. They indicate the nature of the judgments formed in connection with all facts and things with whose occurrence or existence alone we are not satisfied, as when we refer a fact to some antecedent even, or to some cause or ground, and when we refer a thing or fact to that with which it may be classed or from which it may be distinguished. What I have said indicates two general principles regulating

our judgments or constitutes their meaning for our knowledge. They are the *principle of causality or ground*, and the *principle of kind or type*. The one explains things by reference to what produces them, and the other by their classification. The judgments which represent the application of the principle of causality are found in those propositions which present the relation between substance and attribute, and the judgments which represent the application of the principle of kind or type are those propositions which present the relation between genus and species, or between class terms. We may call the first form of these judgments the qualitative or intensive judgment, and the second the quantitative or extensive judgment. But I am not concerned with a technical name that is less clear than their definition, and so leave the adoption of such titles to the reader. It is what we mean by the relation between substance and attribute on the one hand and between genus and species, or class terms, on the other, that is the important fact to keep in mind. The first type of these judgments is illustrated by such propositions as "Glass is transparent," "Wood is hard," or "Fire burns," and the second by such propositions as "Horses are quadrupeds," "Wheat is a food," or "Christianity is a religion." Now absolutely all propositions can be reduced to one or the other of these types of thought, and by the proper form of expression the meaning of one type can be converted into the other, or rather the form of expression may make apparent a meaning latent in the other.

The first judgment that we form on the occasion

of sensation is that it has a cause. Of course, in adult and mature experience we form some judgment of *what* the cause is, but it is probable that our earliest judgments represent very vague and indefinite conceptions of the cause, and, when we ascertain what place the subject has in determining the nature of sensation, we very quickly perceive that *what* the cause may be is not so clear as we thought it was in our earlier and more naïve experience. The utmost that we probably say or think in the early period of life is that sensations have a cause, and that this cause is either without or within the body, extra-organic or intra-organic. I need not here go into any minute or profound study either of the processes by which we do this or of the validity of these judgments. What the nature of things may be, whether mind or matter, both or neither, need not occupy us. Any conclusion that we might adopt regarding these will not affect the fact that our normal sensations are distinguished with practical clearness from the abnormal and are caused by external agencies.

I have just said that these judgments are formed severally upon individual sensations, and when this is the case the conception of what the cause may be is very indefinite. It is little more than the fact that sensations are caused by something, and that their occurrence is not due to chance or spontaneous generation. The knowledge thus acquired is very simple and meagre. Thus, if I have a sensation of color, the judgment of causality formed on the occasion of the experience would be that *something* produced

it. We might be uncertain whether it was ourselves or something else. But we should not think that the sensation occurred without a cause of any kind. We should probably think of the cause in this early stage as something indefinite, and perhaps the impersonal judgment, "It has color," or "It causes this," would be the form which our mental act would take at the time. But not to go into this elaborately, the main point to be illustrated is the fact that each sensation by itself would not give the complex and systematic unity which our mature judgments actually have. They would result in a vast system of judgments without unity or connection, and the world would appear quite different from what it actually does appear in our more complex judgments. Such conceptions as are represented in the terms, "trees," "houses," "animals," "food," "morality," "politics," "religion," etc., would not appear in our thought. We should only have a class of disconnected and simple, instead of complex, things involved in our judgments. How, then, do we get any unity and complexity in our conceptions?

Such conceptions as I have enumerated, namely, "trees," "houses," etc., represent a group of qualities or properties associated with the same subject or cause. Each property corresponds to a particular kind of sensation or effect produced upon the mind. How do we get them together?

The answer to this question will be quite simple and clear. We begin the process of associating these different qualities by having *simultaneous sensations initiated from the same point in space.* If

I find that a sound issues from the same point as my color and tactual sensations, I refer it to the same object or cause, and so it would be with all the sensations and properties that I experience under like conditions. The fact that they occur together and are referable to the same cause, this being due to the unity of time and space for their occurrence, gives me the conception of a unified whole, a single substance or cause for a group of qualities, and I thus have the conception of a single complex object, complex in its numerical attributes, such as "Charter Oak," "Gladstone," "Plato," etc. These are individual groups of qualities which are not duplicated in our experience, and do not require comparison with others in the formation of them.

I see a yellow color and find also a certain taste associated with it and a soft tactual quality. I assign them the same subject and give it a name. I may find other qualities also associated with these, and retain the same name for the subject. If I have never experienced anything like this particular object, the name for it will be that of a singular term, as illustrated in the singular concepts above.

But I do not stop with this process of associating or synthetizing qualities and sensations. This is a comparatively simple and elementary process, and the conceptions which we actually denominate by all but proper names represent an additional act of judgment. Hence the next step, after forming the simple associations, or perhaps better, consociations of separate sensations and qualities in the same subject, is to compare the different objects of experience, and

classify or distinguish them. If we see two objects at the same time and they are essentially alike, we can apply the same term to them, and again, if we see two objects at different times and they have the same essential qualities, we may also apply the same term to them. In the former of these acts no memory is involved; in the latter memory is added to the process. In both there is comparison of one experience or object with another, and they are classified together, if they are essentially the same in nature, and distinguished if they are different in characteristics. Thus, if I find two balls of the same size, color, density, structure, weight, and uses with any other identical properties, I can denominate them by the same name, such as cannon-balls. But if the balls differ in all these qualities, I should have to denominate them by different terms, such as "apples" and "bullets." They may have other similar properties that enable us to call them *matter*, but they will remain distinguished as species nevertheless, while the more general term will be the genus representative of the common properties. This whole process of classification simplifies the use of language and still further unifies experience. All objects of an essentially like character can have common conceptions and terms, and those that essentially differ may have that difference marked in the proper manner, suitable to the needs of practical life.

The principle on which our judgments of this character proceed is what I have called the principle of kind or type. In metaphysical parlance it is called the principle of identity and difference, to

distinguish it from that of causality. Perhaps some would prefer to call it the principle of similarity and diversity. It is, however, well enough understood in traditional parlance as that of identity and difference, which I here denominate for the general understanding as that of kind or type. By it we compare and distinguish objects and systematize our knowledge of the world to a much larger extent than we can by the application of causality alone. We reduce the number of causes in things to a smaller quantity, and ultimately to a single one, if the facts justify it. The process applies to all our conceptions involving class terms, and so represents the unification and systematization of knowledge over the whole complex field of experience.

The two general kinds of judgment which we have been discussing, and which I previously named the intensive and extensive, may be called, for greater clearness, causal and classifying judgments. Causal judgments are those which refer experiences and facts to the agents that produce them. Classifying judgments are those which reduce experiences and facts to specific and generic types. As I have remarked above, the former judgments represent the relation between substance and attribute; the latter that of genus and species, or class terms. These processes represent the whole of our normal activities of thought in the interpretation and explanation of facts, and whatever principles we shall have to appeal to in the study of exceptional facts must be adjustable to these facts in some manner. We in some way get beyond sensations or phenomena in

these processes, and so satisfy our expectation that facts do not occur of themselves, and that they are so related to each other as to give a world of unity and connection. The next step is to see what means we have for distinguishing between normal and abnormal judgments in this field.

There are two important ideas which these fundamental judgments represent. They have been mentioned above, but I recur to them here that I may formulate them for future use when I come to study the claims of supernormal knowledge. They are (1) that the causal judgment goes outside the organism for the explanation of the occurrence of normal sensations, and (2) that the classifying judgments reduce the number of causes to a minimum. We shall have occasion later to use these maxims frequently.

The point, however, at which skepticism begins in regard to the causal judgments of sense is that which represents the doubt about our primitive and naïve perceptions, and it may admit the general principle and raise the doubt about the special application of it. The skeptic may well admit that sensations are caused, but he may wish to ask whether this cause may not be the action of the mind and not an external agent. The fact which may seem to favor his doubts is that which represents sensations and states of consciousness as *our own*. In some way we relate them to ourselves, that is, the mind or organism, and not as events or states of an external object, and with this we may ask whether the subject might not thus be the cause of them, instead of the external

world being the cause. The additional circumstance that suggests this view is the discovery that our sensations are not presentative or representative of objects, but actions or reactions of our minds or brains. This, as we have remarked before, requires us to look at the subject as well as the object, at the organism as well as the external thing, for some explanation of the facts. If, then, we rest satisfied that our minds are the cause of sensations, and not the external world, we have no credentials for extra-organic causes of any kind, and the causal judgment could not be used to guarantee external reality.

I doubt, however, whether any one seriously entertains these assumed difficulties as genuine ones. The question may be put, and however it is answered by the skeptic the normal mind will not be greatly puzzled by it, especially if it is given to the analysis of its conceptions, as this habit will quickly suggest the equivocations in the term cause that give the skeptic the whole apparent force of his query. But, though we see easily enough that the difficulty is not a real one, it does suggest, if it does not make imperative, the study of facts which are held to illustrate and prove the complexity of our mental states and convictions, and the illusions to which we are now and then exposed.

But there are facts which seem to vindicate the judgment of external causality against all suspicion. Some of them have been suggested in the discussion of sense-perception. But I was there discussing the meaning of sensation for practical life and action, without involving it in the problem of causality and

even supposing that it was a wholly subjective affair. Here, however, I am concerned with the additional factor introduced into the problem of knowledge by the judgment of causality, and especially by that of external causality. We may distinguish between values in experiences, and we may determine that type which we have to regard in our actions and expectations without raising the question of causality external or internal. But we do not thereby escape the necessity of reckoning with such causality, especially if the external causal agency be intelligent, human or divine. The test of its existence, therefore, becomes a matter of some importance. Hence we may have to repeat in this new relation some of the points concerned in the last chapter, and in repeating them add others to the list of criteria that may enable us to distinguish between normal and abnormal phenomena.

The first fact vindicative of external causality is the circumstance that we do not voluntarily and directly produce our own sensations. We may produce voluntary movements in our organism, from which sensations follow as physical or other consequences, but we cannot produce any particular sensation directly, at least normally, by a fiat of will. Sensations are purely involuntary affairs and also unconscious affairs in so far as they are not consciously caused. We may be aware of them after they occur, but we are not aware of what sensations are going to occur, and cannot anticipate them until experience has taught us the law of their occurrence, and even this anticipation is in no respect related to

the causal agency of consciousness as a direct influence. Hence we do not produce sensations by thinking of them in any normal manner, or by expecting them. They may be purely subjective affairs, nevertheless, as subliminal creations, but this possibility does not affect their relation to our voluntary and conscious activity. This is not their direct cause, and, as they do not follow any known law of subconscious causation, we have every reason to suppose that the cause is foreign to the subject, at least in all instances which we have ground to believe are normal.

The reply to this would be the comparatively recent fact of science, alluded to above, that there are all sorts of phenomena occurring within the organism that are not externally initiated in any such way as normal sensations are supposed to be. There are involuntary muscular actions that are not traceable to any such correlation with external events as is noticeable with many voluntary actions. There is also the whole field of subliminal mental activities that are neither voluntary nor conscious, and yet they do not seem to be coördinated with any known external stimuli. They are manifest in somnambulism and hypnotic states, in automatic writing and the phenomena of secondary personality, and many facts that exhibit themselves in deliria. These facts suggest that, even though sensations may not be consciously produced by ourselves, they might be produced unconsciously by the organism or that part of ourselves which represents the basis of subliminal acts, sensory or motor. I say suggest, because I am far from

admitting that they are evidence of a subjective origin for sensation normally understood. I have mentioned them only in deference to that skeptical temperament which can often give evidential trouble more than it can influence conviction even on its own side. Of course, if some things are produced subjectively, why may not all of them be? But, while facts, like subliminal actions, may demand that we seek and establish an adequate criterion for the distinction we make between objective and subjective causality, it is another thing for it to treat its queries as implying a totally subjective agency in the phenomena concerned. We might have as good reason for supposing that they are all objectively instigated because some of them are, and that is a position which even the skeptic cannot admit or urge without eliminating the ground of his doubts about the objective. We may have as good evidence of external causality as we have of the internal, though we may have difficulty in applying a criterion to distinguish between them in concrete instances, while not being in doubt about the majority of them.

But the point of defence for the external causal judgment here is that there is no such system in the occurrence of such phenomena supposedly initiated by unconscious activities as we find in normal experiences, at least so-called. There are plenty of systematic mental conceptions so originated, but not sensations, in so far as we are able to test them. Especially there is no such synthetic or associated grouping of different sensations as we find them in the cases where the ordinary judgment holds good.

That is, sensations of touch and hearing do not follow supposed, or even proved, subjective visual experiences, as they should follow them if all were subjective, because that is the law of our supposedly normal sensations. Hence we feel constrained by the systematic way in which our normal sensations occur to refer them to an external source, whatever we may say or think about their being our own, and whatever we admit about the occasional influence of subjective agencies in simulating them. There is no such systematic association of simulated sensations in different senses by subjective causes as we rely upon to test our objective realities.

There is another important fact pointing in the same direction. It is that the vindication of the external causal judgment does not depend upon denying the function of the mind or brain, either to determine the nature of sensation or to originate subconscious states that issue occasionally in abnormal sensations or the simulation of real sensations. All that the notion of external causality requires is that it should be responsible for the *occurrence* of sensations and not for their *nature*. We may grant all that the skeptic may wish to claim about the agency or influence of the mind on the character of sensations. This claim does not carry with it the explanation of the time, regularity, and systematic occurrence and association of different sensations, but only their nature or qualitative character: that is, their non-representative content in relation to the real or supposed external cause. The objective cause is the primary agent in determining whether normal

sensations shall occur at all, and the subject, mind, or organism is the agent that determines their nature, that is, their quality, when they do occur.

These arguments have been discussed on the assumption that we have no other criterion of external causality than the mere regularity of individual sensations unassociated with each other. But in actual experience the test is somewhat different, especially when we wish to know the particular concrete object or cause, and this will be true whether this different test is any more valid or not than the one just indicated. This additional fact is that of testing the judgment formed on the occasion of one sensation by the proper occurrence or concurrence of a sensation in another sensory organism. This is to test the case by a number of associated sensations in different organs, or technically, by synthetically associated experiences. Thus, if we have a visual sensation whose external cause we may suspect as illusory, we may test its objective source by trying to touch the apparent object, or obtain from it experiences of taste, sound, or other sensation. I am not supposing here that every visible object is tangible. There may be visible or audible objects that are not tangible, so far as I know, and I shall not deny their existence, but this is not the condition of our usual experience. Generally we find that any visible reality is also tangible, and we have the right to expect on the basis of this usual experience that tangibility will follow upon visibility. For our normal experience, as we know it usually, objects are a complexus of qualities that

affect different senses, and that is what we usually mean by concrete external realities. Hence, whatever existence may be for merely visual experience, we can test our usual conception of externality only by an appeal to synthetic experience. This is correcting the possible illusion of interpretation in one sense by the action of another, and on the assumption that the probabilities are against mere chance of both senses being deceived in the causal inference. For in every sensory experience involving a possible synthesis of sensations there is the causal inference as well as the causal judgment. The causal judgment merely asserts that the sensation has a cause, or that its cause is external, but it does not assert that the cause is also tactual or audible. It infers or expects this from previous experience of their association or synthesis.

Thus, to illustrate the whole case, if I see an image in a mirror and take it for a real object, as children and savages often do, I may in various ways ascertain whether it represents a reality where it is seen or not. I may try to touch the apparent object, and, failing in this expected result, I come to the conclusion that there is an error of judgment somewhere. I may study the constancy of this image in relation to other facts, and if I find that it moves with the object which the image supposedly represents, I do not attempt to touch it or to test it in that way, perceiving that the phenomenon is not a normally usual one. Or I may try to see it from different points of view, and failing that, I may also conclude that the phenomenon is in some way sub-

jective. It will be the synthetic association of tactual and other sensations, as well as the synthesis of recurrent sensations in the same organ from different points of view and at different times, that will assure the conviction of externality, as usually conceived, where individual and transient experiences will not certify for us. It is important to remark, however, that the illusion in the instance under notice is not regarding the externality of the cause, its external *existence*, but the *locus* of it, its position in space. We find on all examination of such cases that the mistake was in the localization of the object, and not in its external existence. It may be much the same with other experiences. Hence the very reference to such illusions may only confirm, instead of nullify, our ordinary judgments.

It is the failure to secure other sensations than the given one that strengthens the suspicion of error when it is feared, and to the same extent their association or synthesis encourages the belief in objectivity. The casual instead of causal synthesis of illusions would be hard to accept. But the skeptic would have to assume a causal connection between different sensations when he supposes that two or more of them are associated regularly and without a correlative external cause. Otherwise he could not expect any coincidence of the phenomena as he finds them, and anything like a causal nexus in such cases would involve him in the want of a test for illusion itself, since the usual criterion of an illusion is just this absence of causal connection or the properly

associated sensation when the external causal judgment would require it. Let me illustrate.

The savage thinks at first that the image which he sees in a mirror is a real object, where it is apparently situated behind the glass. Perhaps in some cases we may not know of the mirror, and have to discover it by first ascertaining the error of our judgment about the apparent object. The inference of the savage is natural enough, and would be made by any one who had not grown familiar with the phenomenon. But the savage proceeds to test his inference by seeking the object behind the mirror, and, failing to find it, he is more or less assured that there is some illusion. He does not realize his expectations where they would be realized if the proper external object were there as apparently seen, or if there were any causal nexus between the first visual image and the expected tactual sensation. If the object were not there and the occurrence of the appropriate sensations took place, we should have to suppose the causal connection to be between the sensations. But the absence of this sequence indicates that we must seek the causal nexus elsewhere than between the sensations themselves. In my normal experience, as we name the usual order of mental events, I do not find any such invariable synthesis or nexus of sensations as the causal judgment would require. Under one set of conditions I find a given association and under another a totally different association of them. This fact shows that there is no inherent causal relation *per se* between the sensations, and if that causal nexus does not naturally exist be-

tween them, it would be extremely improbable that two or more senses would have so regularly simultaneous illusions about the same apparent object. If this, however, were an actual fact in an occasional instance, it would still be quite improbable that the coincidence would be a constant one. If it were a constant one, we might have evidence of a causal connection which would prevent the discovery of illusion in any case, and certainly, whatever we should call the phenomenon in such a case, it would not be illusion as we now understand it.

Moreover, the very fact that we can recognize subjective agency at all, and clearly distinguish in most cases between it and what we regard as objective or external, is in favor of the belief that some experiences represent a causality not our own, even though we cannot prove the contention, and we only await a suitable criterion for determining this source. This capacity for distinguishing the different types of experience requires us to look for different causes, and sensations of the normal and involuntary class show such a relation to all that we can easily trace to our conscious and unconscious causality that the only natural thing for us to do is to refer their origin, that is, their occasioning cause, to something else than ourselves and so make them incident to extra-organic initiation.

Perhaps the most decisive proof of this extra-organic causality for normal sensations is a certain characteristic difference in them in comparison with such as we believe or can prove to be subjective. The normal sensations have a fixity and regularity

in their associations or occurrence in certain conditions which the subjective do not have in the same conditions. An illusion will not persist so long as a normal sensation, and yields to investigation and experiment when the normal will not be eliminated. A normal sensation will preserve its character and uniformity of occurrence with the change of all conditions but that of its actual cause objectively considered; an illusion is more variable. The least modification of our environment, say as in case of the image in a mirror, will dispel many illusions, when a normal sensation will not undergo any alteration in the same circumstances. Again the illustration of the image in the mirror applies. A real object would be found to respond to experiment, though the place of the observer change, while an illusory sensation would disappear or show certain changes that betrayed its purely subjective character. For instance, again our normal perception of the sun has a fixity and uniformity of relative position with reference to various associated sensations that our after-image of it does not have. We have to be definitely related to a fixed environment in order to have a certain sensation of the sun that even purports to be real, but the after-image can be seen anywhere under the proper conditions. This objective fixity of something in contrast with the subjective caprice and variability of what we discover in illusion is a circumstance of great importance, and it coincides with all the other facts that point to a cause necessarily distinguishable from subjective agency alone. But the conviction of it will not be accomplished by any

offhand methods. It will require the scientific spirit and method to protect judgment from mistakes.

I have not discussed the processes of inference and reasoning. They are in fact forms of judgment, but since they represent an application of such as one either a little different from the simplest causal or classifying judgments or are more complex instances of them, they should receive some notice as interpreting functions of our minds. We may consider inference and reasoning as identical, if we wish so to characterize the inductive and deductive processes as reasoning acts. But as one gives a certitude which the other does not, it is customary with some writers to call the inductive process inference, and the deductive process reasoning. I regard the two as essentially the same psychologically, but as different in the content and certitude of the conviction produced by them. In fact, some writers as readily use inference to describe the deductive reasoning in the conclusion as they would inductive ratiocination. But if the reader will understand the matter better by confining inference to inductive expectations and reasoning to deductive certitude, I shall not object to that usage of the terms. I mean here to speak indifferently of inference in both processes.

In a broad sense inference is reasoning to what we do not see at the time. It may be expectation of future facts or the presence in reality of concealed facts. Thus, in any particular sensation, I may infer that another is possible if tried. If I see a certain yellow color, I may infer that the object

having this color will have a certain taste, say that of an orange. If I see a certain type of cloud, I may infer that it will rain, or if I see dew on the grass regularly after clear nights, I may infer that it is due to the radiation of the earth's heat absorbed during the day. And so on with many similar illustrations. In all of them we are supposing the existence of some fact, present or future, that is not an object of immediate observation or is not a part of the present sensation or experience. I have virtually indicated this conception of it in the instances mentioned to illustrate the process of testing the correctness of the inference for the judgment of external causality. The judgment of causality is most intimately connected with the explanation of the given sensation, and it is only an inference of the existence of another than the given quality in the same cause that suggests the need of certifying the objectivity of meaning in the present sensation. But this process of anticipating experience, of conjecturing the existence of realities not immediately revealed, is the one that lies at the basis of all scientific and philosophic reflection and gives rise to the systems of philosophic and other types of theories taking us far beyond present facts.

But the condition of doing this legitimately is the nature of previous experience. We do not and would not infer to future events or to the concealed presence of facts not actually observed were it not that the association of the inferred fact and the present sensation has been a more or less frequent experience in the past. We have to realize a synthesis or asso-

ciation of certain experiences frequently enough to suggest the probability that the presently unobserved fact will reveal itself at the proper time and under the appropriate circumstances. The various judgments of causality and kind have to be frequent facts of experience, and their associated incidents have to be such a law of that experience that we would have to surrender the unity and uniformity of the world to discredit inferences of expectation. Hence inferential and reasoning processes depend on experience for their justification, and so they have all the liability to mistake and illusion that all anticipations and expectations have. The less frequent the experiences which suggest them, and the less constant a given set of syntheses and associations, the greater the exposure to mistake, and hence the dubious character of those speculative constructions which are based upon small inductions or few data in experience. Here we need especially to be on our guard, as actual experience has first to suggest an inference and to confirm it when suggested. The field of immediate certitude is an exceedingly small one.

We have then these three processes of interpretation and explanation. Two of them, the judgments of causality and of classification, relate facts, the one to a cause and the other to kind or type, to similar or different things. The third anticipates other facts than those immediately present in consciousness. The causal judgment may apply to what is present or what is concealed, and so also the judgment of kind. We may see the causal connection

between two present facts or refer a fact to something not seen, and we may classify or distinguish two present facts or similarly relate one to a fact or facts not present. In both we may include in our view of things much that is beyond the present sensations. In inferences and reasoning we go still farther, and the measure of assurance that we can rightly possess in the act will depend upon the amount of experience and observation that we have in the association of facts and the care with which we have done our work. Or perhaps we may have an illegitimate assurance from the very carelessness with which we have made our observations and neglected the essential for the unessential relations of things. But he who has raised the question about the right connections in facts will have his assurances determined by the insight and care with which he has made his observations of phenomena. Otherwise he will be the victim of all sorts of illusions. The actually observed constancy of phenomena and their association or synthesis, often for a long period of time, is necessary to distinguish a casual from a causal, a contingent from a necessary connection or relation, and many minds rush off into speculative theories of the wildest type just for the lack of that care which distinguishes the scientific temperament, a temperament that may not be characterized so much by doubt and denial as by prudence and suspense of judgment until proper credentials can be secured for its convictions.

I have dwelt upon the problem of illusion and external causality for our sensory experience because

I have wished to emphasize the difficulty of captious assertion about such an agency right in our normal life, especially by the reflective mind. I quite accept the fact that in our ordinary experience we have no trouble in deciding what is normal and objective and what is abnormal and subjective. The very number of our illusory experiences, to say nothing of their intrinsic character, makes them a negligible quantity in our practical life usually; and it is our immediate practical life that is mainly concerned, though a remoter life may be equally concerned in the more careful determination of the relations between the normal and the abnormal, to say nothing of the value attaching to the more scientific and definite knowledge of the abnormal and its relation to all sorts of ethical demands in our social relations to each other. When we come to scientific reflection and the search for an infallible mark of the objective and the subjective, we begin to encounter a certain kind of difficulty, and we find that we have often only been measuring off one illusory certainty against another. The importance of the reflective standard in the study of experience shows itself in the investigation of those abnormal phenomena about which there is no doubt rather than in those of the average normal experience, for it teaches us prudence and care in the classification of those cases which may not require the treatment that rough medical standards would misjudge and maltreat. But no matter how clear the criterion is to the expert physician and psychologist for distinguishing the normal from the abnormal, — and it is not always clear to either

of them, — it is not one that can be made easily apparent to the naïve intellect, and hence skepticism always has an advantage when suggesting caution or doubt about human judgment or the interpretation of experience.

When we come to consider judgments based upon residual phenomena and arguing for extra-organic causes, especially of a certain specific kind, we can appreciate the strength of the skeptical plea for the extent to which subjective influences must teach us prudence and cautiousness. The truth of this will come home to all of us when we are asked to consider the appeal to those extra-organic agencies with which we are not familiar in ordinary life at all and when the defence of them disregards the existence and nature of the abnormal altogether. In normal experience the mere statistical relation between the familiar and the exceptional is a sufficient guide for practical life, since it is a mere inductive question of the chances or probabilities for one or the other type of experience in selecting which shall determine our conduct. But when it comes to the invocation of causes, external or internal, which are not familiar and which do not have any systematic relation to our normal and practical life, it is a matter of some importance that our evidence for exceptional causes should be commensurate in quality and quantity with the extent of the conclusion drawn. Hence the value of knowing the nature and limits of assured judgment in our normal life and the relation of the abnormal to it. The criterion may not be a simple one, but such as it is it must suffice to justify some

measure of prevision in the occurrence or expectation of events, and mark that measure of constancy in the occurrence and association of different phenomena that will place us beyond the casual in the judgment of things. We must have some definite conception of an order not determined by the caprice of our own actions, and representing a more or less fixed relation to an order that conditions our natural development instead of an order which our minds create against the forces upon which we depend for normal growth, mental and physical. We have to be extremely cautious about estimating reality by retrospections and expectations that are not read from the nature of the passing moment. We may be equally deceived by too much attention to the phenomenal movement of the present experience. Hence, between this Scylla and Charybdis, between the past and the future on the one hand, and between both and the present moment on the other, we have to steer through dangerous narrows, and by a judicious combination of memory and verified inferences secure that standard of constancy and change which will measure in proper balance the claims of expectation and doubt.

CHAPTER IV

MEMORY

I have assumed in previous discussions that the functions of memory in our knowledge were sufficiently clear not to need explanation for the purposes of those analyses of elementary processes. In one type of the classifying judgment memory is indispensable as a factor of it, but a technical knowledge of this part which it plays was not necessary for the comprehension of the process concerned. Hence I have postponed all examination of its nature and scope until the present chapter.

In common usage memory is a very comprehensive term, and so comprises all those phenomena which are associated with the preservation, the recall, and the recognition of past experience. It is sometimes used to name the one or the other of these functions, according as the emergency requires it. Sometimes, in the more technical discussions of psychology, it stands only for the fact of recognizing the past after its recall. Probably the reason for this technical limitation of the term is the fact that this recognition is the only thing of which we are directly conscious in our relation to past experience. But however this may be, I mean here to accept its wider common import and so to use the term to include and describe all the mental and possibly other phe-

nomena connected with the retention, the reproduction, and the recognition of past experience. It would only confuse matters in a general discussion to insist upon limiting the import of the term to direct consciousness of the past when recalled, as this would not only require us to deviate fundamentally from general usage, but would also apparently lead to the omission of phenomena quite as important to abnormal, or even to normal, psychology as the more circumscribed fact of recognition.

Memory in this broad sense is the faculty for conserving, recalling, and identifying past experience in the service of judgment. It conditions that act of judgment which compares the past and present and determines the measure of unity and persistence which various phenomena have. But it has also a separate interest for the present work in the nature and range of its capacity for supplying material in various abnormal phenomena of the mind and for its relation to the problems of residual psychology. In our ordinary experience we seem to think it much more limited in its functions and productions than is actually the fact. The reason for this probably is that we disregard, and hence easily forget, that part of its action and reproductions that have no special interest for the chief object of attention. We easily forget what we are not interested in, and hence many things lie in the fringe of consciousness, recalled by memory, which we neglect as without importance to the main thesis of thought. Consequently memory seems to have that limited range expressed by the contents of what is relevant to the present

object of consciousness. But its range of action is much larger, and this fact makes it imperative to examine it with this fact in view, as a means of throwing light on questions that are unnecessarily mysterious to many persons.

As indicated, however, this general meaning is so comprehensive that it does not clearly appear in the term what its several functions are. We must analyze it to find them. Consequently I find it convenient to divide the field ordinarily covered by the term memory into (1) Retention or Conservation, (2) Reproduction or Recall, generally named Association, (3) Representation or Imagination, and (4) Recognition or Identification. Each of these comprises a distinct class of phenomena or functions, though related in all cases to the same fundamental material of experience. I shall take up each of these in its order.

1. *Retention*

Retention does not represent any known act or process of mental agency. It is only a name for the fact that in some way past experience is kept for recall or within the reach of consciousness under the appropriate laws of association. It has an analogy in the persistence of physical impressions on objects, but only an analogy. It is a purely conjectured fact from the circumstance that we can consciously command past experience by recall, and retention is merely a name for the condition of past experience in the interval between its original occurrence and its recall.

How retention takes place we do not know. There are plenty of physiological theories which endeavor to explain it, but they are perfectly futile, owing to our complete ignorance of the manner in which the brain is supposed to behave itself in the recording of experience. Antiquity compared the memory in this respect to a wax tablet or a roll on which was written the thoughts of a writer. Such a roll was folded up and opened for reading. This is a very pretty analogy, but it cannot seriously represent anything more. It is the same with physiological theories representing retention as "impressions" on the brain or its cells. This is only a little more obscure analogy than the ordinary wax tablet instance. But we know absolutely nothing about the manner in which impressions on sense affect the brain. The molecular activity of which we speak so glibly in reference to the brain is purely conjectural. I do not question it as a fact, but we do not know what it is, and all talk about its explanation of retention is only the result of the demand to offer an explanatory theory of the phenomenon instead of confessing our complete ignorance in the case. It is not necessary to question such theories, but to ask for the evidence for them and for the grounds of their explanatory character. I reject them, therefore, not as necessarily false, but as useless, if true, and as insufficiently supported to make them intelligible. I simply prefer to say that I know absolutely nothing about how retention is possible, and that I am content with the fact, in so far as the term describes or names a conjectured circumstance. Did

we know more about what the fact is we might indulge in theoretical explanations, but we are quite as ignorant of what retention is as a fact as we can be about the neural conditions supposed to explain it.

I do not mean by this profession of ignorance, which I wish to extend to all others, physiologists and psychologists alike, that the phenomenon is not explicable by brain facts. I would even go farther and agree that retention must have some relation to neural laws just as consciousness has. But while I grant that retention is as much a brain phenomenon as all other mental facts, I am not impressed by that consideration to admit that I know how it effects such a result. I am merely contending that there is no use to press an explanation that does not explain as we wish the phenomenon to be explained. The reason that we do not like to admit ignorance in such matters is the fact that the admission is interpreted as granting any one the right to put forward any other hypothesis with impunity. This right, however, I do not concede. We have to ask of all hypotheses of explanation, whether physical or mental, physiological or psychological, how the fact supposed can explain the phenomena, or whether we are familiar with such a causal agency in other phenomena than those in mind. When we press theories of explanation we must first know that the conception used is a fact for our experience in some form, and it must present some intelligible and familiar fact suggestive of an intelligible relation between it and the phenomenon to be explained. Otherwise it is a gratuitous assumption, and is advanced to es-

cape the reproach of an ignorance which the common man does not perceive. But there is no legitimate excuse for checking the inclination to abuse that profession of ignorance in theories quite as absurd as that which actually conceals this want of knowledge. In other words, there is no reason for revenging the impunity of other persons by the pretence of knowledge in ourselves. Hence I do not hesitate to say that I think we have no rational explanation of retention as a phenomenon of memory, and I repeat also that I think we do not even know exactly what the fact is which has to be explained.

Nor is it necessary to have any explanation of it. The importance of retention in the scheme of knowledge does not consist in explaining it or in having a theory about it, but in another circumstance associated with it and which affects its relation to the problem of supernormal capacities of the mind. I refer to its *compass*, or the extent to which the mind conserves its original impressions. If we retain in the mind only what we recall, the compass of retention or memory is very small, and is limited to such facts as we actually use in our mental life. But there is evidence that the compass of retention extends far beyond what we actually recall and use. In fact, the probability is that absolutely every impression ever made upon the sensorium is recorded and available for conscious or unconscious recall. Most of them cannot be recalled at will, but they may recur in delirium or abnormal states to show that they are there, though not recognizable. I shall quote instances that go to prove the measure

of this compass. They show such remarkable powers of retention that they would be incredible were they not so common and some other conception of them so necessary, unless this of an unlimited retention be admitted.

The first instance is the classical one mentioned by Sir William Hamilton and quoted from Coleridge's *Literaria Biographia.* "A young woman of four or five and twenty, who could neither read nor write, was seized with a nervous fever; during which, according to the asseverations of all the priests and monks of the neighborhood, she became possessed, and, as it appeared, by a very learned devil. She continued incessantly talking Latin, Greek, and Hebrew, in very pompous tones, and with most distinct enunciation. Sheets full of her ravings were taken down from her own mouth, and were found to consist of sentences, coherent and intelligible each for itself, but with little or no connection with each other. Of the Hebrew, a small portion only could be traced to the Bible, the remainder seemed to be in the Rabbinical dialect." A careful investigation of the case by a physician, who had much difficulty in ascertaining the girl's antecedents, revealed the fact that in another city the girl had been charitably cared for by a Protestant pastor from the time she was nine years old until his death, a few years later. It was also found that this pastor was in the habit "for years of walking up and down a passage of his house into which the kitchen door opened, and of reading to himself with a loud voice, from his favorite books. A considerable number of these were still in the niece's

possession. She stated that he was a very learned man, and a great Hebraist. Among the books were found a collection of Rabbinical writings, together with several of the Greek and Latin fathers; and the physician succeeded in identifying so many passages with those taken down at the young woman's bedside that no doubt could remain in any rational mind concerning the true origin of the impressions made on her nervous system."

Usually we remember what is intelligible to us, but here is an instance of retaining sentences and passages which were wholly unintelligible and which were indirectly heard in the midst of other duties.

Dr. Abercrombie relates a number of cases in which these latent and submerged memories were brought to the surface by a sort of accident, and that showed there is no definite correlation between what is retained and what is recalled. "A man, mentioned by Mr. Abernethy, had been born in France, but had spent the greater part of his life in England, and, for many years, had entirely lost the habit of speaking French. But when under the care of Mr. Abernethy, on account of the effects of an injury of the head, he always spoke French. A similar case occurred in St. Thomas's Hospital, of a man who was in a state of stupor in consequence of an injury of the head. On his partial recovery, he spoke a language which nobody in the hospital understood, but which was soon ascertained to be Welsh. It was then discovered that he had been thirty years absent from Wales, and, before the accident, had entirely forgotten his native language.

On his perfect recovery, he completely forgot his Welsh again, and recovered the English language. A lady mentioned by Dr. Pritchard, when in a state of delirium, spoke a language which nobody about her understood, but which was also discovered to be Welsh. None of her friends could form any conception of the manner in which she had become acquainted with that language; but, after much inquiry, it was discovered that in her childhood she had a nurse, a native of a district on the coast of Brittany, the dialect of which is closely analogous to Welsh. The lady at that time learnt a good deal of this dialect, but had entirely forgotten it for many years before this attack of fever."

Here we have the resurrection of experiences which would have appeared to have been wholly obliterated but for the accident of disease, but which, when recalled as they were, indicate the retention of much that is not normally recallable. The following instance is also narrated by Dr. Abercrombie, but he is unable to give the authority for it. The recall in this case is not due to accident of any kind, but to the associative influence of a place.

"A lady, in the last stage of a chronic disease, was carried from London to a lodging in the country; there her infant daughter was taken to visit her, and, after a short interview, carried back to town. The lady died a few days after, and the daughter grew up without any recollection of her mother till she was of mature age. At this time she happened to be taken into the room in which her mother died, without knowing it to have been so;

she started on entering it, and, when a friend who was along with her asked the cause of her agitation, replied, 'I have a distinct impression of having been in this room before, and that a lady, who lay in that corner, and seemed very ill, leaned over me and wept.'"

Dr. Carpenter, in his "Mental Physiology," mentions a most interesting case similar to that of Dr. Abercrombie in that it was local influences that recalled a long-forgotten incident. Dr. Carpenter stands sponsor for the incident as given him by an acquaintance.

"Several years ago, the Rev. S. Hansard, now rector of Bethnal Green, was doing clerical duty for a time at Hurstmonceaux in Sussex; and while there he one day went over with a party of friends to Pevensey Castle, which he did not remember to have ever previously visited. As he approached the gateway, he became conscious of a very vivid impression of having seen it before; and he 'seemed to himself to see' not only the gateway itself, but donkeys beneath the arch, and people on the top of it. His conviction that he *must* have visited the castle on some former occasion — although he had neither the slightest remembrance of such a visit, nor any knowledge of having ever been in the neighborhood previously to his residence at Hurstmonceaux — made him inquire from his mother if she could throw any light on the matter. She at once informed him that, being in that part of the country when he was about *eighteen months* old, she had gone over with a large party, and had taken him in the

pannier of a donkey; that the elders of the party, having brought lunch with them, had eaten it on the roof of the gateway, where they would have been seen from below, whilst he had been left on the ground with the attendants and donkeys."

I have myself had a somewhat similar experience. I had often recalled a picture of standing in the barn-yard of my home and looking through a shed and corn-crib. But I had never happened to mention the fact until we were building a new barn when I was twenty-three years of age. I began one day at this work to say that I remembered when this shed and crib were built, and mentioned the incidents which I have just indicated above. My father stopped his work and watched me tell the story, and when I had finished, recognizing that I was correct as to the main fact, which was that of seeing the carpenters nailing on the laths, he named the year in which the building took place, and this was when I was but two years old. There had been no opportunity for any similar incident after the date of building the shed.

Of the same type as the incidents given by Dr. Abercrombie are some narrated by Dr. Rush of Philadelphia and quoted by Dr. Carpenter. "An Italian gentleman," says Dr. Rush, "who died of yellow fever in New York, in the beginning of his illness spoke English, in the middle of it French, but on the day of his death only Italian. A Lutheran clergyman of Philadelphia informed Dr. R. that Germans and Swedes, of whom he had a considerable number in his congregation, when near death always

prayed in their native languages, though some of them, he was confident, had not spoken these languages for fifty or sixty years."

Crystal vision often serves as a stimulus in certain cases of peculiar temperament to the resurgence of long-forgotten memories. Miss Goodrich-Freer, known in the *Proceedings* of the Society for Psychical Research as Miss X., has recounted a large number of incidents in which the crystal was the instrument of such recall. They illustrate the latency of the most trivial incidents of experience. I quote the following statements from her own account of them.

"Some friends coolly sent me a letter addressed 'Dr. Henderson' (I do not give the real name), with orders to look for the rest in the crystal. I looked and was rather staggered to read, 'Dr. Henderson, Taunton Gaol.' I could assign no grounds for such a libel, but on consulting a relative as to what Hendersons we had ever known, she remembered that amongst others 'there was a chaplain of that name at Taunton Gaol, but long before your time.' In my pre-crystal days I would have *sworn* that I had never heard of this chaplain."

"I saw in the crystal a pool of blood (as it seemed to me) lying on the pavement at the corner of a terrace close to my home. This suggested nothing to me. Then I remembered that I had passed over that spot in the course of a walk of a few hundred yards home from the circulating library; and that, the street being empty, I had been looking into the books as I walked. Afterwards I found that my

boots and the bottom of my dress were stained with red paint, which I must have walked through unobservingly during the short *trajet* just described. I cannot tell which part of me it was that mistook paint for blood, — whether it was my misinterpretation of the crystal picture, or a mistake in the picture itself."

This is an instance of recalling an unobserved, that is, a consciously unobserved fact, and suggests that even our subliminal sensations may be as effectively recorded as our conscious sensations. The next two instances are remarkable in this same respect.

"I saw in the crystal an intimate friend waving to me from her carriage. I observed that her hair, which had hung down her back when I last saw her, was now put up in young lady fashion. Most certainly I had not consciously seen the carriage, the look of which I knew very well. But next day I called on my friend, was reproached by her for not observing her as she passed, and perceived that she had altered her hair in the way which the crystal had shown."

"It was suggested to me one day last September that I should look into the crystal with the intention of seeing *words*, which had at that time formed no part of my experience. I was immediately rewarded by the sight of what was obviously a newspaper announcement, in the type familiar to all in the first column of the *Times*. It reported the death of a lady, at one time a very frequent visitor in my circle, and very intimate with some of my nearest

friends, an announcement, therefore, which, had I consciously seen it, would have interested me considerably. I related my vision at breakfast, quoting name, date, place, and an allusion to 'a long period of suffering' borne by the deceased lady, and added that I was sure that I had not heard any report of her illness, or even, for some months, any mention of her likely to suggest such an hallucination. I was, however, aware that I had the day before taken up the first sheet of the *Times*, but was interrupted before I had consciously read any announcement of death."

Accepting these incidents as properly reported, and not involving the intromission of elements afterward into the crystal picture, they necessitate the assumption of retaining subliminal impressions as the only alternative to much more remarkable hypotheses. Miss Goodrich-Freer narrates many other similar experiences with the crystal representing the resurrection of lost memories and in some cases of subliminal impressions, but I cannot quote more of them here. Readers may go to her records in the sources named above.

In illustration of this phenomenon of recalling subliminal impressions, I may refer to some experiments of Dr. Boris Sidis. He has found in cases of anæsthesia that impressions not consciously perceived may be made to appear in hallucinations, showing the memory of stimuli not apperceived at the time of their impression. The same experimenter, in a case of secondary personality due to an accident, found the patient's dreams unrecog-

nized in his waking state, but recognized by the subject's parents, who said they were incidents in his earlier life in another and neighboring State. Similar phenomena appear to occur in dreams quite frequently.

Innumerable instances, such as I have quoted, could be supplied to show that retention seems to extend over the whole field of impressions, normal and subconscious. But such as I have indicated suffice to show what the probabilities are for such as happen not to be recalled. The instances quoted show this retention under circumstances so improbable to our ordinary experience that we can hardly question its extension over all impressions, and that once granted, we have a measure of those startling phenomena which present the appearance of an outside source in abnormal and supernormal mental phenomena, and also an explanation of the resourcefulness of subliminal reproductions of the past. I cannot make this matter clear at present, but I refer to it in order to anticipate the use to be made of so capacious a power as retention when facing the more complex phenomena of multiplex personality, and its material resources.

2. *Reproduction*

Retention is an unconscious affair. So also is Reproduction or Association, as it has often been called by psychologists. It is the process by which the past is recalled to consciousness and acts according to certain definite laws. The term "Association" has also the comprehensive meaning of connection

in present consciousness, and for that reason is perhaps not so clear in its import as Reproduction, which better defines the actual process, while "Association" implies present synthesis. But as usage has sanctified the use of the term for Reproduction, I shall not distinguish between them here. The act, however, is one which mediates between retention and recognition, and so is the act by which facts of the past are brought up to present consciousness. There would be no occasion to take any account of it were it not that it represents certain important limitations of the mind in the control and management of experience. These will appear in the explanation of its laws.

A simple illustration of what is meant by reproduction will be found in such examples as the following. I see a friend whom I have not seen for years. At once some incident in our common lives springs into consciousness and may become the subject of conversation and additional reminiscences. I first think of the house in which we met. This recalls the topic of conversation which was, let us say, politics, and this again suggests forms of government, which might suggest the doctrine of Aristotle, and so on indefinitely. We are all familiar with this process, but are not so familiar with the laws which regulate the order of reproduction, and limit it to certain relevant data of memory. These will throw light upon the normal systematization of knowledge and upon the selection of material recalled to suit the situation.

There are certain general characteristics of the

whole process which should be noticed, or if "characteristics" is not the right term, we may say conditions which serve as the basis upon which the several laws rest. They may be enumerated as (1) a quality about present states attracting the past and connecting it with the present, (2) a quality about past experiences making these revivable in a relevant relation, (3) relations of interest and attention between both classes of ideas, and (4) accompaniment of selection and dissociation in regard to certain elements of experience. These conditions are meant to note the fact that only certain types of recollections are orderly revivable in normal experience, and that there are special facts about them that make them so, and suggest the need of discovering the principles on which the process is based and by which it is regulated. I shall proceed to outline these and explain their influence on the normal stream of conscious recollection.

The one general law regulating reproduction or reproductive association has been called the Law of Redintegration by Sir William Hamilton. In our present experience, sensation, judgment, and inference, there is a complex whole before consciousness. Suppose I am looking at a landscape. It consists of a number of points of interest, the hills and valleys, houses, trees, rocks, animal life, streams, etc. The association of these together in the present consciousness I have called a synthesis, and I may also call it integration as indication of the fact that the mind looks at such an experience as a whole, as a collective group of incidents or related facts con-

stituting a single and organic totality. A sound, touch, smell, or other sensation may represent also a more or less complexus of incidents, though perhaps less miscellaneous and less numerous than vision, until after mnemonic association has added to its contents. But a measure of integration is involved in all of them, a complexity that will increase with the added elements of reproduction in later experience. Redintegration then will be the restoration of this whole to consciousness through its recall. Thus, if any part of a past experience comes to consciousness, say the perception of a friend, the whole of the incidents associated with any particular experience involving the presence of that friend will tend to be recalled. Hence I shall define the Law of Redintegration as follows: *Redintegration is the reproductive tendency of the mind to restore the past collective experience in its totality.* Hamilton's formulation of it is: "Those thoughts suggest each other which had previously constituted parts of the same entire or total act of cognition. Now to the same entire or total act belong, as integral or constituent parts, in the first place, those thoughts which arose at the same time, or in immediate consecution; and in the second, those thoughts which are bound up into one by their mutual affinity."

I do not mean by this law that there is any tendency for the whole of the past to be recalled, but only the whole of that part which constituted a separate and individual whole of its own. If any tendency existed for the whole stream of the past to be reproduced, thought would be intolerable. But

it happens that, in the formation of individual wholes in thought, there is an economic tendency of the mind to select those groups of facts which belong together for some reason, whether this association is one of time, place, or interest. The concentration of attention is the selective agency or influence in determining what facts of sensation shall constitute the whole likely to be recalled. What is called the compass of attention is the measure of this integration, and so determines the liabilities of redintegration. By the compass of attention we mean the number of objects which it can distinctly cognize at a time, the definite instant of perception, and without using any memory or movement of attention to increase that compass. The effect of this on what we remember and recall will be seen again. For the present I am interested only in asserting the fact that it limits the total that will naturally be recalled. Attention varies with interest, and interest selects those facts of experience which receive special notice, and so tend to obtain fixity in memory and recall. It serves as the agency for breaking the connection between some part of a present experience and that which is of importance to the mind, either transiently or permanently. The consequence is that interest and attention divide up the complex mass or stream of conscious experiences into classified wholes, according to their relation to the main end of thought and action, and redintegration will tend to resort those which have a bearing upon those ends. Hence there is no special tendency in the normal mind to recall the total mass of events in the stream, but only the

total which was an object of attention or of interest.

The law which is the complement of Redintegration, and which represents this tendency to separate certain experiences from the stream of consciousness that are not needed in the main interests of the mind may be called that of Disintegration or Dissociation. This will require separate treatment, and it is referred to here only for the purpose of recognizing a contrary tendency to that of Redintegration, or perhaps better, a limiting influence on this redintegration, an economic device in mental development for selecting appropriate matter of thought and action.

The Law of Redintegration can be divided into a number of subordinate laws which explain individual associations, and to understand the peculiar tendency of the mind in recalling the past it will be necessary to notice these divisions briefly. The first general division of redintegration is into Primary and Secondary Laws of Association. Each of these has its own subdivisions. The Primary Laws I divide into those of Similarity and Contiguity. The Secondary Laws I divide into Frequency, Intensity, and Interest. I take up each class separately.

The Primary Laws are those which represent the most frequent and natural influences in determining association in our systematic life and consciousness and are embodied, as said, in Similarity and Contiguity. The Law of Similarity is: *Resemblance between mental states or real objects tend to recall or associate the experiences previously had of them.* This similarity, implied in the form of the definition,

takes two types, *subjective* and *objective.* For Objective Similarity the law is: *Objects* that resemble each other tend to be associated in the process of experience. If this resemblance be in essential qualities the process is most intimately connected with scientific classification and the more philosophic views of the world; if it be in accidental qualities, it gives rise to the unsystematic conceptions of unreflective life, and especially in its humorous and witty aspects.

For Subjective Similarity the law is: *Mental states,* intellectual or emotional, resembling each other, tend to be associated, and with them the objects or events that produce them. This law explains the apparently capricious character of many associations when measured by the scientific criterion and objectively essential qualities upon which this criterion depends. It especially explains the association of things and events related to personal interests of the individual.

It is possible to make the law of subjective similarity the universal one in associations based upon resemblances, since similar objects must produce similar mental states and conditions. But as the mind depends more upon the known resemblances in the objects for its associations than upon any known likeness in its sensations or conditions, it is best to distinguish between the influence of objective resemblances on the mind and those subjective resemblances and similarities which have no correlates in the qualities of the object, except the power to produce this effect. Let me illustrate both types of association.

The wildcat would suggest the domestic animal of the same genus, or even the tiger. The buffalo would suggest the ox, the beaver the rat, the mastodon the elephant; the cliffs a mountain, the prairie an ocean, the sun the moon, the Madeleine the Parthenon, the Columbia Library the Pantheon, Napoleon Alexander or Cæsar, etc. The streets and houses of one city may suggest those of another, the mountains of one country those of another, and for each individual certain buildings will suggest certain other buildings, even though the association may not be a common one, as in the examples which I have previously chosen. The points of similarity are not always the same for different observers, and hence all sorts of associations may be excited in one that are not excitable in another by the same objects. Thus to one, Bismarck might suggest Cavour, to another he might suggest Metternich or Richelieu. To one Homer would suggest Vergil, and to another Milton. To one, storm-clouds might suggest mountains, and to another angry power. And so with any comparisons that the reader may choose to select for himself. It is difficult to illustrate this peculiarity of objective similarity in terms appreciable by all persons, because the resemblances remarked are not always the same for every person. Individual differences of interest and taste lead to the recognition of different resembling characteristics as the basis of association. But in many of our associations, perhaps by far the majority, an objective similarity of some kind is the first influence in association, even though other laws coöperate to bring about the same

associated incident. Much, of course, depends upon the point of view from which we are regarding any given experience. One similarity may affect me now in a way that it will not to-morrow or did not yesterday. The similarities in two pictures may involve their association in one mood of mind and their dissociation in another, or, if not dependent on my moods, I may have one interest in a picture to-day and another interest in it the next day. This, of course, is neglecting the ordinary similarities and attending to other characteristics, but it suffices to prevent associations that might otherwise be most natural. But in all cases the resemblances instinctively selected will be those which most interest our temperament. The philosopher and scientist will select one type of quality, the artist another, the moralist another, and the religious mind perhaps still another.

But along with objective similarities the subjective will operate either to supplant the former or to strengthen their influence. By the subjective I mean simply those states of mind or feeling which objects may arouse without having any essential resemblances to the objects thus associated in recall. Thus a rose may suggest to me a certain piece of music; a piece of music may suggest a rose. Another type of music may suggest a religious service. A mountain might suggest Paradise Lost; a poem might suggest a painting; an intense pleasure at a drama might suggest a scene in nature. To illustrate by more trivial matters and absurd associations, the taste of a strawberry might suggest a symphony, a fine-sounding word might suggest a church, the metre of a

poem a dance, the pleasure of wine, as with the old Greek, a long throat to prolong the taste, the beauty of a river the meaning of life, etc. I remember one instance in which the physical pleasure of an afternoon breeze suggested the Falls of the Rhine to me, the emotion being the same in both instances.

There is no end to the caprice in these subjective influences in similarity of feeling excited. They give rise to the strange associations in many instances which strike us as absurd or amusing. Quite as often they represent the subjective usefulness of objects to our lives, and in some instances mark the personal interest and its relation to objects. But it is objective similarity that indicates most distinctly, and perhaps most healthily, our adjustment to environment. We shall see later that any weakness of our emotional reactions may lead to the wrong associations, and thus to the maladjustment of our actions in the physical world. But even in our healthiest conditions their influence on the images recalled is a most striking fact, and it only happens that usually the objective influences either absorb the prominent interest of the mind or subordinate the subjective to their rule, making the unimportant mental interests only indirect objects of consciousness and action.

The Law of Contiguity is: Phenomena that are in some way contiguous to each other, either in space or time, tend to be recalled together. This influence does not involve any similarity of nature or causal agency whatever to stimulate recall. The redintegration is simply that of space and time wholes.

A landscape, a house, a river, a city, a street have a tendency to recall the objects previously remarked in their proximity. Any reproduced memory almost will illustrate this phenomena, and it is too familiar a law to require elaborate illustration. Contiguity in time is not so easily illustrated. But the events of the present hour recall those of the last more easily than those of the day before, with exceptions due to the predominance of other primary and secondary laws. There requires no similarity, subjective or objective, in the events that make temporal contiguity influential in reproduction. The only condition is that they shall constitute the same part of a present total in consciousness that any part of a space total represents in it. Hence the events in England to-day may influence reproduction in my mind more easily than the events of my childhood. This contiguity, however, is most especially noticeable in its subjective form. This means that, whatever the real time in history of any set of events, their association in consciousness at any time tends to have them associated again when any part of them is recalled, as the law of redintegration requires. Events, too, that have no objective association whatever, if temporarily associated in consciousness, tend to be recalled together. I may be reading Roman history and be interrupted by a beggar, only to have Roman history suggested by the next sight of a beggar, or I may be eating oranges at a concert, only to have a concert suggested by eating oranges again. The reader may introspect his own experience for better illustrations. But contiguity

in time and space are perhaps as powerful suggestives as similarity. They account for those associations which represent that part of reminiscent wholes which is not suggested by similarity alone or by secondary laws.

When it comes to defining and explaining the secondary laws, we may perhaps allow them to explain themselves. They are simply the fact that greater frequency in the occurrence of the same experience, whether important or trivial, will give it a tendency to reproduction that it would not otherwise have; that greater intensity of an experience, trivial or not, tends to keep it in consciousness; and greater interest, whatever the object or event, has a like tendency. Frequency is one of the features of habit, whether it is connected with trivial or important matters. It is well illustrated in the automatic habits we adopt, for instance, biting our finger-nails, whistling when we work, twirling our fingers or moving the head in embarrassment. In these cases frequency supplements contiguity in time. Intensity means that the emphasis or intense painfulness or agreeableness of a sensation, emotion, or other mental state so affects its relation to others as to increase its liability to reproduction, as its associates are submerged and left out of notice by the very intensity or relative interest of the one fact. Interest, of course, is a most important influence in reproduction, as it represents that selectiveness which gives some sort of intensity for a given fact while suppressing the relative strength of others. It is probable that interest is the fundamental agency in all reproduc-

tion connected with the main objects of systematic thought and action. It means the concentration of attention and will upon one object or general aim, with which must be associated all the proper events of experience. This strain and stress of consciousness acts as a gravitating force upon all the incidents in the stream of consciousness, and enables association to select the particular law which it will predominantly follow. It is the secret of a good memory, which means that facts can be recalled with reference to a rationally chosen end instead of the capricious influence of various laws not naturally acting in coöperation toward the one end. Interest may have to rely upon similarity and contiguity, and even secondary laws of reproduction for its content, but it serves as the selective principle which organizes the relevant facts of experience while it disregards those which might otherwise intrude themselves into a place where they are irrelevant and unnecessary. Hence it is the power which assigns limitations to the operation of the other laws and makes them subserve a rational end.

It is probably very seldom that any one of these laws acts alone. It requires little observation of one's own experience to see that many reproductions are related to two or more of these laws at the same time; that any one of them might be sufficient to explain many or the most of our recalled experiences. When they coöperate in this result the recall is all the more likely, and, in fact, this is the secret of ready reproduction in all cases. If only one characteristic of the past is recalled, it is more difficult to

recall all of it, to make the redintegration perfect, than it is when two or more of the incidents are reproduced. Any abstraction of a single incident will tend to produce some illusion of memory, and hence our security from error depends in some measure, more or less, upon the amount of redintegration occurring at the first instant of recall, and the more laws coöperating to enrich that recall, the better command we have over our past. Thus, suppose that I recall a conversation with Mr. A.; unless I also recall at the same time the special place at which it occurred I may find on further investigation that it was not A. at all with whom I had the conversation, but B. This is a very frequent mistake of people, and it leads to all sorts of errors of statement and action. We can hardly read an interview in the newspaper on account of the known mistakes of this kind creeping into the story. But if we can recall with it a variety of concomitant or associated circumstances, we can better assure ourselves of the correctness of memory. The test of accuracy in such matters is the extent of the identity in the redintegration, and to obtain this in all its complexity a number of laws must combine to effect the reproduction.

This combination of laws to achieve the same result often gives rise in the psychologist to the recognition of other laws of reproduction, such as Convergent and Divergent Association, and Association by Contrast. But in fact these are but combinations of the simple or primary and secondary laws. I do not require here to enter into any analysis of them. I shall only point out that association by contrast is

a combination of contiguity in time and frequency, with perhaps an element of subjective similarity. If this be true, we do not require to treat it as a separate law, though we might be tempted to do it from the relation of contrast to similarity. But this relation is itself one that suggests a difference which analysis does not support. Contrasted experiences would not be recalled except for their frequent association by contiguity in time and space. The content marks such a difference that we think a new law of association is necessary to explain their reproduction together, and the temptation is great in proportion to our recognition of similarity as fundamental. But when we once admit that similarity is no more fundamental than contiguity, we shall have no difficulty in admitting that contrast is a complex law. It may be raised in abnormal cases into an apparent simple law by the mere habit of noticing this contrast between certain objects, antithesis in things, and then setting it up as a mental interest by which to be controlled. In such cases the law is really one of similarity in a general and abstract quality with a decided difference in content of the more sensory kind.

The importance of reproduction or mnemonic association lies in its relation to Retention and Recognition. The value of retention depends wholly upon the recall of remembered incidents instead of leaving them latent in the mind or brain. Without reproduction the past would produce no recognizable or conscious influence on the present moment of consciousness. We should have nothing but a deposit of experience forever irrecoverable to consciousness

and a present moment which is only the reaction of the mind on present stimulus. The past would not count in the present. It could not be recognized, and if it produced any effect at all on the contents of the present it would only be that influence which would represent the actual but not recognized presence of data, the momentum of past mental states, which would not be distinguished from the reaction of the mind on the existing stimulus. This undoubtedly occurs in all of us to some extent, and possibly to a larger extent than we are at all aware of. But it serves no special purpose in our conscious life unless it is recognizable as the past. It is the distinction between the present and the past that enables us to determine the order of nature which is to command our respect. In fact, the past would have no meaning for us whatever, and would not even be discoverable in its unconscious influence but for its reproduction in the present, to some extent at least, and hence the measure of our knowledge of things and of our ethical adjustment to them will be the extent of our conscious recognition of a reproduced past. Unconscious reproduction, that is, the unconscious influence of the past on the present, or perhaps better still, the unrecognizable influence of the past on the present, would be well enough in a world that is changeless, but in a world where change is the law of many things, it is important to have a measure of both the permanent and the transient in existence, as our actions will alter to suit this evolutionary process.

I have here been anticipating, in a measure, the

function of recognition. But I did so to indicate what place reproduction of the past for present consciousness has in the ethical economy of life. Reproduction is, in fact, a wholly unconscious act, and we are not aware of it as a fact until we recognize the present content of consciousness as having at least some part of the past in it. The reproduction would otherwise be, if it occurred at all, only the latent influence of the present, which I have just said actually occurs at times. The function of primary importance after reproduction is reeognition.

If retention were a much more limited eapacity of the mind, less stress or importance could be plaeed on the working of reproduction, as, no matter how perfect its laws and action, the effect on present consciousness would be limited by the extent of retention. But when we have reason to believe that retention is absolute, that the mind or brain retains absolutely every impression it ever had, whether subliminal or supraliminal, unconscious or conseious, the whole responsibility for the utility of the past to the present will rest on the extent of its reproductibility and recognizability. If reproduetion or association is good or can be educated up to the needs of the mind's life, the past will have some place in the present commensurate with the soul's capaeity for retention. Otherwise the mental development will be proportionally defective. But in any case reproduction is the intermediate influence aeting between retention and reeognition, and its utility will be proportioned to that normal action which indicates the proper adjustment of the past to the present.

3. *Imagination*

I have called the Imagination by the name of Representation in order to indicate thereby, perhaps in an etymological sense, the relation of its functions to the original presentations of sense or intellection. With many the term means a constructive faculty of the mind, and hence its power to create certain ideas or ideals. But this import of the term loses sight of its real relation to past experience, though it does indicate one aspect of the mind in what is called the productive imagination. Representation distinctly expresses its relation to the past and involves much the same function as the ordinary conception of the term imagination. I define Representation, therefore, as the act of *re-imaging* the past experience or reconstructing it in new forms. This conception of it describes two forms of it, the merely reproductive imagination and the productive or creative imagination. The reproductive imagination simply pictures or repictures the past as it occurred in sensation, and is the consequence of recall. The productive imagination modifies past experience, taking its forms, and creates structures of thought out of the materials of the past.

But in both forms the principal interest is in the nature of its activity and in its relation to the sensory experiences which originated its data. The question for the psychologist is primarily the manner of its action and not its material content. The literary man may be interested in its education and use for practical life, but in this discussion of it

we shall discard all questions of this kind, and concern ourselves with the relation of imagination to the problems of normal and abnormal psychology, and especially the latter, where we have to consider the relation of imagination to illusions and hallucinations. We shall find in discussing these phenomena that they more or less appear to represent real objects, and the question is whether the imagination plays any part in their production.

Whenever a past experience is recalled clearly we have what is termed a "memory picture" of it. This means that our minds represent to themselves the past in simulacra or like forms to those which were originally experienced. In vision we have a distinct picture before the mind's eye of what we have seen. In touch, hearing, taste, and smell, in varying degrees of clearness, we imagine or picture the past. The question is whether these pictures or images, or remembered forms, involve any of the sensory functions in their production. In most of us, I conceive, the memory picture can be easily distinguished from the real sensations from which they come. There is no judgment or illusion of reality in them. If I remember or imagine the mountain or valley that I have seen, I do not *see* it before me, in any proper sense of the term "see," but I think of it in its place, though I imagine or picture in the mind the form and appearance of it as it was seen in reality; but I do not in any way mistake what I thus picture for an object now presented to me, as I should do in an illusion or hallucination. But in spite of this we often talk of a "vivid imagina-

tion" as if things might thus be pictured as real. It will require very careful investigation in such cases to assure ourselves that a "vivid imagination" represents its objects as apparent realities. I have not yet found it evident in any cases of the perfectly normal type, and we may question whether the abnormal types, really or apparently so representing them, are instances of imagination. It would require some care to determine this, and we cannot assume it from the language employed to describe the experience, unless evidence can be produced that it actually means what it seems to mean. I myself have certainly never found any *real* resemblance between a sensation and a product of the imagination in my normal state, and any uniformity of difference between the normal and the abnormal state in this respect would throw doubts upon the extension of imagination to explain illusion and hallucination, and upon the simulation of reality by imagination in the normal state. Even the consciousness of reality would not prove it to us unless we ourselves had that consciousness and could compare it with reality. The testimony of others would not decide it unless they were familiar with psychological criteria, and I certainly do not find in my experience the slightest reason or evidence to believe that imagination can produce sensory states in imitation of reality, though we recognize the simulacrum of it in memory pictures. A fit of absent-mindedness or abstraction, involving such concentration of thought as to obscure the consciousness of other and indirect objects in the field, may make us act as if we were contem-

plating reality in our memory picture, and we may *think* that it is real, while we do not have the *sensation* of apparent reality. Hence it will be difficult to prove that imagination actually reproduces sensory reactions so like the real as to be taken for them.

If we can appeal to hypnotic phenomena and dreams for support, we may find there facts tending to show this very capacity of imagination, if we can rightly call the result of suggestion in one case and dreaming in the other as productions of the imagination. But this is just the question, though the resemblance to imagination in some respects at least is undoubted. It is certain that a semblance of reality is found in hypnotic suggestions and the pictures they create in the mind. I saw one instance in which the subject remembered, after hypnosis was removed, the images which had been suggested in the hypnotic state, and refused, because of their frightful character, to allow rehypnosis. He described the things he had seen, wild animals and the like. He indicated that they had seemed real to him, and the alarm which he had felt during the hypnosis was carried onward into the waking state, though perfectly normal in this. I remember also two dreams of my own in which I awakened while the dream was going on, and its images remained some moments during my waking state so that I could introspect them. They seemed exactly like real objects, and one of them so real that I could not think where I was in fact, though knowing that it was a dream apparition. Dr. Boris Sidis calls attention to an experiment of his own in which he suggested

to a patient under hypnosis that he could see his hand, which was placed behind a screen, and the man compared what he saw with the other hand, which was not behind the screen. He remarked that one hand seemed larger than the other, and said he could not otherwise distinguish between them when he was asked to do so. I think that the general conviction about our dreams is that the images are like reality and more distinct and "real" than memory pictures of the normal state. It may be that the cutting off of our ordinary introspective action in our dreams and of their comparison with present experiences with their associates affects the sense of reality, but there is such a uniformity of experience in this matter, where we are not nearly enough awake to make the comparison mentioned, as to favor the idea that the dream state imitates sensory states very perfectly. If, then, we can use dreams and hypnotic states as evidence of tendencies in the normal imagination, we may well suppose that it represents at least incipient sensory states, and it may be that instances occur in which this incipiency borders on the production of a real sensation subjectively considered.

The fact which suggests the imitation of reality in the functions of imagination is the admitted character of the memory picture, and in our theory of brain centres and activities it would be very natural to expect that the recurrence of the past in memory would in a measure excite the same functions. But in our normal life it would be important that these resurrections should not be mistaken for reality, and this circumstance strengthens the suspicion that,

normally, imagination does not reproduce the sensory action in any distinct simulation of reality. Though this be the case, however, it might in various situations act abnormally, and so tend to arouse sensory action. I have in mind to illustrate this a frequent experience of my own. If I think of some possible danger to myself, and allow my mind a sort of absent-minded tendency and without the purpose of effecting the result which does happen, I can often feel a distinct tactual pain, which represents the actual pain I would experience if the accident imagined actually occurred. I remember, too, once seeing a boy knocked down with a brick, and the incident so angered me that for many years afterward, when I would think of the incident intently and in a fit of abstraction I could almost feel the sensation in my temples of being struck. The thought would instigate muscular contortions which I would discover after they occurred. Whether similar phenomena take place in intense imaginative experience, suggestive or otherwise, I do not know, but they may, and, if they do, we can understand how illusion and hallucination may occur in abnormal conditions. But any assumption of such a tendency involves the idea that mere thoughts or remembered states of mind can excite sensory centres in the same way as external stimuli, and while this seems to be the case in abnormal conditions, it is not so certain that it characterizes the normal. But there may be in the various types of imagination, or degrees of it in different individuals, the tendency to exhibit phenomena that suggest the possible simulation of sensations by the imagination.

But it is difficult to prove, and when it is proved we may find the instances so infrequent that we may classify them with the abnormal. It is probable that a statistical inquiry would tend to discount the assumption of real simulation.

4. *Recognition*

All the previous phenomena of memory, Retention, Reproduction, and Imagination, are unconscious acts. They perform their work before recognition can take place, and in fact their very existence beyond the introspection of the mind is inferred from the results as they appear in recognition. Recognition is simply the conscious side of memory, the *re*cognition of what is cognition in the original case, and it marks *the sense of past time* in the experience as the distinguishing characteristic of the phenomenon. That is to say, recognition is the consciousness that the recalled incident belongs to the past and so sets the phenomenon off from a present sensation. How it occurs and what its conditions are we do not know. It is an unique act of mind, quite as unanalyzable as any other consciousness, and is the crowning act of memory. The act is of the nature of perception, and so is subject to similar illusions or errors. This is its main interest in the problem before us. How it is possible, and what the activities of the brain may be that determine it, I do not care or know. But we do know that it is the one act which makes possible the use of the past when recalled. But for this recognition, reproduction of the past would have no influence on conscious life. No

doubt it is just the distinction between the produet of the imagination and the present sensation that helps to distinguish between past and present, though this distinetion is probably aided by other factors in the phenomena, such as imperfect redintegration. But it is the liability to illusion in reeognition, due probably in most eases to this imperfect redintegration, that makes it important for the study of abnormal cases. This will appear in later diseussions. In the meantime we have only to observe that the fundamental feature of the act is its pereeption of the identity of a past event, its relative localization in the redintegrated whole or in the stream of experienee. The judgment of recognition is this identification and localization, and it will be aeeurate or illusory in proportion to the eompleteness of redintegration. Reeognition may not be mistaken in what it does perceive as past, but it may mistake either the locus of that past or the totality of it. The part whieh it recognizes may be a real part of the past experience which it mistakes, but the other asso-eiated facts may not be any part of it, and whether illusions of this sort occur or not will depend upon the extent of redintegration. This will be apparent in the study of illusions of memory. For the present I merely remark the eondition of its aecuracy in the judgment of the past.

Let me summarize. In order to reach the act of reeognition the mind has to have the preeeding steps of retention, reproduetion, and representation or imagination. Recognition is the one function by whieh we appropriate eousciously the past experienee.

All the others are unconscious and uneducible directly. Whatever influence the mind can have over their action must be the result of conscious interest and habit. Retention is probably perfect, and hence requires no aid in the exercise of its functions. It is like a mechanical register, and does its work without the need of education. But owing to the need of selection from the past in what is recalled there must be limitation to the function of reproduction. Some adjustment of its functions to the special wants of the mind at the moment is imperative, and this imposes a law of economy on association. With the alteration of human interests from moment to moment, and in the various emergencies of life, there must go a corresponding adjustability of association, and this involves exposure to all sorts of incoördination in recall, especially when any change of association is required against the law of frequency or habit. The errors in recognition will depend for prevention on the right adjustment of association to the needs of the present consciousness, and hence the value of educating reproduction. All the importance of conscious regulation of life depends on the extent to which the recognition of the past is accurate and relevant, and that accuracy and relevancy will depend upon the quality and quantity of redintegration. Interest and attention are more or less necessary to the quality of what is recalled, and the development of complexity in association is necessary to its quantity. The coöperation of these influences produces the maximum of conscious appropriation of experience and the healthy action of the

mind and will. At the basis of these and the preservation of the normal life is interest and attention. Any relaxation of these, leaves the mind at the mercy of capricious associations and the irregularities of the abnormal subject.

CHAPTER V

DISSOCIATION AND OBLIVISCENCE

Dissociation and obliviscence are the complement of memory. They represent the retirement of incidents in past experience from the command of association and reproduction. Dissociation is a function quite as important to the normal mind as association, though it is also the function that so clearly marks the abnormal mind in its action. But it is a law of consciousness as distinct and as deeply ingrained in its fibre as its complement, redintegration. At the same time it is a function of the normal and abnormal life alike, and is distinguished in them by the manner of its operation. We shall examine this feature of it later. For the present it suffices to remark its complementary nature with association and its occurrence in both forms of the life of consciousness. Redintegration builds together the phenomena of experience, and but for certain limitations would cement all of them into the same compact whole. Dissociation tends to separate one set of experiences from others and to moderate the tendencies of redintegration. It drops those elements of experience which are irrelevant to either the present content of consciousness or the general stream as determined by persistency of aim. In this way it serves as an eco-

nomic principle in mental life. Certain influences may give it such power as to almost wholly disintegrate any given facts from the place they should have in consciousness. Let us examine both processes, redintegration briefly, in order to see more clearly how dissociation acts upon its tendencies.

I have said that redintegration tends to restore the whole of any given past experience when a part of it is restored. The amount recalled will depend much upon the mental development of the individual, and upon the particular mental state in which he is at the time. Suppose I meet a friend after a long absence, I naturally think of the last time I saw him, his surroundings, his occupation, his books or his pleasures, the kindness he did me, and the thousand little things making our common life at the time we were previously together. But all this will depend somewhat upon my state of mind. If I am busily occupied I may only exchange greetings and a word or two about the past. The present state of consciousness, its stress and strain, its interests and attention, will check the recall of many things that require diversion from the main pursuit of the mind at the time, and at least a momentary forgetfulness of this, and redintegration does not do the work it would do if consciousness had relaxed its attention to the main idea. There are two types of the present consciousness. The first is its day-dreaming condition, when it has relaxed the strain of work and allows the stream of thought and sensation to flow on unhindered by any voluntary restraints, and gives it over to the untrammelled laws of association

in all their capricious action. The amount of integration here will depend upon the movement of mental interest. If this is slow more will be recalled; if it is rapid less will be recalled. Even here the effect of habit and interest on the subconscious states will have their influence on what is recalled, and tend to exclude what had been buried by irrelevance to conscious interest and attention. The second type of present consciousness is that which always has the content and coloring of the main interest of the individual's life. It is not a mere "moment consciousness," but is in addition the state constituted by what the will has made a constant object of pursuit, and so determined the law of association that will act and the content of experience on which that law will act. This state is a consistent stream characterized by one idea, about which gravitates the relevant of the past, while the former type has no single principle of gravitation, and is the consciousness that most easily represents the restful pleasures of life.

Both types use the same laws of association, but they use them in a different manner and with a different content. The one is more selective than the other, and tends to neglect all factors of experience that have no special relation to the main idea. The other has no reference to a main idea, but to whatever may casually recur to consciousness.

It is in this selective tendency, imposed on the mind by interest and attention, that the process of dissociation begins. We choose a certain end to realize, say the study of art, the pursuit of science, success

in business, the career of a statesman, or other ambitious aim, and the choice will sharpen association as much as it does present perception and observation. They determine the one attraction for the gravitation of ideas, and those irrelevant to the main purpose soon cease to be recalled, if they recur at all. Just in proportion to their uselessness they drop into oblivion and are lost to sight, unless they turn up by accident in delirium or disease. The assimilation is for those experiences which bear upon the object of interest, and dissimilation applies to all others. Suppose my object to be science. This assumes some measure of maturity. I have some conception of the facts which I wish to see and appropriate. I am on the alert for them, and, as they occur relevant to my pursuit, I note them more distinctly and they recur more easily to association. But all that has no pertinence for my scientific end is left to perish in obliviscence. It is dissociated from the main group of facts related to my primary interest, and the mind coördinates and organizes that experience which is collectively concerned with its object. The dissociation of irrelevant facts begins the process of obliviscence which may result in amnesia of them, that is, such obliviscence that they cannot be recalled when needed, or recognized if accident should happen to bring them to consciousness. Thousands of my daily experiences thus are relegated to unused recesses of mind because they have no important place in my main interest. I do not, or may not, connect the objects on my desk with my scientific theories, nor my pleasure in eating my meals, nor

my scattered thoughts in my walks nor any of the little passing objects of irrelevant interest. They are dropped out of attention and relation to the great facts connected with the idea determining the main stream of consciousness. Normal amnesia or forgetfulness is thus a healthy act, and it is only in the dissociation which buries the needful that we discover initial disturbances to normal action. But in ordinary life this dissociation is only the sign of economic mental processes and systematizing tendencies of thought and investigation.

Dissociation is greatly encouraged if it is not produced, by reverie and abstraction. These are mental states of very great concentration, and prevent what we may call the synthetic consciousness, the power and habit of mind in which we take note of its complex incidents. Thus, in looking at a landscape, I may observe all its incidents and characteristics, but if I take an abstract state of mind toward it I may neglect absolutely everything in it but the one feature attracting my attention. There are types of mind to whom this reverie or abstraction becomes so narrowing that the commonest incidents in the field of sensation are neglected. I may be thinking of a mathematical problem, and be run over by a vehicle. I may be so absorbed in my thoughts that I do not hear what is said to me, or what is said does not immediately displace attention. The indirect field of consciousness is full of neglected incidents whenever there is any concentration of mind, and the deeper the concentration the more important the facts dissociated and neglected. When

this indirect field makes no impression on the occupied consciousness, it lapses into complete forgetfulness for any future recognition, even though it be recalled and become a part of any present consciousness. In this case it will appear as a new fact and not as one previously known. The reverie and abstraction begin the segregation of elements that might otherwise enrich the general content of consciousness. The cleavage produced by reverie and abstraction between the idea that has seized consciousness and what is in the indirect field varies in an indeterminate way. It may involve so distinct a separation that no future association is possible, or it may be so narrow as to linger in the field as an annoyance until recognized. But in all the various stages and degrees of it, the dissociation marks a tendency quite as natural to the mind as association, and shows forces that may develop into complete obliviscence.

Reverie and abstraction are a type of fixed ideas, though they may represent a transient and normal form of them. They are related to the typical fixed idea because they result in that exclusion of associated and proximate experiences which would indicate a fuller adjustment to one's environment. The consequence is that the healthiest condition of consciousness is that which admits to its ken as many of the elements of experience as possible. We are constantly beset by sensory stimuli from all quarters of our immediate and remote environment, and the more of them that receive our attention the more healthily adjusted we are to that environment. But

there are differences of value in various stimuli, and some can rightly be ignored and those of interest to our ends selected. If I am walking east, I do not have to adjust my movements to objects west of me; if I am picking fruit from a tree, I do not have to reckon with the noise of a passing train, though if I am talking with my neighbor I do have to reckon with it. Our adjustments must reckon with some elements of experience, though they can neglect others, and the healthy nature is the one which can select intelligently the stimuli and experiences which are to be appreciated and those which are to be depreciated. These will vary with the object which the mind has before itself. Reverie and abstraction may divert attention from necessary influences. This, however, will depend upon the general balance of the individual's nature, and there is no hard and fast rule for determining the right habit in this matter. What we wish to note here is the fact that these conditions of concentrated attention and absorption in one idea or stimulus, to the entire neglect of others, can be judiciously permitted only when there are no natural tendencies to fixed ideas. It is out of exclusive absorption in one experience that the crankisms of the world and certain forms of insanity arise. Excessive reverie and abstraction must lead to these when other interests do not come in to give flexibility to our characters.

Distraction is the opposite vice. It consists in excessive submission to stimuli about us and to memories capriciously recalled, and the failure to make selection from them of some one or more for a per-

sistent interest of the mind. The man who is attracted hither and thither by every wind of circumstance and temptation, who has no selected interest to determine the pursuit of some definite end and the neglect of other influences about him, is at the mercy of every sensation he experiences and every idea that caprice in reproduction will instigate. In this condition every idea and every sensation have equal value. Between distraction and abstraction, between diversion and reverie of the extreme types, lies the mean of healthy mental action. Concentration will not tend to abnormally fixed ideas if it is attended, or if at any suitable moment it can be attended, by the appropriate distraction. This means that we cannot healthily lose sight of the complexity of our lives. We may well choose one end to emphasize, but other ends should not be neglected if they have any relation at all to the main suit. The stress and strain of too much fixed interest and attention only wears out the mind, while it leaves aspects of its nature undeveloped. Consequently a measure of distraction is necessary as the corrective of a one-sided development. It seems that our best estate is in the mediation of two opposite tendencies, a peculiarity of the development of all complex organisms. Either extreme involves the abnormal, and in distraction and abstraction we find types of mental temperament and action that enable us in the normal life to detect the essential forces at work in producing the abnormal.

Let me summarize. We have in any stream of sensations and memories a constant gravitation of the

mind toward some of them away from others, and in proportion as this is intense and selective with reference to a main interest, we have the synthetic association and cohesion of some and the dissociation of others. First we neglect some elements of the complex experience, and they are not so easily recalled. Then we begin to neglect some of the incidents in recall until only the most important are left for our attention. If any interest in life changes the importance of all the facts that were once at ready disposal, they retire into oblivion and become completely dissociated from our normal mental life. Concentration selects and gives cohesion to appropriate incidents, and distraction scatters and weakens accomplishment. But in the normal action association and dissociation are balanced with reference to the healthy development of the individual, and we can seek only in the abnormal those cases which represent the isolated action of each influence.

Dissociation is especially characteristic of the abnormal life. It is not limited to mere obliviscence or suppression from memory of the material of retention. It is not exclusively a defect of reproduction or a separation of mnemonic incidents from their appropriate place in the stream of experience. It also shows itself in the very field of sensation, as possibly we may ultimately ascertain that distraction and abstraction, supposedly mental conditions only, are definitely correlated with sensory peculiarities. It is in abnormal sensations, or rather in the absence of them, that we discover the first traces of the tendency to mental dissociation, and some very remark-

able psychological phenomena are apparent in them.

The first and simplest illustration of this dissociation in sensation is in the phenomenon which shows a limitation of the field of vision. It is very frequent in hysterical cases. It means that a part of the retina appears to be insensible, as objects throwing their image on this apparently insensible point are not consciously perceived. They are apparently non-existent for vision. The amount of the retina thus showing apparent insensibility varies with the patients and often in the same patient with different conditions of the mind and functional action. The phenomenon is determined by an instrument called the perimeter. It measures the sensitive field and determines its relation to the known visual sensorium in normal cases. Usually, that is, the normal eye perceives objects far in the indirect field. We can see almost at right angles to the point in the central field. But in cases of limitation of this field, we may not see one-half of the field. We may see no farther than thirty or fifty degrees from the median plane, which is the central point. But the chief matter of interest is that experiments have shown that the subject may subconsciously perceive objects that are not consciously perceived at all. It is found in hypnosis of these cases that the impressions not consciously noticed in the normal state are remembered, which shows that the function of the retina is normal, but that the sensation on the apparently insensible part of it is dissociated from the synthetic grasp of the normal condition, and taken

account of only by the subliminal activities. The same phenomenon has been remarked in the various anæsthesias of touch. Sometimes this anæsthesia is only partial. The hands or the feet or special loci of the body are anæsthetic, that is, apparently insensible to tactual objects. The whole surface of the tactual periphery may be thus affected. I saw a case of this kind in one instance. But it is found, in some cases at least, that the stimulus is subconsciously perceived and understood, as in the limitation of the field of vision. All that has occurred has been the dissociation of some tactual sensations from others or all the tactual sensations from those of the other senses.

This sensory dissociation or disintegration is the precursor or the analogue of the same process in our memories, where the attraction between ideas and experiences is not sufficient to synthetize them or to reproduce them for association and synthesis. It tends to place the past beyond recall, and may be occasioned in various ways. It may be the result of persistent ideas, of concentrated interest, or of accident and disease. I shall enumerate a number of incidents of it.

Take a case reported from the Salpêtrière. "The patient is nineteen years old. She came to the hospital on the 5th of June, 1894, and was suffering from disturbances of memory. Examination revealed the following symptoms: Total anæsthesia of the skin and of the mucous membranes, limitation of the field of vision, disturbances of the color sense. As to the disturbances of memory, the patient lost all

reminiscences for all that she had lived through since the 26th of May, 1894. Patient remembers, however, that she has had a violent emotion on that day; a gendarme came to her and served her official summons. From this point of time she remembers nothing at all. She lost all capacity for synthetizing new experiences in her narrowed moment of self-consciousness. Now, when the patient's eyes and ears were closed, she rapidly fell into a sleeplike state; it was not the normal sleep; it was rather a somnambulic state. In this state the lost memories and sensibilities returned."

The celebrated Ansel Bourne case, reported to the Society for Psychical Research, by Dr. Richard Hodgson, affords a most interesting case of dissociation, and that of the present from the past life, or perhaps better, the past from the present. This man disappeared from his home and was given up for lost. Six weeks later he turned up in his normal state in a distant town, and not knowing how he had gotten there. In the meantime he had been in a somnambulic state, not recognizable by any one with whom he came into contact, and was keeping a junk-shop in this town, while his occupation previously had been that of a minister. When he awakened from his abnormal state he did not know where he was, and his actions aroused the solicitude of the landlady with whom he was boarding. A physician was called, and this individual was on the point of sending him to the insane asylum, when it was suggested that he act on the statements of the patient that he had come from a certain place in another

State, naming it. A telegram in accordance with these directions brought a nephew to recognize his uncle. There was no memory of the normal life in this somnambulic state, and in the somnambulic state no memory of the normal. Persuaded by Prof. James and Dr. Hodgson to try hypnosis, he yielded, and the result was a complete and detailed account of what had happened to the man during these six weeks. The facts were verified by independent inquiry. The dissociation of one life from the other was complete in all but a few fragmentary incidents.

I have just received an instance from a correspondent who narrates his own experience. He had an attack of typhoid fever. One day he became lucid enough to recognize two friends taking notes of his talk, but he did not know what the talk was. It turned out that he had recited pages of the Cid, the first chapter of the New Testament in Greek, and the dogma of papal infallibility in Latin. When he recovered he could not repeat any of them. But in his earlier days he had been very fond of the Cid and had read the Greek Testament.

Dr. Abererombie relates a case in which a surgeon who had met with an accident gave minute directions for his own treatment, but was found to have lost all remembrance of his wife and children. Sir Walter Scott wrote one of his novels during recovery from illness, and forgot all about it as soon as he recovered. Dr. Carpenter tells a case in which a minister repeated a service on a following Sunday which he had performed on the previous Sunday, and re-

membered nothing about the first service. I quote the account.

"A dissenting minister, apparently in perfectly sound health, went through an entire pulpit service on a certain Sunday morning with the most perfect consistency, — his choice of hymns and lessons, and his *extempore* prayer, being all related to the subject of his sermon. On the following Sunday morning, he went through the introductory part of the service in precisely the same manner, — giving out the same hymns, reading the same lessons and directing his *extempore* prayer in the same channel. He then gave out the same text, and preached the very same sermon as he had done on the previous Sunday. When he came down from the pulpit, it was found that he had not the smallest remembranee of having gone through precisely the same service on the previous Sunday; and when he was assured of it, he felt considerable uneasiness lest his lapse of memory should indicate some impending attack of brain disease. None such, however, supervened; and no *rationale* can be given of this curious occurrence, the subject of it not being liable to fits of 'absence of mind,' and not having had his thoughts engrossed at the time by any other special preoccupation."

Dr. Carpenter mentions another instance in which the memory of words was so disturbed that when the patient called on a friend he asked the son how his *wife* was, meaning his *mother*. "About the same time, he told a friend that 'he had had his umbrella washed,' the meaning of which was gradually discovered to be that he had had his hair cut." A

clergyman confused "brother" and "sister" and "gospel" and "epistle." The resemblances in these cases were associated and the differences dissociated. In one it was the relationship which was the same, in the other the meaning, and in both the phonetic element was dissociated.

Dr. Boris Sidis reports a most remarkable case of temporarily lapsed personality, which had such a careful investigation by himself and a colleague that it will certainly become classic. It is called the Hanna case. Mr. Hanna was a clergyman. While returning home on horseback from town, he attempted to alight, lost his footing, and fell to the ground head foremost. He was picked up unconscious. He lay in this state for two hours. He showed no signs of recovering consciousness, and heroic means were adopted to restore him to consciousness. "Finally he opened his eyes, looked around, moved his arm, then sat upright in bed, arose, reached toward one of the physicians and attempted to push him." A struggle followed, and he was finally strapped to the bed. At the suggestion of a stranger the straps were removed, and the patient remained quiet, but showed that he did not know where he was or what the meaning of words was. It soon became apparent that he had completely lost all his knowledge and personal identity. He was in the mental condition of an infant, and could not even make his hunger known for lack of comprehending it. He began the learning of absolutely everything as an infant would. Gradually, through various means involving the reassociation of his new

experiences with old ones that were recalled but not recognized, the man was restored to his health and little trace of his accident seemed left. But the interesting point in connection with this dissociation of his past from the present sensations was the content of some of his dreams, after he had gotten far enough along to tell them. He did not remember the incidents which they contained, but when told, they were recognized by his parents, who remembered them as incidents in the man's life in another State. These were recalled in the dream-life, narrated in the waking state, but not recognized by himself as a part of the patient's life before the accident. His normal experience was dissociated equally from his present life and the consciousness of his dreams in the waking state.

Dr. Albert Wilson reports a case of a young girl, healthy and normal, who was attacked by influenza, recovered, but suffered a relapse from too early exposure to fresh air, and was near death several times in a condition something like a trance. Recovery from this condition was followed by the loss of all her memories, including her own name and the names and identity of her parents. Like the Hanna case, she had to learn many things anew, and it was long before any association between her present and the past was effected, so complete had been the cleavage or dissociation caused by her illness and its cerebral effects.

Another case is reported by Dr. Boris Sidis. "The patient, otherwise a strong and healthy man, but extremely sensitive and nervous, used to fall into

subconscious states, preceded by what may be termed sensory aura (a sign of the oncoming attack), this being uniformly a sensation of green. The subconscious state lasted from about half an hour to an hour and more, the patient often becoming violent, having hallucinations, making attempts to assault his sister-in-law in the presence of his wife and bystanders; fighting people, beating cruelly his best friends, and even attempting in a violent fit of anger to throw out through the window his own little baby, whom in his normal state he greatly loves and adores. When the subconscious state works itself off and gradually approaches its termination, the patient becomes exhausted and falls into a deep sleep, which sometimes lasts as long as fifteen hours or more. On emerging from this sleep, the patient remembers nothing of what had taken place during the subconscious state. The memories, however, were not lost; they were present subconsciously, and were brought to light by the induction of hypnoidal states."

Instances of this kind could be multiplied indefinitely, but they would only illustrate the splitting off from the normal consciousness and its access many of the present sensations and past ones, the dissociation of experiences which ought to be associated and to cohere tenaciously in the normal condition. They are but exaggerated forms of this disintegration which has to characterize even the normal life, and they represent just the reverse of those remarkable resurrections of memories mentioned in the last chapter. There we found a number of instances in which little incidents not naturally recallable were

resurrected by some accident or unusual action of association. Here we find these experiences lost and not reproducible. Dissociation thus is a defect of reproduction, association is its normal function, retention being the same for all conditions, normal and abnormal. Dissociation determines obliviscence, and association remembrance or recognition, though there are numerous instances in which reproduction does its work and recognition fails in its functions. But before recognition can be expected to act, reproduction has to take place, and if dissociation acts recognition is impossible. Dissociation thus becomes the initial step in the diseases of personality. Association builds up complex personality; dissociation dissolves it, and the measure of a sound or a defective intellect in this respect will be proportioned, the one to the range of experience within the command of association, and the other to the extent to which dissociation disintegrates memory.

CHAPTER VI

ILLUSIONS

In popular parlance "illusion" is a very comprehensive term. It is almost synonymous with that of "error." Sully remarks that with many it suggests even insanity. But this for the psychologist is quite as much an "illusion" as any error of perception. In looser expression it may do good service as a name for various errors of perception and judgment, but it should never be mistaken for those organic and fixed disturbances which are implied by insanity and persistent hallucinations. It more generally imports those temporary variations from the normal standard of perception that induce us to disregard what we call illusions in our adaptive life. In the present discussion of them, therefore, we must give illusion a sufficiently definite meaning to distinguish it, on the one hand, from normal mental operations and on the other from hallucination, and perhaps also from the graver mental disturbances involved in pathology. It is also distinguishable from fallacy, which is an error in reasoning.

Illusion is usually defined as an error of perception, and, if too narrow limits are not assigned to "perception," there can be no objection to this con-

ception of it. But often, owing to certain technical limitations assignable to perception and to the interposition of judgment in the phenomena, illusion is sometimes regarded as an error of judgment. This conception presumably distinguishes it from fallacy, which, as just remarked, is an error of reasoning. There are certain errors of judgment which either participate in illusion or constitute it, and whether it is limited to this or not will depend upon the place assigned to mental phenomena often ascribed to perception. No doubt it is hard to fix the limits between perception and judgment, as both are so organically related to the most fundamental of our elementary states of knowledge, and psychologists have varied so much in the exact functions to be named by perception that they give correspondingly elastic conception to the phenomena of illusion. Perhaps in the distinction from hallucination, which is an organic disturbance, we have the best limitation of illusion, though it is often hard in concrete cases to distinguish between them. In type, however, they are easily enough distinguishable, as hallucinations have a fixity in most cases that prevents any correction of their occurrence, while illusions are usually corrected very easily. Hallucinations are more or less permanent aberrations of function; illusions are more or less temporary aberrations of function, and usually not the same functions exactly that are involved in the former, though they interpenetrate. Illusion may then be regarded as comprehending errors of perception and judgment which are more

closely related to the normal actions of the mind than are hallucinations.

Sully's definition is one of the best. He defines illusion provisionally "as any species of error which counterfeits the form of immediate, self-evident, or intuitive knowledge, whether as sense-perception or otherwise." This distinguishes it from normal mental action, but does not make the distinction from hallucination apparent. To me illusion lies between the normal and hallucinatory perception, and is distinguished from both of them; from the first in being an error and from the second in being less fixed and organic. I should emphasize the inclusion of judgment in the phenomena, and perhaps lay the most blame upon it for the error, while in hallucination I should attribute the primary cause to abnormal sensory functions. Possibly we might say that the primary distinction between illusion and hallucination would be just this: that in illusion the primary source of error is mistaken judgment, and in hallucination the primary source is abnormal sensory action more or less organically aberrant. They will, of course, often shade into each other, and hence I am here but distinguishing the types, a distinction which can be made more clear by illustration.

As a clear illustration of illusions I may give the following in my own experience. When a boy I was riding early in the morning to the Ohio State fair. As we had to ride some twenty miles, we started about three o'clock in the morning, and I had awakened from a sleep after riding some seven miles. It was very early dawn, and, on looking out of the car-

riage through the woods, I saw an immense palace of Grecian architecture. I was on the point of remarking to my father that I did not know there was such a palace in this locality, when I noticed it changing its form. In a moment, and before I could speak of it, the palace vanished into an open field beyond the woods. The trees and skies had suggested the palace, and the motion of the carriage interrupted the illusion.

Again, after lecturing to my class at Columbia University on the subject of space-perception, I was walking down Madison Avenue, on which there are no trees whatever. But at a certain point I noticed ahead of me both sides of the avenue lined with trees. Astonished at the vision, I stopped to see what it meant, and saw some distance in front of me a moving van with a picture of a street in a city lined with trees on both sides, and this had fitted exactly into the perspective of Madison Avenue. The illusion was of course quickly corrected.

The illusion in these cases consists in the existence of a sense-perception more or less suggestive of the thing apparently seen, and the state of mind being favorable to seeing that particular thing, the sensation or impression is correspondingly distorted, and an object is apparently seen which is not there. Moreover, the illusion is characterized by an impression or stimulus in the sense which does the apparent perceiving, and the whole effect is quickly corrected, as it is not due to organic disturbance in the sensory centres, but rather to temporary preoccupation of

the interpreting functions in a way to distort the sense-perception.

An illustration of an hallucination is the following. A certain gentleman has only to throw his head back upon his collar, when the pressure of the collar on a blood-vessel in the neck gives rise to the appearance of a human hand moving down from above his head before his face. To stop it the man has only to put his head in its normal position and remove the pressure of the collar on his neck. Here we have a tactual stimulus and a visual appearance, and hence a phenomenon that cannot be technically called an illusion, as it does not represent a distorted sense-impression within the sense having the perception. This is not always the characteristic of an hallucination, but when it does occur it best represents the functional action involved in hallucination, and such action is called secondary stimulus, because it involves stimulation in one sense and reaction in another, and is not properly an interpretation or misinterpretation of a proper stimulus.

In another case a physician can see an apparition of his deceased son in the left of the field of vision whenever he turns his attention to it or thinks of it. Nothing is apparently said in the case, and the apparition moves with the motion of the eyes. That is, the effort to focus on the apparition avails to cause it to move, showing that some organic disturbance, perhaps either in the retina or brain-centre gives rise, with expectancy, to the apparition, which seems persistent.

In these illustrations the primary factor is not

misinterpretation of sensory stimuli, but abnormal stimuli, and where they are secondary they exhibit distorted central action of a sensory character. Illusions are perhaps either primarily misinterpretations of impressions or these impressions are more nearly like the normal. But hallucinations persist more fixedly as simulations of external reality, and are corrected with much more difficulty, if they can be corrected at all.

These illustrations suffice to indicate the distinction between illusions and hallucinations for general purposes. I do not pretend that they are accurate and complete accounts of either their nature or their differences, but only that the criteria provided suffice for all practical purposes in the examination of problems in psychic research. As I have already remarked, illusions and hallucinations shade into each other in certain concrete instances, but in their types or most frequent manifestation illusions are the primary result of misinterpretation of a normal stimulus, while hallucination is primarily due to organic sensory defects, whether central or peripheral. Organic intellectual disturbances are sometimes called hallucinations, but I think it better to call them *delusions.* Of this again. All that I want to emphasize at present is the sensory character of the true hallucination, which persists in its simulation of reality more than do illusions. Misinterpretation is as important a factor of illusion as aberrant sensory action.

We can perhaps best understand illusions, however, by dividing them into their various types, ac-

cording to the predominance of the factor which determines their nature. In a general division or classification of illusions, however, I wish to remark a distinction which will be of some importance in the treatment and discussion of problems in psychic research. This distinction relates to those illusions which characterize all normal perception and represent organic conditions of the sensorium, while another class represent the influence of the mental state on the sensory impression to distort it, or misinterpret its meaning. In pursuance of the idea expressed in this, I think it may serve a useful end to distinguish illusions by their relation to the organism and to its functions. I shall therefore divide them into two general types, with such subdivisions as we may please to make or discover. These two types I shall call *Organic* and *Functional* Illusions. Both are associated with sensory irregularities. Organic illusions are those which represent an abnormal relation between stimulus and sensory reaction, and so may as regularly characterize sense-perception as normal activity. They therefore occur according to certain definite laws of the organism, and hence are not sporadic or occasional phenomena, but are quite as normal in respect of their occurrence under their specified conditions as are normal perceptions. Functional illusions are those which represent an abnormal influence of interpretation or mental functions on the sensory impression. The physiological facts are just what they are in normal perception, but some distortion of interpreting functions avails to distort the apparent object into something else than what it

really is. We shall proceed to illustrate and explain both types of illusion, and shall recognize at the same time that there may be forms of such illusions that interpenetrate or overlap both these types.

Organic Illusions

Perhaps the best illustration of organic illusions is the phenomenon of color contrast. If a piece of gray paper be laid upon a patch of bright blue, and both covered with a piece of tissue-paper quite translucent, the gray will appear to be yellow. If the background on which the gray is placed be yellow, the gray will appear blue. If the background be red, the gray will appear green, and if the background be green, the gray will appear red. Whatever the cause of this contrast, or perception of the complementary color, there is a phenomenon which appears to violate the well-known physiological and chemical explanation of color-perception. We seem to see colors that are not in fact presented on the retina. According to the normal organic laws of optics, we ought to see the colors as they are presented. But under these peculiar conditions we see a color that is the complementary of the background, and the judgment is an illusion. This illusion is organic because it is the uniform experience of vision in practically all people, and is as fixed and regular as normal perception itself. Only the conditions of the stimulus are abnormal or irregular.

The various illusions produced by mathematical perspective in imitation of solid objects illustrate the

same kind of illusion. The geometrical figure of a cube can be seen in either of two positions, or to represent a cube in either of two positions. It is the same with figures representing a screen or a tube. Take also the geometrical representation of a stairway which can be seen at will either from the upper or lower side; in one as if for ascent and in the other as if standing under it.

Stereoscopic pictures and figures represent the same phenomenon. They are drawn so as to represent the binocular parallax, which is always an important feature in normal vision, and the consequence is that, with the stereoscope, they appear to represent clearly solid objects or true perspective. This parallax of which I speak is constituted in normal vision by the slight difference between the retinal images produced by solid objects. The effect in the visual process is to bring out more clearly the perception of solidity, or the third dimension. If we imitate this parallax or disparateness of retinal images, as we can in geometrical figures, we elicit this visual process so as to produce the illusion of solidity where it does not exist. This imitation is what is effected in stereoscopic pictures. They are made with a slight difference in their representation of the object, so that the retinal images are not exactly alike. The effect is apparent solidity as in real objects. The interesting feature of the fact also is that the solidity or perspective is as clear and stable as in the perception of real objects. We should not be aware of any illusion in the phenomena but for our consciousness that no such real objects

are present as appear to be. If we could divest ourselves of the consciousness that surrounding objects of a different kind and unrelated to the stereoscopic pictures were not present, we should not be able to discover our illusion at all. The apparent reality of what we see in such cases is so distinct that it requires a special knowledge of the conditions under which the phenomena occur to even ascertain their illusory character. The organic functions of vision act normally, and the phenomena are not ordinarily interpretative, though that function is admitted into the effect. But the stimulus or sense-impression is modified so as to take on the character of the stimulus of the real solid object, and the mind has no alternative to the judgment which it forms. The illusion is an organic one, because it represents the normal action of the sensory process and is characteristic of all persons.

The phenomena of mathematical perspective and light and shade illustrate the same general process. In real objects the apparent size diminishes with the distance of the objects from us. The intensity of light also decreases in the same way, and shadows are indications of space-relations and with mathematical perspective may be used to affect the perception of distance. If, then, we draw geometrical figures in such a way as to imitate the retinal images of solid objects in the characteristics named, we should expect to elicit the natural perception of distance and solidity. This is exactly what takes place. If we draw two lines so that they are not exactly parallel, but approaching each other slightly, they may be

seen as a railway track. This will be much clearer if we have other appropriate objects drawn in the same field. The representation of a cube, mentioned above, illustrates the same fact also.

Aerial perspective, as it is sometimes called, also produces the effect of modifying our perceptions. It is the effect of the atmosphere on the judgment of apparent distance. When the air is misty or smoky it makes objects appear more distant. When it is clear they seem nearer. The effect is due to the association of distinctness and indistinctness with the actual and known distance of objects. In normal vision distant objects are less distinct than nearer objects, and when any condition of the atmosphere reproduces an unnatural distinctness or indistinctness, the associated judgment of distance is suggested.

In mathematical and aerial perspective, however, interpreting functions enter very largely into the perceptions. The organic functions are perhaps less dominant than in binocular perception, but they are apparently active, though fused with inference and association to such an extent that it is difficult to recognize the organic and functional influences. These seem to be present from the uniform and fixed habits of normal perception in such circumstances.

After-images are a good type of organic illusion. If we look at the sun directly for a few seconds, and then look at the sky at some other point, we can see an apparition or image of the sun, usually in the complementary color. This apparent perception of it may last some time before fading away

into a mere shadow. If we look at a bright light, say an incandescent electric light or any very bright light of the kind, and then look at the wall or some appropriate background, we are likely to see a reproduction of the light on this background, and it is usually in some complementary color. This is what is called an after-image, and it represents all the appearance of an external reality like the original object or light. But for the circumstances with which we are usually familiar the apparition might be taken for a real object. I have been able, in looking through a window at a landscape or streets of a city, to reproduce in an after-image, by closing my eyes, the exact view at which I was looking, with its color, perspective, and all. This exact reproduction of the visual impression as an apparent object is called the positive after-image, while the appearance of the outline or same image in the complementary color is called the negative after-image. In both there is a retinal reaction, the positive image representing the exact sensory reaction of a real sensory object or reality. The phenomenon might be called an hallucination but for its transient character. It is, however, organic in any case, and represents erroneous perception in its maladjustment of sensory function.

Another type of illusion illustrates organic influences. I refer to the apparent motion of objects when it is we ourselves that are in motion. Those who do not feel their own motion or are not conscious of it in some way — and this is especially true of children at first — when in a train of moving cars,

will see the landscape apparently travelling in the opposite direction. It often takes time and effort to correct this impression. The same illusion in a modified form occurs with nearly all people when waiting for their train to start. They often think it has started, only to find that it is a train or car opposite that is moving in the opposite direction. This illusion is so strong with myself that, when it occurs, unless I can look at some stationary object, it is almost impossible to correct it. In the former instances, those of the apparently moving landscape, the cause is the real motion of the retinal image not corrected by the consciousness of the bodily motion in space. I have seen this phenomenon illustrated by the appearance of the gaslight moving across the room, caused by the actual motion of the eyes into a parallel position as sleep approached, and without the consciousness that the eyes were so moving. The retinal image of the light moved across the retina and produced the illusion of actual motion in the light. In the case of the apparent motion of a car opposite the observer, we have retinal motion of the image, but it is accompanied by a tactual illusion of real motion of the car in which we sit. We can correct it only by visual comparison of the known impression with other objects in the field that remain stable. The tactual illusion or hallucination, so to speak, is arrested. In all of them, however, organic influences operate, whatever the interpretative functions, and these are factors undoubtedly. But the organic reactions of the sensorium are so natural a

process of the effect that they may be regarded as the dominant influence.

The localization of sensations in amputated parts of the limbs is another illustration of organic illusions. Some question may arise as to the nature of this phenomenon, but it undoubtedly represents a judgment of an existing object or limb that is not the fact. The explanation of it is not the point of interest at present, but merely the fact that sensations are assigned a locality which is physically impossible under the circumstances.

Narcotics and poisons often affect the sensory organism so as to give rise to abnormal perceptions, which are illusory in comparison with what is accepted as normal. Certain poisons affect color perceptions, as santonin, according to Sully, makes colorless objects look yellow.

Functional Illusions

I have explained that functional illusions represent an abnormal influence of the interpreting acts of the mind, or inference and association, in distorting what we should most naturally take for something else than the apparent perception. In this conception of them, however, I recognize that the distinction between them and organic illusions will not always be clear. They will often overlap each other, and functional illusions will be most distinct in those instances in which impressions are greatly distorted, owing to subjective states of mind. They will often merge even into fallacies of reasoning. But those

which are more closely allied to errors in perception will have the characteristic of a misperceived object.

Mathematical figures representing solid objects or perspective illustrate this inferential function to some extent, though they ally their illusions to the organic type. The organic element is indicated in certain fixed organic conditions in the impression which limit the inferences which we might draw from their appearances. But inference and association operate in them to a sufficient degree to admit them at the same time to a place among the functional illusions caused in this way. Aerial perspective and intervening objects also illustrate the same phenomena. From them we infer perhaps more than we see, but owing to the peculiar nature of perception we seem actually to see what is in fact the product of memory and inference.

An illustration of functional illusion bordering on the organic is one which may represent a frequent type. There was a picture of a flower in my room which, when seen at the proper distance, appeared to represent a little, queer old man doubled up in a funny position. The first time I saw this picture I did not recognize the flower, but thought I saw this funny old man. I approached the picture to see it more distinctly and found that it was a flower. I returned to my original position, and the little old man reappeared in place of the flower, and never afterward could I look at that picture at this distance without seeing this queer old man, though I knew well enough that it was a flower. The preconception established by the first experience was

strong enough to prevent the corrected judgment from being more than an inner judgment, not a perception. The illusion always remained. Recently I had a similar experience with the reflection of a window and some candlesticks on a mirror in a photograph. The appearance at a certain distance was of a peculiar old man with a very high skull-cap on his head. Close inspection corrected the illusion, but it would reappear when I resumed the distance at which I first saw the photograph. The general resemblance in the pictures to the objects apparently seen had sufficed to distort the impression, and this experience was sufficient to keep up the illusion after it was once created.

The primary influence in producing the illusions in these and similar instances is indistinctness of certain parts of the retinal image. The evidence of this is the fact that the illusion disappears when the object or picture is viewed at close range. What the eye seized was those characteristics which it sees most clearly, and the mind interprets the impression in accordance with past experience. In the instances mentioned the most distinct features of the object were comparatively clear, and others were not clear enough to suggest their part in the impression. The consequence was that the mind would take account of what it was most aware of, and perhaps its memory and imagination would unconsciously introduce elements from the past and from constructive tendencies of the mind into the product. But leaving the subjective and mental influences on what we see out of account, the main cause externally of the

illusion is indistinctness of the impression as affected by the relation of the object to sense. The causes of this indistinctness may be various. Sometimes it may be distance, sometimes it may be peculiarities in light and shade in the object, and sometimes it may be the dimness of the light in which the object exists. We can hardly lay down any special law for all cases, but the most general one, and this will be any influence which dims the retinal image.

General illustrations with which we are all familiar are found in the phenomena of seeing forms in the clouds, distorting objects in the dark, perceiving animal or human forms in physical objects, as the "Old Man of the Mountain." These occur everywhere and at all times, and readers will recall them without multiplying instances. It suffices to emphasize the cause of them as something to consider when we come to discuss phenomena purporting to represent agencies beyond sense-experience.

We do not always, if ever, seriously think of it, but pictures are one of the best illustrations of illusion that can be given. They are combinations of light and shade with mathematical perspective so as to represent real objects. A good artist can so imitate reality as to produce what we call the illusion of it, that is, so distinct an appearance of real objects with their solidity as to be taken for them. The legend of Apelles, or some Greek artist, illustrates this. It was said of him that he painted fruit so well that the birds came and tried to peck it. Landscape views illustrate reality so perfectly that one can easily lose himself in the feeling that he is

looking at actual scenes. This is quite noticeable in good theatrical scenery when the light is properly managed, though, if close to it, the view would present no illusion at all. Size, indistinctness of form and color, and various devices in imitation of the influences which nature uses to suggest distance and perspective are the means of producing these illusions in artificial representations. The photograph does it to perfection, though it relies upon fewer agencies than are found in reality. Light and shade are its only resource.

One very interesting instance of illusion in pictures is that with which we are all familiar, namely, the apparent change of position in objects when the spectator changes his position. If we look at the picture of a person from either side and then change our position to the opposite side, the person will have appeared to have changed his position. If the picture be that of a profile this illusion is much more apparent, but is equally an illusion in all other cases. If we watch carefully while we change our position, we shall appear to see the person actually turning his face toward us. The cause of this is the simple fact that, in plain pictures, which have no actual solidity in their forms, the view is the same for the observer in all positions, and as the view is not the same for stationary solid objects, we naturally see pictures as if the object had changed, as this change in real objects must occur if their impressions remain the same when the observer changes his position. In viewing solid objects, a change of position by the spectator is not followed by exactly the same

retinal images as in pictures, and hence the judgment must be different. In pictures the illusion is due to the identity of retinal images in situations which normal experience represents as different, and hence our judgment sees the phenomena from the standpoint of normal experience when asking for the appearance of the picture as compared with the past, which is the standard of judgment.

Another and equally interesting illusion is the following: If we look at a windmill wheel, such as is used in wind-pumps, while it is revolving in a position oblique to the observer, we may not be able to tell in which direction it is revolving. This depends upon the question whether the oblique direction of the wheel's axis is apparently on our left or our right. The retinal impression or image is the same for both positions, and if binocular influences are either too indistinct or imperceptible we are left only to geometrical considerations in the formation of our judgments. We may thus apparently see the wheel in either of two positions, and its motion will appear to accord with this apparent position, now seeming to be in the direction of left to right and again from right to left, and in either case completely the opposite of what it appears to be in the alternative direction. The phenomenon associates organic with functional influences.

There is a large class of illusions in which the primary factor in their production is the state of mind in the observer. I recall one instance in my own experience. I had called the roll of my class, and a certain young man by the name of Macaulay

was absent, but came in before the end of the hour. He called my attention to the fact at the close of the lecture, and as I was in a hurry to meet another class I waited until I arrived in another room to mark his attendance. When I sat down I noticed a piece of paper on the desk in front of me and underscored, as I thought, was the name Macaulay. I was struck with the coincidence, and in looking at the word found it was *manager*. Here the mental interest in not forgetting to note the presence of a man whom I had marked as absent had the effect of distorting the sense-impression and of making it appear quite different from what it actually was.

Prof. James narrates a similar personal experience. "I remember one night," he says, "in Boston, whilst waiting for a 'Mount Auburn' car to bring me to Cambridge, reading most distinctly that name on the sign-board of a car, on which, as I afterward learned, 'North Avenue' was painted. The illusion was so vivid that I could hardly believe my eyes had deceived me." This Prof. James classifies under "proof-readers' illusions," and I may remark that my own absorption in the thought of what I write makes it exceedingly difficult for me to detect errors in print. I often see a word rightly spelled when it is in fact wrongly spelled.

"The whole past mental life," says Sully, "with its particular shape of experience, its ruling emotions, and its habitual direction of fancy, serves to give a particular color to new impressions, and so to favor illusion. There is a 'personal equation' in perception as in belief, — an amount of erroneous

deviation from the common average view of external things, which is the outcome of individual temperament and habits of mind. Thus a naturally timid man will be in general disposed to see ugly and fearful objects, where a perfectly unbiased mind perceives nothing of the kind; and the forms which these objects of dread will assume are determined by the character of his past experience, and by the customary direction of his imagination."

Such phenomena could be illustrated at much greater length, but sufficient instances have been given to explain the liability of the mind to mistaken judgments in certain normal perceptions. In discussing normal sense-perception I remarked the difficulty of assuring ourselves of an infallible criterion for external reality, and this question is again suggested by the phenomena of illusion. But with the fact that illusion does not affect the existence of external reality, but only the nature of it, we may remark that the skeptical limitations which it assigns to our perceptions relate to the correctness of our conceptions and judgments regarding the totality of this external object. The maladjustment between sensation or impression and the interpreting function of the mind avails to create the idea that we see what we do not see, but infer, though we do see something. The discovery of illusion only puts us on our guard against assuming more in our perceptions than is actually there. It forces on us the discrimination between judgments that represent a correct adjustment between external influences and internal activities and judgments that distort or add to the data

of sense-perception. What the criterion is that enables us to correct illusions need not be discussed at length. This was indicated in an earlier chapter, where it was stated to be the correction of one sense by the perception of another, or the measurement of the present impression against the totality of one's normal and repeated experience.

The most important point, however, is the distinction between organic and functional illusions. This is important because so much is made out of the phenomena of illusion generally in the problems of psychical research. In the study of residual mental phenomena the critic reminds us of our liability to illusion, and while this has not only to be admitted as well as urged as a caution, it is quite as important to know when this objection actually applies to certain allegations. We are of course exposed to illusions in psychic experiences as well as in any other phenomena, but it is important to inquire always what the types of illusion are in these experiences, and to ascertain these we must know what the phenomena are which are reputed to represent supernormal realities. But we cannnot reproach them with illusion unless we distinguish the type of illusion which is chargeable in the case. Organic illusions of the type discussed will hardly enter into the problem. They represent universal and normal perception, especially those involving mathematical and diagrammatic figures. They indicate certain normal functions misadjusted to the circumstances under which they occur, and are necessary illusions, so to speak, occurring in all normal experience, and not

correctible at all in sensory phenomena, but only in respect of the associations and judgments occurring at the time. They are not primarily misinterpretations of facts, but are exceptional facts or involve the operation of sensory functions other than inference and association. The phenomena with which they are connected do not pretend to be sporadic and occurring to only specially endowed persons or special conditions of all persons, but to all normal experience. No application of our liability to them can be made to such phenomena as attract the attention of the psychic researcher interested in the supernormal.

It is somewhat different with functional illusions, though some of them are complicated with the organic. Functional illusions, as we have seen, are primarily such as are influenced largely by subjective agencies and represent the misinterpretation or distortion of sensations by such facts as expectancy, suggestion, emotional states, and any mental preoccupation which involves intensity of interest in the meaning of experience. These illusions take us at least to the border-line of all those considerations which make up scientific method. Many of them, however, and especially such as are closely related to and involve organic tendencies, will have little place in the cautions necessary to observe in the usual phenomena claiming a supernormal interest. All illusions affected by indistinctness of impression and by expectancy will have a pertinence in the problems of psychic research, as understanding our liability to them will protect us against their influence on our

convictions. But the real and most important errors in this field are due to other sins than illusions. These we shall discuss in their place. All that I would make clear at present is the fact that illusion as defined and discussed above has a very limited application to the problems of psychic research, though it may be related to many of the alleged phenomena claiming a " supernatural " character. I think, however, that ignorance in regard to scientific method is a more important factor in these problems than our liability to illusion.

CHAPTER VII

HALLUCINATIONS

I have distinguished illusions as primarily representing transient misrepresentations of reality and as caused by some maladjustment of functions in the sense affected. This means that the sensational impression is more or less normal and is made in the sense affected by the illusion. Hallucinations are not always so regarded. Many of them involve a stimulus in one sense and an apparent perception by another sense. All of them represent a more fixed and organic tendency to false functional action. This is so true that we might define an illusion as a false judgment and hallucination as a false fact, except that we should need to alter our ordinary conception of both judgment and fact to treat such a definition as accurate. It suffices, however, to call attention to a marked distinction between them. The primary fault for the error in hallucination is not the judgment, but the false or erroneous sensory action. But there is one characteristic of hallucination which distinguishes it clearly from intellectual errors, and this is its nature as sensory action, which represents an apparent reality while the interpreting function may remain perfectly normal.

The definition of hallucination is often paradoxical. Parish, after quoting Edmund Gurney, who said, "Every psychological phenomenon that takes the character of a sense-perception is a sense-perception," remarked: "A hallucination is then a sense-perception like any other," and adds the statement of Prof. James, "only there happens to be no object there, that is the whole difference." The difficulty of such a definition is that it cannot serve any but a provisional purpose. There is certainly a very striking resemblance between normal sensations and hallucinations, but there is also a most essential distinction. Sensation does not stand for any arbitrary or abnormal phenomenon. It does not merely represent a subjective affection of the sensorium abstracted from its appropriate stimulus or cause. Abstracting from its cause it is, of course, subjective, but in all normal psychology and in most scientific parlance it intends to obtain its accurate definition and so distinction from false experiences by its implication of an external and determinate stimulus. An hallucination accurately conceived must also be defined to distinguish it from normal sensations, whatever its resemblances to it. A sensation in ordinary psychology and philosophy stands for a subjective experience determinately related to its appropriate stimulus, as color to light, sound to aural vibration, touch to hardness, etc. The perception or judgment associated with it can be tested in various ways, and some other quality than the one perceived at first will usually be discovered. It is not so with hallucinations. It is true that "only

there happens to be no object there, that is the whole difference," but this difference is very great, and is not to be suppressed by an "only." The hallucination may be exactly like the sensation in its subjection nature, but it is quite different in its causal relations, and that fact constitutes a difference of considerable magnitude. An important factor in definition of it is that its cause or stimulus is usually not determinately related to its occurrence, as is a normal sensation. The usual stimulus is what may be called a *secondary stimulus*, which means that it is not coördinated with a cause like that of normal sensation.

An important distinction between illusion and hallucination is the fact that the correction of an illusion tends to make it disappear, while the discovery that an experience is an hallucination does not remove its occurrence. This means that judgment has more to do with illusions than hallucinations. It is quite natural that the judgment should assign reality to hallucinatory phenomena, but when the judgment is found to be wrong the fact does not correct the hallucination. In illusion the correction of the illusion is the correction of the judgment. This holds true more or less in the organic illusions, which, though they may continue to occur, do not deceive our minds as to the apparent reality. There is nevertheless a resemblance even here between illusions of the organic type and hallucinations. The latter tend to occur as before their correction, but are definitely related to the sensation produced and are closely allied to normal sense-perception. But

in general the correction of an illusion modifies the apparent experience and even removes its influence on the judgment. The sense of apparent reality is less noticeable than in hallucinations, where the phenomena undergo no alteration as sensory appearances when we become conscious of their hallucinatory character.

I may then define an hallucination as a functional sensory reaction imitative of those sensations which are correctly correlated with an external object. This is a broad definition to include all types of the phenomena, and designs to represent both its purely subjective character and its semblance to normal sensation. The most important characteristic, however, is what is called its subjective nature. At one time this conception of it assumed that it was a spontaneous production of the mind, but later investigation has shown that hallucinations have stimuli or causes as do normal sensations, but they do not have the same normal cause. They represent abnormal and non-correlated experiences in relation to stimuli. This is to say that the reality which gives rise to them may not in any sense be as like the cause of normal sensation as the object of sense-perception is supposed to be like what it appears to be. In normal sense-perception we have a definite and intelligible relation between object and perception, whether the sensation be regarded as representative or not. But in hallucination the experience is not representative of the cause, even when the sensation is supposed in normal perception to be representative. The relation between stimulus and hal-

lucination is an abnormal one, or the hallucination cannot be taken as an index of the supposed external object or cause.

Before illustrating hallucinations their divisions should be indicated. The psychic researcher has divided them into *veridical* and *subjective* or *falsidical.* Veridical hallucinations are supposed to point to some such external cause as is apparently indicated in the experience, and so connects the phenomenon more or less with agencies like normal sensory stimuli at least in influence. Subjective or falsidical hallucinations are supposed not to indicate their cause in any definite manner, but to be as "unreal" as dreams and the products of the imagination. For certain purposes this division is very useful, but I think it should be subordinated to a more fundamental classification based upon the principles that distinguish between external and internal stimuli or causes.

I therefore think it better to divide hallucinations into those *extra-organically* initiated and those *intra-organically* initiated, or briefly, extra-organic and intra-organic hallucinations. By this distinction I mean that some hallucinations are caused by stimuli occurring within the physical organism and some by stimuli occurring without this organism. We may further subdivide these, if we find occasion to do so. Of the externally or extra-organically initiated hallucinations we may distinguish the veridical and the falsidical, if there be reason to suppose any of them veridical. Whether or not the division may suit reality it indicates an alleged class of phenomena

claiming scientific attention and supposed to lie between purely subjective hallucinations and normal sense-perception, at least in respect of their meaning. Intra-organic or internally initiated hallucinations will be subdivided according to their causes, all of them being falsidical, that is, non-indicative of the reality represented. They are all due to abnormal conditions, and possibly no clear line of classification can be made regarding different types of them. Perhaps one distinction may be useful, namely, that which distinguishes between hallucinations correlated with what we may call *primary* stimuli as opposed to those correlated with *secondary* stimuli. Some hallucinations arise in the sense affected by the stimulus and others arise in a sense not affected by the stimulus. Thus the stimulus may be in the ear and the hallucination may be a visual phenomenon. This secondary stimulus may be either peripheral or central, that is, it may be either in some part of the bodily tissue or in some part of the nervous system. In addition to this it may be either organic or functional, that is, it may be some physical pressure or lesion, or it may be functional disturbance of some kind. There is no way to determine this except in the individual case. The utmost that we can do in classifying the instances is to indicate these various possible sources of stimuli giving rise to hallucinations. The general knowledge of the fact that stimuli of this kind produce them is all that is necessary to protect us against the interpretation of such phenomena as representing the realities which they appear to indicate. The point to make clear is that subjective hallucinations

are abnormal phenomena, and that we require some criterion for distinguishing between those which have an internal origin and those which are initiated from without.

The primary point in the cause of hallucinations is their relation to stimulus and to normal perceptions. In normal experience we find a certain constant relation between stimulus and perception supposedly representative of the object causing the perception. Light affecting the retina elicits color, vibrations affecting the ear produce sound, physical objects affecting touch evoke the sense of resistance, and similarly with the other senses the object perceived is supposed to affect the sensorium which does the perceiving. It is quite different with hallucinations generally, and in fact it is this difference that serves as a fundamental criterion for determining when the experience is hallucinatory. The stimulus in such phenomena is not normally correlated with the sense apparently affected, but comes from some other part of the sensorium. Hence it is called a secondary stimulus. For example, a disturbance may occur in the auditory functions and the person may not hear sounds, but may see visible objects of some kind. An unusual stimulus may occur in the stomach, and we may have a nightmare. A headache may give rise to apparitions. In all these imaginary cases the relation between stimulus and sensation or apparent object is not like the normal order, and hence the stimulus is called secondary to indicate that, in respect of stimulus *per se*, the phenomenon resembles sensory experience, but in respect of the

thing apparently perceived it is wholly different from the normal. With this explanation of the general cause of hallucinations we may proceed to some illustrations.

One of the most interesting hallucinations on record is that of Dr. Nicolai, of Berlin, who was able to record his experience and to observe it as carefully as he could observe facts in his other scientific work. I give it as quoted in the *Transactions of the Royal Society of Berlin.*

"During the latter six months of the year 1790, I had endured griefs that most deeply affected me. Dr. Selle, who was accustomed to bleed me twice a year, had deemed it advisable to do so but once. On the 24th of February, 1791, after a sharp altercation, I suddenly perceived, at the distance of ten paces, a dead body, and inquired of my wife if she did not see it. My question alarmed her much, and she hastened to send for a doctor. The apparition lasted eight minutes. At four in the afternoon, the same vision reappeared. I was then alone. Much disturbed by it, I went to my wife's apartments. The vision followed me. When the first alarm subsided, I watched the phantoms, taking them for what they really were, — the results of indisposition. Full of this idea, I carefully examined them, endeavoring to trace by what association of ideas these forms were presented by my imagination. I could not, however, connect them with my occupations, my thoughts, my works. On the following day the figure of the corpse disappeared, but was replaced by a great many other figures, representing sometimes friends, but

more generally strangers. None of my intimate friends were among these apparitions, which were almost exclusively composed of individuals inhabiting places more or less distant. I attempted to produce at will persons of my acquaintance, by an intense objectivity of their persons; but, although I could see two or three of them distinctly in my mind, I could not succeed in making exterior the interior perception, although I had before seen them afresh when not thinking of them. The disposition of my mind prevented me from confounding these false appearances with reality."

After some treatment, according to the methods of the time, the apparitions disappeared. Their interest for us, however, is in the fact that the man who had them was physically well and healthy in so far as all indications went, and was a scientific observer of his experiences. Similar phenomena are often observed by physicians, but they take no account of them for the psychologist.

Dr. Boris Sidis mentioned an interesting case to me that represents very clearly the influence of determinate secondary stimuli. He had a case which represented apparitions of deceased persons. He examined the eyes and the retinas, only to find them perfectly sound. He then examined the ears and found them inflamed. He then resorted to an increase of the stimulus in hearing and found that he had increased the number of "spirits" visible. When he decreased this stimulus, the number of "spirits" correspondingly decreased, showing in each case that the visions were due to the influence

of disturbance in the auditory centres, and that this influence made itself apparent in phenomena associated with the healthy part of the neural organism. The apparitions were not only not real, but they were not even instigated by any stimulus on the sensorium apparently affected.

The same author narrates an instance of nose-bleed which resulted in causing everything in the field of vision to appear red. This sensation of red was also excited by a pain in the head. On another occasion the same subject had sensations of red and of pain in connection with a dream of suicide.

Dreams and deliria also illustrate hallucinations in a clear form. The specific causes are not alway determinable, but the result is the same as in persistent hallucination. Only one peculiarity separates dreams from persistent hallucinations. It is the fact that they are only transient as the state of sleep. Deliria represent abnormal conditions, physical or mental, but may accompany only a transient illness. But in both the mental machinery involved is the same as in ordinary hallucinations.

As an illustration of dream hallucination, take the case of the man who dreamed that he was walking on ice in the Arctic regions, and awakened to find that his feet were exposed outside the bedclothes. Here was a secondary stimulus with distinct tactual sensations of cold and perhaps visual appearances.

I have two dreams in my own experience which illustrate the fact very clearly, and this because I awakened while dreaming, and the images of what

I was dreaming about still lingered as hypnogogic illusions, apparent sensory realities, for some time. In the first I saw a mountain lake with cottages on its shores, and I was standing on an elevation looking down on the scene. This vision, after waking, lasted for, perhaps, ten seconds or more. It disappeared suddenly after I noticed crevices breaking in the rocks on which I was standing. In the second I was in my old room at my home in Ohio, and noticed the walls with a paper on them that was never on the actual wall in my experience. This apparition vanished and I discovered that I was in my bed in New York. I was wide awake when this occurred, having awakened in the dream, and continued seeing the walls in a puzzled condition, as I did not know where I was until the apparition vanished.

In both these cases I was able to note that I was apparently looking at real objects, the normal consciousness and its observation confirming what we infer from the vividness of our dream visions, namely, the sensory action of the mind as in reality. This explains why we take the visions as real, as the same feeling accompanies ordinary hallucinations. The same is true in deliria which occur on the borderline between normal consciousness and conditions in which the deliria are not remembered. I remember one of these cases in an attack of intermittent fever, when I saw the wall of the room cracking and threatening to fall. I was told what the other facts in the delirium had been. This one I remembered at the time and called attention to it. It was distinctly real to me. The vision had all the qualities, external

appearance, of reality except the tactual confirmation.

Hallucinations can also be produced by hypnotic suggestion. The peculiarity of this fact is that they occur with perfectly healthy subjects. It is perhaps admitted by all experimenters who understand psychology that hallucination is the normal form of suggested matters. The manner of the subject indicates this, and his whole conduct toward what is suggested. The best evidence, however, of sensory effects like hallucinations will be found in those states in which the subject remembers what he had been told that he will see, hear, or feel. I remember one instance in which the hypnotic subject remembered what the suggestions were after he came out of hypnosis. The operator (not professional) suggested on one occasion that he saw certain wild animals, such as the lion, tiger, elephant, etc., and the suggestion was accompanied by remarks calculated to awaken fear of the animals. This was manifested. After he was awakened another request was made to try hypnosis a second time. He refused, saying that he did not want to go where he could see those wild animals, and on being asked to describe what he saw, he did so in just such terms as a normally conscious person would describe real objects of the kind. There are no doubt other similar cases on record, and I wish here only to give a clear illustration of the effect of hypnosis and suggestion in eliciting hallucinatory images and arousing exactly the same mental and other machinery that is active in morbid hallucinations.

An interesting phenomenon in connection with hypnotic suggestion is what the psychologist calls *negative* hallucinations. Such as I have described are called positive hallucinations, and mean that an object which does not really exist can be made to appear to exist. But in a negative hallucination an object which does actually exist before sense-perception can be made to disappear at suggestion. I may be looking at a tree, and if told that I cannot see it I will not see it, and as long as the suggestion operates I cannot be made to see it. This experiment has been performed myriads of times, and is the complementary phenomenon of positive hallucination.

These illustrate sufficiently the different types of hallucination, and we have now to look at two aspects of them as mental phenomena. The first is their *causes* and the second is their *meaning* for the psychologist. Their causes have been briefly indicated in their classification and in the distinction between sensations produced by primary stimuli and hallucinations produced by both primary and secondary stimuli. But nothing has been indicated regarding their meaning for psychology and its larger conceptions of mental phenomena and their implications.

In general the primary cause of hallucinations is some morbid condition of the organism. This holds good even when the stimulus is external and normally related to the sense affected. Normal experience represents stimuli and sense-reaction properly connected, as in touch, sight, hearing, smell, etc. The cause of the sensation is definitely correlated with its effect, and that relation is so constant and regular that

we can easily ascertain why and how any particular mental experience occurs. But if any morbid condition of the organism occurs, the stimuli, internal or external, are distorted, and the effect is not representative of the cause. That is, we cannot use the normal standards for estimating or determining what the cause of the experience is. In hallucinations we cannot infer from the sensation of color that it is caused by light on the retina. We cannot infer from odors that the cause is the ordinary stimulus of the olfactory nerve. We have to seek the cause elsewhere. Most frequently it is in the organism, and is some abnormal condition either of the peripheral or of the central system, whether organic or functional in either case. For example, pressure on a nerve by inflammation or organic growth may give rise to hallucinations. An ulcer in the brain may do the same. Any stimulus due to disease may produce them in abundance. Most frequently perhaps they are found in general disturbances, so general that they could not be made intelligible without the quotation of long cases and examples. But speaking of all "fallacious perception," including illusions and hallucinations, but more particularly the latter, and of both external and internal stimuli, Parish summarizes the whole matter in the following statements:

"The dependence of hallucinations on external stimuli is well illustrated in the following often-quoted communication from a patient:

"'Every tree which I approach, even in windless weather, seems to whisper and utter words and sen-

tences. The carts and carriages rattle and sound in a mysterious way and creak out anecdotes. The swine grunt names and stories, and exclaim in surprise. The voices of the dogs, cocks, and hens seem to scold and reproach me, and even the geese cackle quotations.'

"To this class belong also hallucinations occurring in clouding of the cornea or lens. Perhaps the case quoted by Griesinger of the man who always saw a black goat at his side may be taken as an example. In the same way eyelashes, tears, and such like may furnish the material for hallucinations. This is specially likely to occur, as has often been insisted, if there is any want of distinctness in the original impression. Myopia and other defects of vision which cause the sense-impression to be indistinct also predispose to fallacious perception. Zander reports that among 100 mental cases he had eight color-blind patients who all suffered from visual delusions. Leubuscher's account of the patient who mistook himself for his mistress seems to point to the same explanation, for if he saw himself in a mirror he knew his face to be his own, but if he only saw his reflection dimly in the window-pane, he took it for the image of his lady.

"The stimulus, however, need not be an objective sensory impression; it may consist in pathological or physiological irritation of the sensory centres. In the normal state both processes, as we see, are recognized as so-called sensations; but if dissociation obtains, they may become causes of false perception.

"The physiological sensory irritation may depend on changes such as metabolic processes in the centres themselves, and in the nerve-tracts leading to them. The pathological irritation may depend on morbid processes, such as meningitis, which radiate from neighboring parts of the brain; at least, cases of sensory delusion in which external impressions fail to be perceived, either owing to peripheral disturbance or because the ascending current is broken off at some intermediate point, are most easily explained by supposing an irradiation proceeding from the morbid part. Or, secondly, the pathological irritation may act from some given point in the course of the sensory path concerned; for instance, in a partly atrophied nerve the seat of excitation would be the point of transition from the morbid to the sound parts. Such cases might plausibly be explained by adopting H. E. Richter's view of hallucination as an instance of anomalous functioning of the sensorial nervous system analogous to anæsthesia dolorosa, in which, though the peripheral stimulus cannot reach the central organ, owing to the irritation of the sensory nerve at some intermediate point, the brain nevertheless receives impressions from the seat of the irritation."

The whole system of influences instigating hallucinations is indicated in this passage, and may be summarized in the irradiation of stimuli from the natural centre of their influence. We should naturally suppose that a lesion or organic disturbance in the auditory centres would affect the machinery of hearing, and so it does. But it does not always

cause hallucinations of hearing. It may affect vision, as we have seen, and this fact is explicable by the irradiation of the influences associated with the disturbance to associated centres of action. In most cases this influence is intra-organic, and associated with insanity or abnormal conditions, physiological or psychological. The hallucination will not necessarily be a symptom of insanity, but only of some disturbance in the nervous system or its functions. That disturbance may be very slight, and it will be symptomatic of serious conditions only when it extends its agency over the mental life, or persists in a manner to show that it is due to more fixed influences than those which produce illusions, dreams, deliria, or hypnotic hallucinations.

It is not my purpose to go into any details regarding the causes of hallucinations, nor to discuss any theory of them in general. That is the work of the student of psychiatry or abnormal psychology. It will suffice here to recognize the fact that they have some abnormal cause in the organism in most instances, and then to examine the meaning of such a fact for the student of psychology and the general public which indulges theories of apparently supernormal phenomena without any clear knowledge of the difficulties attending their speculations. The classification of hallucinations implied the different types of causes, and I may return to this as a means of separating the various problems confronting the student of abnormal and supernormal psychology.

The reader will remember that I divided hallucinations into those that are intra-organically initiated

and those that may be extra-organically initiated. The intra-organic may have peripheral or central stimuli. The peripheral stimuli will represent either the primary or secondary influences. The primary stimuli will be some affection of the organism which perceives the apparent object. The secondary stimuli will be some affection whose influence irradiates to some other sensory centre than the one we should most naturally expect to be concerned. Central stimuli may be similarly divided. The primary will be an affection of the central function concerned, and the secondary will be influence irradiated from one centre to another, and both will represent psychical function of some kind as distinct from the bodily affection of peripheral stimuli. In all of them, however, both peripheral and central, the hallucination or sensory product will not involve a representative percept as in normal experience, but will be a subjective result of the mind's own making. In other words, the hallucination will be falsidical, which is to say, that it does not represent the cause of itself in terms by which our normal action and behavior are directed. The phenomena are no better than the products of imagination, in so far as reality is concerned.

It is not so easy to divide extra-organic hallucinations, as we are not so sure that we can assume different stimuli corresponding to their types. Neither can we assume without evidence that the stimuli, when we suppose a distinction in kind between the hallucinations, can be divided as are those of intra-organic cases. We may, however, distinguish the hal-

lucinations provisionally into what are known as apparitions or ghosts, and those of an irregular character which are related to external physical stimuli. Of course, many of the class of apparitions belong either to illusions suggested by external stimuli or to hallucinations of disease intra-organically initiated. But I am here referring to that class of apparitions which psychic researchers regard as veridical, and which do not show the ordinary character of illusion or of hallucinations physically initiated. Many psychic researchers would remonstrate that they are not hallucinations of any kind, but representative realities, and I shall not unqualifiedly deny that contention. I can only postpone for the moment the consideration of their nature, while I accept the actual conception which the student of abnormal psychology has of them without investigating them carefully. I call them hallucinations in deference to that point of view for the sake of ascertaining their causes before pronouncing on their possibly real character. When this is effected we may find that we can also apply here the distinction between peripheral and central stimuli. But as this involves speculative considerations, which are as yet wholly undetermined and which may never be true, I think it best to distinguish them provisionally from those hallucinations determined by ordinary external stimuli, and so recognize a possible type determined by some extraordinary stimulus. I may therefore divide extra-organic hallucinations into those which are sensibly or physically initiated and those which are supersensibly or superphysically initiated.

Whether the last class really exists is not now the question, as I am concerned partly with a question of definition and partly with an alleged claim whose integrity has to be examined.

The last remark and the fact that hallucinations sensibly or physically initiated are like the intra-organic type, namely, falsidical, suggest that it might be well to classify them from their characteristics rather than their causes, and then study them for their causes. A special reason for this view of the case is the fact that there is no essential difference between hallucinations determined sensibly by external or extra-organic stimuli and hallucinations determined by intra-organic stimuli, especially of the peripheral type. They are both falsidical, which is to say that they are not representative of their causes as are normal sensations, at least as these are supposed to be in our common conceptions. With the distinction, therefore, between veridical and falsidical types, we may discuss the question whether there is adequate reason for the distinction, and whether the veridical type can have any such cause as is claimed for them. It is agreed that ordinary hallucinations are not representative of their stimuli, and in fact this conception is the reason for calling them hallucinations, and only since the psychic researcher came to recognize a possibly transcendental meaning for apparitions have we heard of the distinction between veridical and falsidical hallucinations, meaning thereby that possibly one type stands for the reality of discarnate spirits. The opposing view maintains that they are all equally subjective creations. They

have their causes, but these causes are not what they are taken to be by the subject of them.

The issue between the two schools of thought is clearly defined. The psychiatrist or student of abnormal psychology classifies apparitions with subjective hallucinations, and in fact is content with calling them hallucinations without qualifying them as subjective, as he regards all such experiences as subjective without distinction. His most radical opponent insists that apparitions occurring under certain circumstances are not subjective phenomena, but representative of the reality of that which they appear to be. In other words, he thinks apparitions of a certain type and occurring under given circumstances are really discarnate spirits, and hence he refuses them the character of hallucinations of any kind. This is at least the naïve view of such experiences.

There are three types of apparitions which give rise to the distinction between veridical and falsidical. They are apparitions of the living, apparitions of the dying, and apparitions of the dead. Some of these are certainly explicable by ordinary causes and are to be treated as subjective or falsidical. But those which occur coincidentally with events at a distance and are not known by the subject of the experience, if they occur in sufficient numbers to compel the view that they are not due to chance, suggest some unusual cause. In the collections of the *Phantasms of the Living* and of the *Proceedings* of the Society for Psychical Research the numbers seem great enough to exclude the application of chance coincidence, whatever the final explanation of them,

and this fact has induced the final explanation of them as veridical, which means at least that they are in some way related to a definite and representative cause. But if so, why call them hallucinations of any kind? One school calls them this because it wishes to have them regarded as subjective and unreal, the other wishes to regard them as representative of reality.

The position which I wish to take in the case is one that is intermediate between the two schools. Whether this was meant by those who originally distinguished between veridical and falsidical hallucinations I have no means of deciding clearly. I imagine that it was, as there would have been no good reason for describing them as hallucinations while regarding them as veridical, unless it was meant to mediate between two points of view. But whether the position which I wish to take in this discussion has been anticipated by others or not, it is one in which I wish to maintain the possibility that apparitions may be hallucinations in their representative character and yet correlated with just such a cause as they most naturally suggest. This is to concede one point to abnormal psychology and to deny it another in its views of the phenomena.

I shall not here undertake to prove that veridical apparitions are either supernormal facts or indicative of the causes which they at least superficially suggest. That would require a large collection of facts and a discussion as lengthy as the labors which I have quoted above. I shall merely try to show from what we know of normal and abnormal psychology and

from the phenomena of ordinary and subjective hallucinations that this is possible, and hence we may leave to the future the collection of the evidence to prove it a fact. I shall therefore begin first with the general meaning of hallucinations and proceed from this to an examination of their causes.

The first general meaning of hallucinations is the fact that they attest the subjective activity of the organism or of the mind in the production of apparent reality. We found that even in normal sense-perception we had to admit or suppose that the organism or mind was a factor in its perceptions. Color, sound, odor, temperature, etc., were not representative of the stimuli even in normal sensations. The mind's reactions partook of the nature of its own action, as any physical object will react against impact according to its own inner structure and does not represent the merely transmitted energy of the object affecting it. A bell was the illustration of this law. The bell produces a sound according to its own nature rather than according to the sole nature of its cause or impact upon it. This being the law of physical phenomena, we must not be surprised at its occurrence in organic beings. So it is clearly illustrated in sensation and mental reactions, which are not supposed to represent the nature of external causes, or to be constituted by them. Hallucinations are particular proof of this view, and they serve as this evidence with special force because the argument holds good on the supposition that normal sense-perception is representative. No matter how firmly "common sense" may adhere to the conviction that

objects in the external world are exactly as they appear, it cannot maintain for a moment that the apparent objects in hallucinations are correspondent or representative of the apparent reality. It is precisely because we discover that they do not represent what we experience in normal perception that we distinguish them as hallucinations and imply that the cause of them is not there as in normal sensations. Similar phenomena occur even in normal experience, such as phosphenes when pressure is exerted on the eyeballs, or " seeing stars " when a blow on the head occurs. In hallucination of all types as recognized by psychiatry this disparity between stimulus and reaction or sensory product is the marked feature of the phenomena, and we feel compelled to regard the effect as a subjective product, whatever its cause. We do not dream of assigning it objective reality, at least in any such form or matter as we ascribe to normal stimuli.

The consequence is that we reinforce the doctrine that the mind is a primary factor in the nature of its experiences. Whatever doubt about such a view may be maintained in normal experience, we can have no doubt about its capacity in the abnormal to reproduce a simulation of reality in its hallucinations, and the same conclusion is sustained by dreams and deliria. When we find that normal experience also has its subjective aspect the result seems still more conclusive, and the subjective nature of mental products, even with any theory of their causes, seems so well secured that no question of it as a fact can be raised. We find a point at which the phenomena of hallu-

cinations and normal experience unite, and this is the subjective action of the mind in the production of its phenomena. The only difference between the normal and the hallucinatory facts is their different relation to stimulus. Neither are supposed to *represent* reality, but only to *indicate* it, the one showing a definite and regular relation to certain stimuli and the other an apparently accidental and irregular one. But in the actual appearance of the reality as presented to consciousness there is no constitutive or internal difference. Consequently with the assumption that even in all normal experience the sensations are subjective facts and not representative of the cause, we have this idea more emphatically indicated in hallucinations, and it enables us to say that the fact apparent in the hallucination is not real. Hence the implication in our ability to say that apparitions are hallucinations is that they do not stand for any such reality as normal experience would indicate.

The defendant of the " reality " of apparitions or of the external facts which they are supposed to indicate will have to admit the cogency of this contention. Hallucinations, whatever their causes, are such subjective phenomena that the classification of any fact with them must carry with it the implication that no such reality is indicated as is superficially apparent, and this suffices to exorcise " spirits " in the case, if we are obliged to use as our criterion of reality the standards of normal experience, as reflected in the ideas of " common sense " or representative perception.

But without disputing this general view of the case,

there are certain important facts which even psychiatry will have to admit, and which may indicate that its standard of judgment in such matters is precisely the representative one which its own doctrine of hallucinations claims to reject. If it concludes that hallucinations do not represent reality, it does so on the ground that normal experience does this in some sense. But with the fact that normal experience is quite as subjective as the abnormal and is yet indicative of external reality in its own assumptions, the student may return to the principle of normal experience and ask if that may not be applicable also to the abnormal, especially as there is similarity of kind in the two types of phenomena and as the admission must be made that hallucinations have stimuli external to the centres of reaction. This is simply to say that we cannot assume the naïve standards of normal sense-perception as valid representatively for determining the subjective nature of hallucinations, and then turn around to admit the subjective nature of sense-phenomena while we admit them to be indicative of a non-representative cause, without having to face the possibility that hallucinations may be indicative of external causes when they are not representative of them. We may simply press the fact that in normal experience the determination of reality is not effected by any representative relation between stimulus and sensation, but by the uniformity of certain causal relations which are supposed to involve externality without indicating its nature. With that in view we may be able to reconstruct the meaning of hallucinations.

The older meaning of hallucinations was that they were wholly subjective affairs, and they were even regarded as spontaneous productions of the mind, as opposed to externally produced normal sensations. This naïve view has been greatly changed, and they are now regarded as subject to the law of causation in much the same way as normal experience. Before applying this to apparitions it will be well to examine the general explanation of hallucinations which relates them as closely to normal sensations as their other characteristics distinguishes them from these. If apparitions are to be classified with hallucinations generally, and especially of the purely subjective type, we must expect them to accord with the same laws of causality. On the other hand, if hallucinations show certain definite relations to external causes, we may have reason to press this resemblance to normal experience as a significant fact in support of a view not at first suggested by them. I shall therefore summarize the principles and implications involved in subjective hallucinations as a qualification of that import which psychiatry has so long assigned them. I shall then take up the special case of apparitions and see how the doctrine may apply to them.

1. In the views of abnormal psychology the universal doctrine seems to be that hallucinations are, in some sense of the term, " externally " initiated or caused. The externality may be nothing more than foreign to the nervous centre reacting to produce them. But they are no longer held to be spontaneous phenomena. They are related to causes precisely as

normal experience is related, with the exception that the relation is not a normal one. Of course this "external" or extra-organic initiation is more apparent in the case of hallucinations instigated by peripheral and external stimuli, and the hallucination is due to abnormal conditions of the sensorium affected. The relation to normal experience is here fairly close. But the "external" initiation is no less true of the purely subjective hallucinations. This is unquestionable in the case of peripheral instances due to lesions or morbid conditions in the bodily tissue. The psychiatrist also believes, and in many instances he has the proof, that hallucinations centrally instigated, or produced by morbid psychical functions, are no less subject to causation that is "external" in the widest sense. The consequence is that, while we admit in hallucinations a difference in relation to reality as supposed by normal experience and a representative theory of perception, we assume that the same law of causality applies to them as to normal experience, namely, that they have an "external" cause, even though that "externality" be nothing more than foreign to the centres concerned. Some of them, as we have seen, have a true external cause, and all of them differ from normal sensations only in a correlation with that cause which is at least less representative of its nature than in normal experience. We conceive a certain relation between a blow on the head and the tactual sensation, but when it results in "seeing stars," we do not conceive that the relation between the "stars" and their cause is the same intimate or supposedly

representative one that we conceive in the sensation responding to the blow. This is the whole difference between normal sensations and hallucinations. The external cause is there, but it is not so related to the effect that we can perceive it in the same way that it is perceived in normal instances.

2. In normal experience the determination of causes of sensation is dependent on the directness or immediacy of the connection between certain facts and the uniformity of that connection in different individuals. It is not in the likeness of the object perceived to the sensation produced. That sensations are representative of the object is not assumed for a moment. The antithesis, if we may so speak, between sensation and cause may be as great as between hallucinations and their causes. The primary question is the uniformity of the coexistence and sequence in certain facts and their universality or multiplication in human experience generally. The cause in such cases means the fact which we have experienced as the antecedent or associate of the effect or event to be accounted for, and what we can expect to find when its presence is conjectured. In hallucinations this normal experience has not taught us to expect any particular cause either for the individual or for the race. If we could get any such uniformity of connection between hallucinations and their particular causes, we might form a different conception both of them and their associated facts. But it is the capricious and ununiform relations that prevent us in most cases from attaching the same kind of meaning to their occurrence that we assign to the con-

nections of normal sensations. But if we did find a certain fixed connection between subjective experiences and certain definite external events, we should be justified in supposing something like the causes which we assume in normal phenomena. But this uniformity would have to extend to like relations in different individuals, in order to exclude purely subjective influences.

3. In some cases we do find a certain uniformity between the hallucination and its cause. Often in fainting fits the subject sees a certain apparition; it may be a light, a human form, or any arbitrary object whatever. A similar phenomenon is often noticeable with epileptics. Others, at times of physical exhaustion, see certain types of apparitions. But two facts are noticeable in these phenomena. First, the apparent object is not such as can be tested by the other senses. Secondly, the same apparition is not perceptible by others under like morbid conditions. It is these facts which force on us the view that the phenomena are subjective productions. The cases are intra-organic, whether the stimulus be external or internal. Hence, though we find certain uniformities of coexistence and sequence in hallucinations supposed, they are not of the character to justify the assumption of a foreign reality of any particular type. The utmost that could be conjectured was that something foreign had affected the organism. We should have to discover certain uniformities of extra-organic stimuli and subjective experiences in which some identity of meaning could be observed before we could ascribe an objective

meaning resembling normal experience to the subjective phenomena. When the hallucination is due to intra-organic stimuli there can be no assumption of external realities either like or unlike the apparent object of perception. We must have hallucinations related to extra-organic stimuli, and so related that their uniformity with the individual or a multiple of individuals will justify the conjecture in favor of a special type of cause or stimulus.

4. Now apparitions of the veridical type seem to conform to this very condition of external causality inferrible from the circumstances. Those apparitions not correlated with any special event external to the organism in which they occur are of course intra-organic and subjective. But what we call veridical apparitions are so related to an objective and external event, namely, purely extra-organic causes, that they seem to conform to the standards by which we determine external reality in normal experience. It is not the fact that the apparitions represent human forms, living or dead, that makes them interesting, but the fact that they coincide with certain events not known to the percipient of them. This circumstance cannot be forgotten. It is the crucial circumstance in the whole question. Of course if such phenomena occurred in such a way to suggest chance coincidence the matter might be quite different. But their grouping about an event occurring at the time and outside the knowledge of the subject of them is the important fact to be accounted for, and not the form in which the experience takes. Hence it is not the fact of an apparition that creates

curiosity, but its coincidence with the event which the apparition seems to indicate. It is this coincidence that requires explanation. That coincidence is found in most cases to be with some friend's thoughts or experimental effort to produce an apparition of himself, or with a serious illness, or very frequently with the fact of death or dying. If such phenomena, measured against similar occurrences which do not indicate coincidence of any kind, were explicable by chance, we should not feel any temptation to treat them more seriously. But if reports of them be true, comparatively few occur in which a coincidence of some kind cannot be detected, and it seems that the coincidental instances are so frequent, related as they are to certain critical conditions in the life or thoughts of the perceived person, that chance does not appear to be their proper explanation. There is often, or perhaps usually, just enough indication in the experience or apparition to point definitely to the person or events concerned, and the causal relation seems as well substantiated as any instance of such causal relation traceable to intra-organic stimuli when the hallucination is supposedly subjective. With the proof that chance coincidence does not explain the occurrence of the apparition and that the events which must be assumed to be the causal agent are not intra-organic, we are placed in a situation where we must choose between considering apparitions an exceptional type of hallucination, if hallucinations they be, and their reality after the conception of the naïve mind.

I shall not here attempt to give the evidence that

there are such apparitions involving an external cause, as so often claimed, because I am concerned only with its possibility until more evidence can be collected. But it may be worth mentioning that the records already made by the Society for Psychical Research show such formidable suggestions of such an explanation that the matter will have to be considered from that point of view. The investigators did emphatically assert that the calculation proved they were not due to chance. They did not attempt to offer a positive explanation, telepathic or otherwise, leaving this matter to the individual student. If not due to chance and if due to external causes, whether the thoughts of living or deceased persons, they point to causes which have to be treated quite differently from the usual causes recognized in psychiatry. The only question that will remain is whether we shall still speak and think of apparitions as hallucinations, even when qualified as veridical.

5. If apparitions are instigated by the causes which they apparently indicate, the stimulus is certainly a very delicate one, and represents an unusual process. There are two things to establish in this question. The first is that delicate stimuli can produce hallucinations, and second that apparitions may be regarded as hallucinatory without making them purely subjective in their causation or meaning. The same facts will bear upon the solution of both problems.

That very delicate stimuli will result in hallucinations is a part of the fundamental conceptions of psychiatry. In normal sense-perception the stimuli

seem to be coarser, so to speak, than those which excite similar products subjectively in the phenomena of hallucinations. Irradiation in secondary stimuli represents very delicate agencies. They are not effective in ordinary conditions, and often represent influences on the organism that lie below the threshold of consciousness; that is, that are not intense enough to produce an effect on the normal sensorium.

Still better illustrations of this delicacy is the fact that the state of mind will give rise to illusions and hallucinations. I have already called attention to the circumstance that mental preoccupation will distort a sensory impression so as to change its appearance. The illustration of reading words wrongly is an instance. The state of the mind produces an apparent reality which is not represented by the stimulus at all. In the more morbid forms of mental influence this is still more striking. The mind may be so intensely occupied as to wholly ignore its sensations and apparently see objects that represent nothing but its thoughts and expectations. It is very common among the insane, and can be produced, as indicated above, by hypnotic suggestion. In such instances mere thoughts give rise to apparent realities. This is probably the case in dreams. This means that mere mental states can produce on the sensorium the effect of actual sensory stimuli. With this once granted, it is only a question of evidence whether similar extra-organic stimuli might not produce the same result. Such illustrations as I have given are of the intra-organic type, and we should only have to obtain evidence of telepathy to extend the same

possibilities to the extra-organic stimuli having the character of mental states.

Before taking up this question of extra-organic mental stimuli, I must call attention to another type of mental influence on hallucinations. I refer to the transmission of causal influence from subconscious states to the normal consciousness. This may be illustrated in the phenomena of crystal visions, where latent memories are evoked in such a manner as to appear as sensory realities. But the most important type of these mental stimuli eliciting hallucination and involving transmission of influence from subconscious to conscious action is illustrated in cases of secondary personality, where the subliminal action seems to deliberately influence the normal consciousness to see realities when they are not actually present. The best instance of this is the case related by Dr. Morton Prince.

This case to which I refer is a remarkable one of multiple personality. I cannot here undertake to explain it fully for the lay reader. The chapter on secondary personality will explain it sufficiently. All that we need to know at present is that our minds are capable of subconscious action not known or remembered by our normal stream of consciousness, and so may simulate the action of an independent person. Many think that this subconscious action is another person, but there is no excuse in this day for this belief, natural as it may be for those who measure their own personality by that of which they are conscious. The one thing that distinguishes the two or more personalities in all of us is the fact

that the memory connection between these different streams or groups of mental states is severed. One set of ideas is dissociated from others, and the normally conscious states are especially dissociated from the subconscious ones. They may interact and produce effects on each other, but not of the kind involving any memory of the fact, or any consciousness of it, or conscious voluntary relation to the effect. With this preliminary account of what we mean by secondary or multiple personality, we are prepared to understand the following facts in the remarkable case of Dr. Prince.

It was one of several personalities, but my purposes here require me to take account of only two of them. One of them, which I may call A, was a mischievous, impish little witch, if I may so describe her, full of tricks and jokes which she would play on another personality, which I shall call B. The interesting point here, however, is that A was able to induce hallucinations in B. For certain purposes A, who did not like the other personality, would induce all sorts of hallucinations in B, such as spiders, toads, sensations of cold, absence of limbs, etc. This means that the subconscious personality was able to produce in the surface consciousness the appearance of physical objects, and so illustrates in a peculiar form the fact that mere mental states can give rise to hallucinatory phenomena; a fact, of course, sufficiently well known in insanity, but not so clearly shown there as in the intelligent and deliberate efforts of A to influence B in the case before us. This A would describe afterward in automatic

writing what she had done and why she had done it. The story must be read to be appreciated, and I can only emphasize here the fact that one state of consciousness not introspectively known to another could induce an hallucination which was cognizable by the other. The fact illustrates an indirect mode of communication between two streams or groups of mental states, and the capacity of producing apparently real effects or objects there.

All these illustrations of delicate causes of hallucination are intra-organic. It remains to show that similar extra-organic stimuli can produce like effects. With the phenomena of hyperæsthesia we ought not to think it impossible. Moreover, with such experiments as Lehman and Hansen performed, in which unconscious "whispering" or involuntary sounds produced by merely thinking of objects had the effect of sensations on a percipient, in which there was no consciousness of the stimuli, we may well imagine what may be possible in hyperæsthesia. There is no hard and fast line between what may be produced by intra-organic stimuli of a delicate character and extra-organic stimuli of a like nature. Let us see whether there is any evidence of such phenomena.

6. The phenomena of telepathy exhibits the influence of delicate extra-organic stimuli. I cannot here undertake to show that what is called telepathy is a fact, but must refer readers to the data in the *Proceedings* of the Society for Psychical Research for this conclusion. I can only indicate what I mean by the term. To me it denotes nothing more than

a coincidence between two persons' thoughts which requires a causal explanation. By this I mean, of course, that the phenomena educed in its support are not explicable by chance coincidence, but show some causal nexus which has yet to be determined in its mode of action. Whatever that mode of action, the phenomena exhibit the supernormal influence of one mind upon another in a manner not explicable by the ordinary agencies of sense. In some way the thoughts of one person make themselves known to the mind of another. The fact is very rare, and is much more rare than the general public supposes. But it occurs often enough for us to suppose that extra-organic stimuli of the nature of mental states can produce effects on the minds of others. The only question that remains is, whether these effects ever take the form of hallucinations.

There has not been as careful observation in most of the experiments illustrating telepathy as there should have been for the mental states of the percipient. Apparently in most instances the thoughts of the agent were obtained by the percipient without any hallucinatory tendencies, as no report on this matter was made. But in certain cases where the imagination and memory of the percipient were participants in the results, which still contained enough identity with the thought or drawing of the agent to prove coincidence, there is trace of hallucinatory influences. In one set of experiments which I myself performed there were very clear evidences of hallucinatory effects. The subject described what he saw, saying that he saw many geometrical figures floating

before his vision and that he picked out the most vivid instances. These turned out in each case to be the correct ones. In a spontaneous instance a man was smoking a cigarette and suddenly saw a phantasm of his brother's face with the hand on the side of his head, the skull having been crushed in. In a moment the door-bell rang, and a reporter said that the percipient's brother had had his skull fractured on the side of the head. Inquiry at once over the telephone at the newspaper office confirmed the facts, but it was said that he was not so badly hurt as at first supposed. Knowing where the brother was to be at that hour, inquiry was made over the telephone at this place, and the brother responded to say that he was well and having a good time, no accident of the kind having occurred. It was a case of mistaken identity in the newspaper office. The important point is that the percipient had an apparition of his brother, though the reporter's mind probably did not have a visual picture of the brother before it. The thought of the reporter appeared as a physical object, and as a remembered object in the experience of the percipient. That the phenomenon was hallucinatory there can be no doubt, though it was veridical and not merely subjective. The incident, of course, is not evidence of telepathy as we should like to have it, but that phenomenon once proved, we can readily accept this instance, which came to me from a perfectly reliable source, as illustration of the claims in question. Another instance which I have on record shows hallucinatory effects of telepathy at great distances. The percipient saw

apparitions of the agent's thoughts, that is, apparitions of the objects he was thinking about.

But if experimental phenomena are scarce, there is a type which the believer in their telepathic explanation will have to accept as supporting the doctrine which I am indicating. Coincidental dreams and apparitions of the living, if they are explained by telepathy, will have to be regarded as telepathically initiated hallucinations. The number of such phenomena is very great and it would require several volumes simply to quote them. I can only refer the reader to *Phantasms of the Living* (2 Vols.) and the *Proceedings* of the Society for Psychical Research for innumerable instances. They represent definite visual and auditory phantasms in connection with the actual or supposable thoughts of others at a distance, and if explicable by telepathy must be regarded as hallucinations thus instigated. In any case, they represent extra-organic stimuli of a delicate type, and most probably, in many cases most certainly, coincidental with the thoughts of definite persons so indicated in the experience.

7. If thoughts of the living can produce hallucinations at a distance, it is but a step to the supposition that the dead, if they actually survive death, can produce similar effects. Of course we have first to produce evidence that they do survive before we can explain any individual instance of apparition of the deceased by such capacities. But it will be only a matter of the frequency of them, of the conditions under which they occur, and of the supernormal information communicated by them, to prove that per-

sonal consciousness does survive, and the evidence for this may carry with it the indications of the phenomena which I am discussing. There are on record a sufficient number of apparitions of the dead to suggest, if they do not prove, that they have an explanation similar to the apparitions of the living; namely, as telepathically induced by the person involved in the apparition. Of course if we do not accept the explanation that coincidental dreams and apparitions of the living are telepathic, we should hardly refer the apparitions of the dead to the same type of cause, though we should probably have to accept an explanation which involved the survival of personality after death, whatever else we had to assume to explain the differences in the whole class. But assume that telepathy is involved in coincidental dreams and apparitions of the living, and the theory that hallucination is the effect by which the identity of the person or event is manifested becomes a foregone conclusion, and the most natural interpretation which would follow for apparitions of the dead would be that they were telepathically initiated hallucinations instigated by the deceased.

The consequence of this is that "spirit clothes" ought not to give the psychologist any perplexity. He manifests no special perplexity at the appearance of clothes in apparitions of the living. There is difficulty in the apparitions of clothes of the living, but neither is it more than the difficulty of telepathic phantasms of any kind, nor is it so great as the common mind must suppose in apparitions of the dead taken for indicating the reality of what appears.

The common mind comes to these phenomena with the representative theory of perception, and with this we cannot easily accept the realistic interpretation of apparitions of the dead. We cannot easily believe, if we can at all believe, that the dead, assuming that they exist, duplicate the phenomena of the physical world to such an extent. But after accepting without hesitation the phenomena of clothes and other physical accompaniments in the apparitions of the living, and accepting them as telepathic hallucinations, there ought not to be any difficulty in explaining apparitions of "spirit clothes" in the same way. To him who does not accept the representative theory of sense-perception the case is clearly possible, and it harmonizes completely with the whole doctrine of hallucination which supposes external causes of the phenomena, but does not conceive those causes as representative in their effects. They are much less apparently so than normal experience, but exhibit a complete antithesis between what seems to be and what is taken to be the real cause.

This view of sense-perception is clearly indicated in telepathic hallucinations. The phantasm cannot be easily assumed to *represent* the thought of the agent. The phantasm takes the form of a sensory object, when it is hallucinatory at all in telepathic coincidence, while we never conceive inner states of consciousness or thoughts as having sensory form. The fact that many of the telepathic messages do not take the sensory or hallucinatory form, but are mere thought-impressions or unconscious and auto-

matic reproductions of what is in the mind of the agent, shows unmistakably that the form which the evidence of telepathy takes is not necessary to its character. The distinction between the cause and the effect is then clear, and the same general principles apply to the interpretation of such coincidences as we apply in normal experience. The only question which we have to answer is whether the coincidence between the thoughts of living persons and the apparitions of the living shows that the phenomena are not due to chance; and once admit causality into their explanation, we have extra-organic agencies of a mental type to reckon with, and there may be no limit to their influence in producing similar coincidences. All that we should require would be extreme caution in estimating the evidence or the claims that such causes actually did operate.

8. The conclusion of this discussion is that we do not require to wholly deny that apparitions of the dead are hallucinations. We have found a point of view in which we can mediate between this explanation of them and the claim that they indicate an objective reality occasioning them. The fact is that the doctrine which explains them as subjective hallucinations, meaning that they do not indicate the objective cause apparent in them, is subject to two difficulties. The first is that it ignores the evidence that the experiences are objectively or extra-organically initiated. In other words, it assumes chance where it would not do so in the subjective experiences. The second is that its contention obtains its

force entirely from the assumption of the representative theory of sense-perception. This theory supposes that in normal experience the external object is represented by sensation, that we see it exactly as its nature appears to be. Accepting this view of normal experience, the contrast or antithesis between it and what is found to be the case in hallucinations serves as an evidence of the subjective nature of the latter and conceals the circumstance that hallucinations have causes analogous with the causes of normal sensations. Hence when we give up the representative theory of normal experience, we find that the relation between it and hallucinatory sensations is closer than we at first suppose and that the only thing required to establish an objective or extra-organic stimulus for hallucinations is such a uniform and general coincidence between the hallucination and a cause which we would have to assume in the normal instances that we should be forced to postulate the external reality to account for the fact. That is to say, if we find a certain type of subjective experiences coincidental with extra-organic events to an extent beyond chance, we will have to conclude to the external causality, precisely as we do in all other scientific phenomena. It is a question of the number of coincidences between external and internal events, and when this is supposed to be causal the other matter is determined as it is in all other instances. We may call the subjective effect hallucination if we like, but the fact will not eliminate the principle of causality from it nor the special cause which the facts suggest, though the phenomena do not represent the

nature of that cause any more than they do in subjective hallucinations. We simply distinguish the cases as veridical to indicate that they have a given objective cause, such as the facts justify us in supposing.

CHAPTER VIII

PSEUDO-SPIRITISTIC PHENOMENA

I have discussed illusions and hallucinations in their more technical meaning as understood in psychology and psychiatry, and thus limited their import to sensory phenomena, which they technically are. But the same terms have a general meaning which applies to all sorts of erroneous conceptions and judgments, and associated with them is another term which sometimes does service for both of them. It is the term *delusions*. This also has a technical import and denotes functional disease of the intellectual activities. They are such as mistaken cases of identity, for example, thinking one is Cæsar, Christ, God, or other personality, "illusions" of persecution (paranoia), religious ecstasy, etc. These are typical cases of insanity, and involve disturbances apparently only in non-sensory centres. Sensory disturbance may at times also be concerned, but it is not essential to delusions that sensory affection should be involved, though hallucinations may be the sequence of delusions and conceal the real source of the trouble. But delusions proper may involve nothing but diseased functions of the intellectual

activities, and so represent errors of judgment as unavoidable as are certain types of hallucinations.

But the term delusion has a general meaning almost synonymous with illusion on the one hand, and with fallacy on the other. When we wish to indicate that a person is mistaken in his judgment and mistaken in a manner difficult to correct, we speak, at least loosely, of his delusion, and at times we as freely use the term illusion to describe similar errors. In this chapter I wish to describe a class of phenomena, therefore, which involve errors that we cannot always call delusions or illusions in the technical sense of those terms, and which are seldom so pronounced or deep-seated as diseased intellectual functions, but which have all the invalid nature of such phenomena. I shall, therefore, use the terms here in an untechnical sense to describe such sources of erroneous judgment, when it is necessary to describe them at all, while there may be instances in which their technical import will be involved also. But I shall not treat of delusions in their import of insane conditions of mind. I have only a type of phenomena to deal with that are not strictly sensory illusions or hallucinations, and yet are as fruitful a source of error as they can possibly be. They are caused by more than misadjustment of the various functions of the mind and their relation to external stimuli. They involve imperfect knowledge of scientific method.

The history of Spiritualism shows where the trouble begins and what is its cause. And I do not mean Spiritualism in the modern narrow sense,

though what I mean includes this. By Spiritualism I mean the doctrine that opposes Materialism and so affirms the survival of the soul after death. Its modern narrow meaning, which identifies it with a certain mode of communication with the dead and cuts itself away from the previously acquired knowledge of science and philosophy, is not the old and respectable use of the term. Spiritualism as a philosophic theory did not necessarily imply communication with the dead, and obtained its meaning from all those facts and arguments which were used to refute the materialistic theory of human consciousness. This conception of it, however, was the outcome of the efforts to give Christianity a philosophic basis. The fact is that Christianity probably originated in psychic phenomena. The Gospels are certainly full of references to events which we should to-day classify as psychic, or claiming to be psychic phenomena of importance. For example, the story of Moses and Elias appearing to Christ on the Mount, the apparition of St. Paul, the day of Pentecost, in which people were said to have spoken in unknown tongues, the appearance of Christ to his disciples on the way to Emmaus, Christ walking on the water, when the phenomenon was taken for his spirit or apparition, Christ astonishing the woman at the well by telling her that the man she called her husband was not her husband, possibly even the story of the resurrection, and many others. It is not necessary to suppose these stories true in order to accept the hypothesis that Christianity was suggested by them. The main point in this matter is that they

were believed. Hence, whether true or not, the same general type of real or alleged phenomena gave rise to Christianity that are now the subject of more careful investigation. But they were not examined scientifically in that age. Then, as now, they were the property of the uneducated mind, and the philosophers ignored them, and lost their opportunity either to repudiate them intelligently or to prove their real basis.

But as time passed, the force of the alleged facts on which the first impulse of Christianity rested decreased and men had to fall back upon a philosophic system for the defence of the doctrine which had received such an impetus with the belief in these allegations of the supernormal or what was long called the supernatural. The philosophic view lasted as long as civilization was aristocratic, and intelligent men could do the governing and enjoy the education that was to be had. But Materialism and democracy came to supplant, one of them, the ancient philosophy, and the other, the ancient methods of government. The intellectual attitude which mediated between Spiritualism and Materialism was agnosticism: the political doctrine which mediated between imperialism and anarchy was democracy. The intellectuals are cut out of the latter and are left to philosophic pursuits, if they have the means, or to pandering to the multitude, if they have not the economic resources on which to depend. This agnosticism, which maintained that the existence of God and of immortality could not be proved, obtained its present status, one of great strength, from

the philosophy of Immanuel Kant. He it is that is responsible for the modern narrow eonception of Spiritualism. This is not because he advoeated such a view as that term now stands for among people in general, but because he made it useless to argue for the belief in a future life. Though he used the term Spiritualism in his work on "Pure Reason" as the proper antithesis to Materialism, he did not regard its position as a tenable one. He did not attempt any sueh refutation of Materialism as did Berkeley, and so left the field of speculation free to the advocates of that doctrine. Swedenborg's conceptions took the plaee of the old Spiritualism. He was the contemporary of Kant, and the latter's work on *Dreams of a Ghostseer*, inspired by his study of Swedenborg, and admitting the possibility of communication with the deceased, if they existed, though qualifying the eommunications by the abnormal condition of the medium through whieh they come, on this aeeount virtually left this coneeption of Spiritualism as the only one that eould take up the argument against Materialism.

The consequence was that the whole problem of a future life was left to those who believed in the possibility of communication with the dead, the intellectuals having taken to curious speculations on any and all subjeets that had no human interest. The defence of Spiritualism was turned over, as religion generally was, to the unedueated, save as a kind of dissipation for the emotional and æsthetic. The chasm that had always separated the common man and the philosopher was widened, the philosopher

having abandoned the last belief which had previously given him authority over the uneducated masses. Democracy came in to deprive him also of political authority, and with an aristocratic feeling to cherish, he would neither educate nor govern those whose interests still lay in a human interpretation of the cosmos. He simply sneered at them, and contrived to get his living out of their labor. His philosophy was for the schools and not for man. With this widening of the breach between the philosophic and the naïve mind there came a removal of the restraints on judgment as well as the loss of influence by the intelligent upon those who sought the consolation of hope and the defence of their ideals in regard to the meaning of the world. Spiritualism was left for its conceptions to the methods and claims of charlatans. Though it was in its very inception, both in its primitive form and in its revival by Swedenborg, a concession to the methods of science, the class that should have taken its claims into serious consideration, as Kant did in spite of his later evasion of it, turned its back upon the matter and allowed its cause to be espoused by adventurers for its priests and by fools for its votaries.

It took the revival of Spiritualism after the Fox sisters to bring it to its lowest stage of development. Their phenomena, which consisted largely of " raps " in answer to questions, suggested various forms of improvement, and though they later confessed to trickery in their performances, explaining the " raps " as having been produced by their knees and toes, this confession did not put an end to similar

attempts at fraud. In fact the methods for producing illusions and committing fraud in the name of communicating spirits were developed and multiplied so as to cover rope-tying tricks, cabinet performances and materializing seances, and slate-writing. The interest of intelligent people in such phenomena declined after the exposures and confessions of the Fox sisters, and the claims of the spiritualists were left to the credulous for study and maintenance. Finally the *Report* of the Seybert Commission in 1887 effected a decided check to the claims and interests of Spiritualism, as it had now come to represent physical phenomena, and it would hardly have revived except for the work of the Society for Psychical Research. The publications of this body contain so much evidence for something supernormal, and its members have so generally endorsed the claims of telepathy as to raise again some presumptions for beliefs extending beyond mere communication between living minds. In the meantime the conception of Spiritualism had been determined by the type of phenomena upon which its claims were based, and these were such physical facts as materializations, rope-tying tricks, mysterious rappings, slate-writing, and dark seances. That it should be a psychological problem no one seems to have dreamed or to have urged. The conception of physical miracles still prevailed to determine the method of approach for the solution of the problem. Hence a term which once had a reputable import became a synonym for charlatanism and fraud. It connoted the methods of adventurers and jugglers

and the beliefs of the most ignorant. There has been no term but Idealism to take the place of the older and more respectable eoneeption of the faets supposed to point the way against Materialism, and this was equivoeal. But intelligent thinking seemed to have no other resource for eseaping illusion and misunderstanding. Unfortunately it is still necessary to notiee and teaeh eaution in regard to the phenomena and methods concerned with the question of the destiny of the soul or human conseiousness. Men are not eontent with an agnostic creed, but they are as little inclined, when they are intelligent, to run after such evidenee of the transeendental or "supernatural" as prevails in the exhibitions of the average spiritualistie performanee.

I shall not enter further into the history of Spiritualism. Readers interested in it may consult such works as Truesdell's *Bottom Facts Concerning Spiritualism*, and Podmore's *Modern Spiritualism*. I have briefly outlined its history for the sake of illustrating the development of the eoneeption of its problems and the persistent antagonism whieh philosophy and seienee exhibited toward it; an antagonism forced on intelligent men by the degenerated and depraved idea of evidence which the common mind had shown in its treatment of the issue. The consequenee of agnosticism, as I have indicated, was the removal of the eommon ground of interest in philosophie and religious belief, and the great human issues were left to the uneducated while the eurious questions of speeulation were confined to aeademie walls. No compromise seemed possible

between aristocratic and democratic interests, and the vulgar mind assumed a monopoly of the ways and means for proving or defending the belief in a future life, with the natural result that it became a prey to illusion and folly.

I propose, therefore, to examine the difficulties which this mind has to face in its contentions for physical miracles in the attempt to prove spiritualistic claims. There are two general types of phenomena to which men have appealed in this controversy. The first is what I have called the physical phenomena: the second is what I shall call the psychological phenomena. In some narratives of experience both types are associated, and this regardless of the question whether either of them is to be accepted as genuine or not. I am now concerned only with the definition or classification of what is alleged. The physical phenomena are such as table-tipping, slate-writing, materializations, rope-tying, and various cabinet performances. The psychological phenomena are apparitions, mediumistic "communications," and such as are classified as secondary personality by skeptics, telepathic coincidences, and clairvoyance, and perhaps premonitions.

I shall insist that these two types of phenomena shall be kept radically distinct from each other. The spiritualists generally have not distinguished between them, but have quoted them all alike as in favor of their theory. They may ultimately prove to have at least some right on their side, but with this possibility I have nothing to do in the present discussion. We have not yet reached any such assurance regard-

ing the facts as will justify our classifying the two types under the same general causes. The classification which has been adopted has been with reference to their relevancy or irrelevancy to the spiritistic hypothesis. Physical phenomena must be excluded at once as not of themselves in any respect evidence of spirit action. The only phenomena that can pretend to have any such relevance are the psychological. Even these have to be subdivided into telepathic, clairvoyant, premonitory, and mediumistic or spiritistic communications. And this last class is relevant only when the facts bear directly upon the personal identity of a particular deceased person. When the problem is regarding the existence of discarnate spirits, it is one that can be decided only by such evidence as would prove their personal identity. What they can do other than this must wait upon the proof of identity and we can assume nothing but the power to tell incidents of their earthly past. We cannot even assume how they can communicate with us. This must be proved to be a legitimate hypothesis by facts which exclude all other explanations. Anything else that they may be supposed to do must have other evidence than the incidents proving personal identity. Hence coincidences showing a causal nexus between the thoughts of living persons and knowledge of physical things and events not known to the subject evincing it, and premonitions along with them, will have to be excluded from the evidence of discarnate action until the identity of deceased persons has been proved. Much more must we exclude physical phenomena from the evidence,

as it neither bears upon the question of identity nor accords so easily as the psychological phenomena with our existing scientific knowledge.

The reliance on the physical phenomena of Spiritualism is a relic of the belief in miracles. One can understand why this point of view was so important in antiquity. The theory of the physical universe at that time was a coarse type of materialism, and the religious mind appealed to real or alleged facts which that view could not explain, and it laid most stress on physical phenomena not explicable by existing theories. Its object was to prove a spiritual world which was then a refined matter. But we know what became of the reliance on physical miracles. The phenomena reported as such were either rejected as impossible or regarded as so defective evidentially that they could not be used to support a theory. The time came when an appeal to phenomena of this kind was tantamount to an abandonment of the case, and it is much the same with such phenomena to-day. No doubt physical exceptions to known laws of material action would prove much, but they would not prove spirits. The time is past when they can be used for any such purpose. It is not enough to establish a fact beyond ordinary physical explanation. This may suggest a presumption that there is more than is dreamt of in our philosophy, but it will not assure the belief in spirits. The development of philosophic thought has taken us far beyond the ancient conception of spirit. We now associate spirit with conscious personality, while antiquity was satisfied with something immaterial, whether personal or not,

though it included the personal in its idea of spirit. But in our more definite conception of it we insist that personal consciousness is its essential attribute, and any phenomena which do not prove this function of it are not acceptable as evidence of its existence.

There are two types of the physical phenomena. Those purely such or unassociated with intelligent messages, and such as are associated with alleged communications with discarnate spirits. The first class consists of such as raps, the movement of physical objects, rope-tying, and materializations without messages. The second type consists of raps with messages, slate-writing with messages, materialization with messages, and table-tipping with messages. The irrelevance of the former has been sufficiently discussed. Whether genuine or not, they have no pertinence to the issue. They may represent phenomena worth investigating for various reasons. But they cannot be used in support of a spiritistic hypothesis, at least in its initial development. They occupy a secondary place in the problem.

The second class is more relevant, because it purports to possess communications from a transcendental world. But there is a fundamental difficulty with physical phenomena of this kind. They involve two separate problems. The first is the question of the process in producing the physical effect, and the second is the source of the alleged message. Suppose we take as a concrete instance slate-writing and its messages. We have two things to determine: (1) How the message got on the slate, and (2) whence came the message. The writing on the slate pur-

ports to be inexplicable by ordinary agencies. It claims to have been done by processes that contradict all that we are accustomed to accept as intelligible in the material world. In addition to this miracle the message purports to come from beings whose existence has also to be proved by the alleged facts. Hence in phenomena of this kind we have two problems to solve instead of one, and by insisting on such facts we only complicate our issues. What we need above all things is to simplify them, if this be possible.

In the psychological phenomena we have but one mystery, and this is the source of the messages. The apparition, which is one of the phenomena to which appeal is made, claims to be an experience by the subject and to represent something which is either intelligible as a subjective hallucination with which we are quite familiar, or it is as credible as telepathy, which produces similar effects on the mind of percipients. In cases of automatic writing the writing is not regarded as miraculous, but is a phenomenon with which we are familiar in instances where we do not suspect or accept anything as supernormal. The *modus operandi* of the phenomena is in no respect mysterious to us or inexplicable by ordinary means. The only problem which we have to solve in such cases is the source of the intelligent messages. All but this may be assumed to be action of the subject according to well-known laws.

With slate-writing, however, and other similar physical phenomena, the case is quite different. We have to explain both the source of the message and

the method of producing it on the slate. The usual treatment of the phenomena is not this, but assumes that the phenomenon is a simple one explicable by the same cause. But as we may assume and do assume in the psychological phenomena, that the phenomenon as it appears involves action of the subject revealing it, we should also be able in physical phenomena to explain the physical aspect of it in this way and to leave no mystery but the source of the message. But the claim that the effect is spiritistic as well as the source of the message is to require us to believe more than our existing scientific knowledge will permit for the present. If only the medium and advocate of such phenomena would frankly admit that the writing or physical event was produced by the medium, we might study the other question with more patience and might adopt means to exclude the medium's previous knowledge of the facts communicated. But when we have to prove also that the writing or physical event has not been produced in any normal way, we impose two tasks on ourselves. First we have to take measures to prove that the medium could not have done the writing, and secondly we have to prevent previous normal acquisition of evidential information. This is simply to double our task and to expose our theory of the supernormal character of the phenomena to the accusation that they contradict the known laws of physical action, while the psychological phenomena do not contradict these, and present the minimum of facts not explicable by the ordinary laws of mind, and may fall even under these, if telepathy be admitted as

possible. If we have the facts which relate most naturally to the personal identity of deceased persons, we might assume that the telepathy is from such beings, as an explanation of them, all the concomitants of the phenomena as they appear being referable to the subject in which they occur. But the physical phenomena have no conformity with known material laws to make them credible and so are much more difficult to prove.

Let me analyze the case and show what suppositions are possible in physical phenomena. Taking the concrete instance of slate-writing, we may suppose (1) that both the writing and the message are by the medium. (2) We may suppose that they are both effected by spirits. (3) We may suppose that the writing is by the medium and that the message is from spirits. (4) We may suppose that the medium has fraudulently obtained his information and fraudulently put it on the slate. (5) We may suppose that the medium has obtained his information supernormally and fraudulently put it on the slate.

Now the psychological phenomena show us that the primary question to settle is the source of the messages and that we need not care how they are given if we can show that they have not been previously acquired by normal means. Hence we should not care how the messages got on the slate or were written if only we can assure ourselves that the facts have been supernormally acquired. In cases like Mrs. Piper we actually see the message written on a pad before our eyes in broad daylight. Nothing in the physical production of the phenomenon is done out

of sight or in the dark. We have only to prevent the normal acquisition of the information conveyed, and this is much easier than to prevent the medium from doing the writing on the slate. It is clear, therefore, that the simplest method is to have the message written in sight, as this removes the complications of the phenomena and renders possible the kind of scientific observation which is so necessary to reduce the amount of suspicion and accusable fraud in such cases. Hence the physical phenomena must take a secondary place in the problem. They do not guarantee the existence of spirits when they are supposed to be genuine, and they do not eliminate fraud when the messages are supposed to be supernormal, while the supernormal is more easily obtainable without them altogether.

Take again the alleged phenomena of materialization. These have the facts of apparitions, whether veridical or subjective, to mislead the believer. The acceptance of apparitions, with the circumstance that they represent an apparently visible reality, suggests the credibility of the "realities" of the materializing seance. Besides this fact there is the long-standing belief in physical miracles which were supposed to be consistent with other knowledge. But there is an equivocation in the very use of the term. We are never sure whether the believer means materialization or etherealization. We might assume, as we must on the reality hypothesis, the ethereal nature of apparitions. This is supposing that they are not veridical hallucinations. Granting the existence of either ethereal realities represented in apparitions or verid-

ical hallucinations pointing to such a reality not represented in the phenomenon, we might well admit the possibility of such apparitions under mediumistic conditions. But such an admission would not carry with it the credibility of such claims as are usually reported from materializing seances. By materialization the believer often, if not always, means the physical reformation of the body which the soul has once cast off by death. It is supposed that the spirit has power to make or form matter at pleasure and to appear in its genuine physical embodiment and disappear with equal ease.

Now without impeaching the testimony of those who report such phenomena and without accusing them of illusion, it is fair to ask this class if they have ever seriously thought of what demands they make on scientific minds when asking that such claims shall be believed? In the age when matter was supposed to be a creation of spirit it might not be so difficult to accept phenomena involving this assumption, but in an age when the indestructibility of matter and energy is assumed, a man must have little sense of humor who expects stories of materialization to be easily believed. He must also have as little sense of humor if he supposes that scientific men will accept it on the evidence of phenomena occurring in darkened rooms and excluding such investigation as the claims demand. It is impossible for any sane man to cast aside the well-established laws of matter and its persistence at every assertion of a spirit materializing a body for itself and then disappearing without any apparent disturbance in the physical

world about it. Such a claim would have to be subjected to as scrutinizing an investigation as is given to the claims of radiobes, the transmutation of the elements, radio-therapeutics. Such an examination has never been made, and darkness is not favorable to it, to say nothing of the contradiction which the alleged phenomena represent with the fundamental law of matter. Other discoveries have not contradicted the known laws of reality, though they have modified or extended them. But no claim whatever has been made, except by the believer in materialization, for the existence of phenomena in contravention of the accepted indestructibility of matter in any such manner or with any such ease as the acceptance of materialization implies. Scientific standards will have to be accepted and conformed to, or incredulity can be the only sane attitude of the intelligent mind. The testimony of learned men is not sufficient. Too many learned men have been fooled to rely implicitly on general intelligence in such things. Two considerations will have to be religiously observed before any allegation can be respected. The first is that an immense quantity of experiments in various conditions and with various people must be undertaken and a plausible result attained. The second is that the conditions under which the phenomena occur must be such that suitable observations can be made and the possibility of fraud excluded. Mere testimony involving the judgment of the experimenter will not suffice. This may justify investigation, but is not evidence. The whole case must rest on an account of the conditions and results which will render

probable the claims made without reliance on the mere authority of the experimenter. But the actual conditions under which such phenomena are said to occur are a fatal barrier to scientific observation, and make anything but skepticism an incautious attitude of mind.

I have thus far treated the physical phenomena of Spiritualism as if they had no difficulties to face except their relation to the existing body of scientific knowledge and as if they were to be as seriously considered as any new discovery in the field of physical science. But the fact is that they have much more serious objections than the prejudice of physicists to meet. I have assumed that observers and reporters of them were qualified to make good their testimony and that honesty in this testimony made it acceptable. But in reality we are not entitled to any such assumption. The prevailing belief is that honesty is a sufficient qualification to make any statement acceptable or credible. This assumption is an inheritance of the controversy about miracles and the authenticity of certain Biblical records. We have had it taught that the honesty of the witnesses proved the trustworthy nature of their narratives, and we have accepted this criterion without reflecting that a man may be treated as truthful in his intentions though he does not report his facts correctly. It requires much more than honesty to tell the truth in many situations. A man must have the intelligence that can observe and report correctly and accurately what is done in his presence. Good judgment is as important, perhaps a more important qualification

for telling the truth than honesty. One needs experience in dealing with the things observed and reported in order to give a true account of them. Education and long training and experience with certain complicated matters are absolutely necessary in order to tell anything whatever accurately about them. Ignorant honesty will not secure our statements. It must be intelligent honesty, and this intelligence must extend to a technical and detailed knowledge of the phenomena purporting to occur. Otherwise our report of them must be subject to a certain amount of suspicion and discount. We must not insist that our honesty is a sufficient guarantee of the genuineness of our experience. We may be truthful and yet not tell the truth, if we may be allowed a paradoxical way of putting the matter. We may be veracious in our statements and yet not tell the facts as they occurred. The proper guarantee of correctness is good judgment as well as moral integrity, and if we lose sight of this fact we only expose ourselves to difficulties which we had not expected and which we cannot meet.

There is another fact which reporters of physical phenomena of the kind under consideration will not recognize. It is their liability to illusion in the observation of them. We have placed such a price on intelligence that men do not like to admit they can be fooled, and they go on in confidence of their proof against illusion and only unfit themselves for escape from the very mistake which they claim does not occur. We are too unwilling to admit that we are exposed to illusions. We want our auditors to think

that we are sharp and alert, and we go on thinking and talking as if we were safe from error. It would be much better if we were perfectly conscious of our liability to illusion, as that would itself be a protection against it. No man is fooled who knows that he is fooled, or liable to be so. Such a person can suspend his judgment. He knows when he has failed to discover all the facts, and if he is familiar with jugglers' tricks he knows how to reckon with situations in which it may be impossible to observe all the facts, and so may not allow himself to be deluded with the idea that he has seen all that is necessary to give an adequate account of the phenomena. The phenomena which I have illustrated in the chapter on Illusions show that all of us in our most normal experience have our inevitable illusions, and we may as well admit that we cannot escape such liabilities in those events which at least lie on the border-line of prestidigitation and have certainly been most frequently associated with the arts of the adventurer.

Now it is to this aspect of such physical phenomena that I wish to turn, and I mean to assume that every one of us is exposed to illusion in the observation of them, and unless we admit this fact we shall not be in a position to suspect the real explanation of many, if not all of them. I hold as a matter of fact that there is no field of observation in which we are so liable to illusion as in the alleged physical phenomena of Spiritualism. This is owing to the conditions under which such facts are reported. These conditions are generally such as prevent either the accurate observation of what does occur or the possible

observation of the whole of what occurs. I must emphasize this circumstance as the key to the primary difficulties in connection with the accounts of such phenomena as we are considering. Let me begin with an illustration by the materializing seance.

In the first place the materializing seance is in the dark, or in such a light as makes scientific observation impossible. In the second place, no adequate freedom of observation is permitted and opportunities are open for much that it is impossible to observe. Under such circumstances no sane scientific man can admit the "supernatural," and it matters not what may actually take place. The primary problem is not the production of certain real or alleged facts, but the production of them under circumstances which compel conviction in the skeptic. Darkness and inability for continuous and complete observation are a fatal obstacle to the admission of the "supernatural," especially when we have whole generations of fraud associated with just such conditions. This objection must be removed before any intelligent man will even listen to stories of what occurs on such occasions. The scientific man will insist that opportunities for accurate observation must be admitted or he will necessarily repudiate the alleged phenomena, and he cannot be denied his rights in this matter by any who demand his opinion of the facts. This must be an axiom in such investigations, and until the claimants of physical phenomena supply such conditions and opportunities they must expect to meet nothing but skepticism. The burden of proof lies on them.

Let me illustrate our liability to illusion from personal experiences. I went with three lady friends to a materializing seance of one of the most notorious "mediums" in this country. None of the parties with me believed in the phenomena. The experience, however, was the first for two of the ladies with me. After it was over they told me, with perfectly apparent interest, that they had seen forms in the air when the performance was not going on. They had hitherto ridiculed such things, but their personal vision of forms in the air had impressed them with possibilities which they had not previously been disposed to admit. Now although I saw nothing in the air, I did note certain interesting facts. I observed when the seance was not going on that the light was not so dim as during the performance. I saw a slide altered in the dim lantern used to produce a certain kind of luminosity in the room. I noted also, with the relaxation of the intense strain of attention, that a sort of phosphorescent light suffused itself through the room, and this condition was very favorable to the production of illusions and hallucinations on the part of the spectator, especially if anything like *muscæ volitantes* floated about in the aqueous humor of the eyes or a spectral defect existed on the retina. The modification of the muscles of accommodation in such circumstances might well prepare the sense of vision for spectral phenomena, and I so explained the visual forms reported by my friends. I had occasion some years later to confirm this conjecture. I witnessed another seance of this same "medium," and before the performance began

she made a speech in bright gaslight. Then all the lights were suddenly turned out except the dim lantern with its dim blue light radiating into the room. The effect of this on the field of vision was most interesting. For some minutes I was almost blind with the after-effects of the reaction, or what the Germans call the "Eigenlicht" of the eyes. Besides a generally diffused phosphorescent light in the room making the perception of objects impossible, I also noticed bright yellow patches of light of various shapes, most of them assuming definite form, but geometrical and not human. After some time the eyes began to become used to the conditions, and the phosphorescent light gradually disappeared and I could see the persons sitting about me clearly enough to recognize shirt-waists and form. The whole visual effect of the reaction after the sudden turning off of the lights disappeared and I finally became able to make fairly good observations of certain things from which I could easily infer fraud. But for awhile I was totally unfit to perceive anything but what retinal reaction produced. Just imagine what is likely to occur with untrained observers, as with the ladies who were present at the first of these two seances. Imagine also what is likely to occur with persons whose vision is defective under such circumstances. I have no doubt that these ladies reported facts of experience, but they were in no position to report them rightly, nor even to ascertain those concomitants which affected their interpretation of experience. To illustrate this fact further I may remark that, on this occasion, I saw a lady recognize an

uncle who had died about two weeks previously, though I could see the wig on the person appearing and personating that uncle. The skin of the wig was plainly visible on the forehead, my eyesight happening to be extraordinarily good.

Another fact of importance in such situations should be remarked. Our interpretation of such phenomena will depend as much upon our previous knowledge of the ways in which they can be simulated or produced as upon our perceptions at the time. I have already shown how our present state of consciousness affects what we see. The chapter on Illusions explained this at length. Now the ladies who accompanied me to the seance above mentioned were puzzled to account for the appearance of forms in the middle of the floor and their apparent vanishing in the same place. They seemed to recognize definite human forms that appeared and disappeared in an inexplicable manner, representing the claims of materialization and dematerialization. I saw the same forms, but knowing how they could be produced I did not recognize them to be as they were reported to me. I saw only a sheet, and did not infer, as they did, the presence of anything but an invisible manipulator. I would not describe the phenomenon as a human form. One who did not know how the effect could be produced might be pardoned for this inference, but one who knew the possibilities would not have this temptation.

Let me mention a similar instance for hearing. It is a case in which the apparent nature of the sound was determined by the observer's state of mind. A

gentleman was awakened by hearing some one groaning as if in great pain. He sprang out of bed, lit a match, and looked about the room. Finding no one, he opened the door and looked about the hall outside. The groaning ceased and the man went back to bed. In a short time he again heard the groaning and got up again to look about the room, and opening the door, repeated his search outside. But he found nothing and again retired, as the noise ceased again. He soon heard it a third time, and arose, opened the door into the hall and found no traces of any one. The groaning ceased again. He came back into the room puzzled, and while cogitating on the matter heard the sound a fourth time, and on opening the door found that the noise ceased. He waited awhile and heard it again. Opening the door it again ceased, and so he experimented until he found that it was the wind blowing through a crack in the door which had caused the noise. The interesting fact, however, is that the man now observed that *the sound was no more like that of a groaning sufferer.* As soon as he knew what it really was, or what explained it, he had no illusion as to its being a suffering person.

I myself had a similar illusion not long since. I happened to turn round on my chair to look at the time. I distinctly heard the voice of my little girl, as if she were down at the basement door. For a moment I expected to hear her come up-stairs. I turned back to go on with my work, and as she did not appear I thought to turn on my chair again, and I heard the same voice, or noise. I repeated the experiment and found that it was the squeaking of

my chair. Now that I knew what it was the illusion was not distinct. I could with difficulty detect the resemblance between it and my child's voice. But in my occupied mental state this apparent resemblance magnified itself and I required only to escape the abstraction of my employment in order to discover the real nature of the sound.

In the instance of the apparent groaning the man had been awakened from sleep by the sound, and we know how distorted the impressions of sleep life are. Any stimulus will give rise to almost any experience, and it may not be in the sense which is actually stimulated at the time. The preconception caused by the sleep condition is hard to break down, and hence this supplied the point of view from which the ordinary stimulus is interpreted. It will be so with our visual experiences. Unless we are familiar with the process by which all sorts of pseudo-effects can be produced, we are sure to misrepresent what actually occurs on any occasion, and especially under conditions where visual perception is not clear. We are so familiar with this in normal situations that we wonder that the most ordinary person does not reckon with it in such circumstances as accompany materializing seances.

But the whole secret of the apparent miracle is often in incidents which we do not see and cannot see. For instance, we may examine the cabinets in such performances and pronounce them proof against escape by the person supposedly locked in them. But unless we are familiar with the method by which they are made and by which secret locks are con-

cealed in them, we are not secure against an illusion which is perhaps more frequent than any other, namely, the illusion of supposing a thing is protected against a phenomenon, which, in fact, is very easy and simple when the facts are fully known. Trap-doors, concealed locks, dummy apparatus, and various methods of producing illusions will escape our detection unless we are already familiar with the multiform methods of jugglers. If we would only seriouly observe such performances as those of Hermann and Keller, we should have some conception of the illusions to which we are all exposed when we are not able to observe all that is done. Often, perhaps most frequently, the seances of "mediums" are much poorer exhibitions than those of the most ordinary prestidigitator, and yet men will solemnly tell us of "supernatural" appearances and events as occurring in them. A little more complete observation and an opportunity to see that part of the performance which is carefully concealed would convert the affair into the simplest of tricks.

Let me give some examples of my personal experiences with slate-writers. In narrating these I shall first tell my story as it is usually told by inexperienced observers, and then afterwards tell the real facts as closer observation reveals them or as the juggler himself explained them.

A gentleman who was himself an expert in the production of pseudo-spiritistic phenomena and who was a stranger to me advertised an exposure of the tricks by which people are so generally deceived. I wished to see the tricks performed, but I did not

wish to see the exposure and explanation of them. So I went to him before the performance and explained to him my desire. The result was an appointment to meet him in his home, where he would perform his tricks and leave me to find out what I could and to be fooled if I did not find them out and wished to believe they were anything but tricks. My object was to test my own powers of observation in such circumstances and to see how much I could carry away from the performance for narration. I made the agreement that he was not to explain anything until after the performance was over. I went prepared to take notes, which I did. But I came to the conclusion that I could take but a very small part of the notes necessary to give a clear and full account of such performances. I moreover concluded also that five minutes after the performance of any trick my memory was not good enough to recall important facts which would be necessary to tell the story rightly and fully to one who had not observed it. But the most important conclusion was that many things took place which I could not observe at all, as the sequel showed to be true.

Let me describe the first experiment as the ordinary observer usually describes such performances. I was given two folding and hinged slates to clean, which I did with a dry rag to prevent such a thing as the development of previously written messages by moisture. As soon as this was done, having taken care to see that no writing was on the slates, I placed them on the table in full sight. We did not touch the slates while the writing was being done. They

remained on the table a few minutes, perhaps two or three. When the slates were opened there was writing on one side of one of them covering the most of the slate.

As this stands I doubt if any one could explain the phenomena. The conjurer might notice that I had not told all the story, but the ordinary person would suppose from my statement that the fact that neither of us touched the slates while the writing was going on eliminated the performance of the writing by the gentleman with whom I was experimenting. But the fact is that I have omitted two things in the account and assumed another which begs the question. I speak of the writing going on as if this were a fact. But in reality I had no evidence that the writing was done while the slates were on the table. I might naturally infer from my assumption that I had cleaned the slates, that the writing came on it afterward. But I omitted to say that I had not in any way examined the slates and that I had not brought them with me. Secondly, I did not say who opened the slates. This last incident is most important. It was the conjurer who opened the slates, and in doing so he let a flap fall into his lap. I could not see this act, as he opened them so that, to see it, I should have to see through the slates. Hence in "cleaning the slate" I had *not* cleaned them at all. I cleaned two sides of one slate and one side of the other, and the flap on the remaining side of this slate. The flap could not be distinguished in color and appearance from the slate. Under it was the writing prepared beforehand.

Again I cleaned seven slates and threw them on the floor. When I picked them up, which was almost immediately after cleaning the last one, I found the side of one slate full of writing. The slates were cleaned with a dry cloth.

I noticed at the time that the conjurer moved the slates about over the floor, but I did not see how this affected the performance. I was told, however, that a prepared slate had been concealed under the carpet and removed while moving the other slates about and substituting one of the slates that I had cleaned. I did not see this, as I was occupied with my work of cleaning the slates.

Another instance was the following. An electrical apparatus for telegraphing was made up consisting of a box and a dry cell. I prepared some pellets with questions on them and laid them on the table. The man was not allowed to see me write them. When I was ready he picked one of them up and threw it into the box, and presently the message in answer to the question was ticked out in the Morse alphabet. The same was done with the other questions.

The error of this account is in the statement that he threw the pellets into the box. He did nothing of the kind. He only appeared to do this. He held the lid of the box with the left hand and picked up the pellets with the right and made the motions of throwing them into the box, but took them below the edge of the table, where he opened them and read them, and with the left hand, after closing the lid of the box, he pressed slightly on the lid and ticked the messages out himself. The important point in

my observation is that it was my inference, not my perception, that led to the statement that the pellets were thrown into the box. I could not actually see the act done, as to do so I should have to have been able to see through the lid of the box. But it would have been a natural inference from the man's movements to infer the act. No other impression would be apparent to the unwary, and at this point the description of such phenomena is sure to err. Any suspicion of the performance would be suggested by the general knowledge of fraud in such things and by special acquaintance with the method by which the trick could be done.

These are very simple instances of jugglers' tricks, and are much less mysterious or complicated than many of them. I have quoted them because they represent personal experiences which I had for the very purpose of examining my own liability to illusion and the extent of my capacities for observation. The most important result in them was the limited opportunities which I had for seeing all that occurred, and to see all that occurred was absolutely necessary for forming a rational judgment of the phenomena. It was physically impossible to see some things under the circumstances, and any one who should imagine that he had seen all that was necessary to form an intelligent judgment of the facts would be sure to make a fool of himself. It is what we do not see that often explains the trick and explains it in a very simple way. We must always be certain that we see all that occurs, or all that it is possible for any one to see, and to secure this

result it is necessary for the observer to determine the conditions under which the experiments are performed. This is never the case in professional performances.

I give one more personal experience of some interest, and again I shall describe it as such things are usually described, showing afterward just what actually took place. I was asked to have an experiment with a man who claimed to be clairvoyant. When I arrived I was asked to write the maiden name of my mother on one slip of paper and three questions on other slips. The man left the room, and I had a friend with me to occupy his attention in the other room. It was in the man's hotel and the door was shut after him. He could not see where I was if the door had been open. I prepared my slips alone and put them in my vest-pocket. When the man came in he asked me to put each pellet against his head and then put it in my vest-pocket again. I did so. I then held one in my fingers and he lit it with a match and burned it up on an ink-well, and in their order he announced the contents of the pellets and answered the questions.

This account, however, is not at all accurate. I made very careful observations at the time and wrote out a full account of the experiment immediately on my return home. Let me note the following most important facts which enabled me to discover the trick after I got home. *I did not see through the trick at the time.* But I did things and remembered them which enabled me to ascertain what the trick was afterward.

The man himself made the slips of paper on which I wrote the name and questions. He took one slip with him. I noticed this fact distinctly. On his return from the room, noticing that I had not folded mine enough, he asked me to fold them still more. I had not folded mine as he had his, and as I always obey orders in such emergencies, so as not to show my skepticism, I folded mine as directed. He then asked me to place each pellet in order against his forehead for a moment and put it in my other vest-pocket. I did so and held the last one in my fingers after touching his forehead with it. He then appeared to light it with a match and burn it up as described. I then took another pellet out of my pocket and held it in front of me near the man. I was then asked to hold my left hand against the man's forehead so that he could read the contents clairvoyantly. This was to serve as a help in the reading. But it gave the man an excuse for pushing his head against my hand in a way to stoop over and read the contents of the pellet which he was supposed to have burned, and when this was done he took the second pellet from my fingers and I replaced it by the third. In the same way he went through all the pellets.

Now what the man had done was to exchange his pellet for my first one and burn up his own instead of mine. This enabled him to have one pellet ahead of mine all the while and to unfold it below the edge of the table which was between us. Now the important point to remark is the fact that *I neither saw nor felt him exchange the pellets*, and yet I

was watching him with all the care I knew how to exercise, though I did not know previously what the trick was or could be. You may ask then how I know that he exchanged the pellets. Well, the answer is simple. *I brought all four of my pellets home with me. I went to the fellow's waste-basket and found the fourth torn in three pieces and with my question on it.* Hence it was that only when I came to write out my report was I able to discover the proof of what took place. I was too busily employed by distractions of attention which the fellow instituted to make more than a partial set of observations, but these were sufficient when away, and putting two and two together, to discover the *modus operandi* of the trick. Of course I was already familiar in general with the pellet trick, but had not seen this particular form of it before. One must, however, simply set it down as an axiom that pellets simply condemn a pretension the moment that they are proposed, no matter what we think about the appearance of the performance.

I shall refer next to a celebrated case which Spiritualists always quote in proof of their contention. It is that of Professor Zöllner and the tying of four knots in an endless cord, a cord tied at the ends and sealed with wax seals. Zöllner and Hare are constantly quoted because they were men of some reputation in their respective universities, Zöllner of Leipsic and Hare of Pennsylvania. For this reason it will be well to examine Zöllner's experiment and statements to see if they are as conclusive as they appear. He gives his account of the ex-

periment in his work on *Transcendental Physics*, in which he tries to explain the physical phenomena by means of his pet theory of the fourth dimension of space. Zöllner deseribes his experiment as follows:

"The hempen cord had a thiekness of about a millimetre; it was strong and new, having been bought by myself. Its single length, before the tying of the knots, was about 149 centimetres; the length, therefore, of the double string, the ends having been joined, about seventy-four centims. The ends were tied together in an ordinary knot, and then — protruding from the knot by about 1.5 centims. — were laid on a piece of paper and sealed to the same with ordinary sealing-wax, so that the knot just remained visible at the border of the seal. The paper around the seal was then cut off, as shown in the illustration.

"The above deseribed sealing of the two strings, with *my own* seal, was effeeted *by myself* in my apartments, on the evening of December 16th, 1877, at nine o'eloek, under the eyes of several of my friends and eolleagues, and *not* in the presence of Mr. Slade. Two other strings of the same quality and dimensions were sealed by Wilhelm Weber with *his* seal, and in his own rooms, on the morning of the 17th of Deeember, at 10.30 A. M. With these four eords I went to the neighboring dwelling of one of my friends, who had offered to Mr. Henry Slade the hospitalities of his house, so as to place him exclusively at my own and my friend's disposition, and for the time withdrawing him from the public. The

seance in question took place in my friend's sitting-room immediately after my arrival. I myself selected one of the four sealed cords, and, in order never to lose sight of it before we sat down at the table, I hung it around my neck, — the seal in front always within my sight. During the *seance*, as previously stated, I constantly kept the seal — remaining unaltered — before me on the table. Mr. Slade's hands remained *all the time* in sight; with the left he often touched his forehead, complaining of painful sensations. The portion of the string hanging rested on my lap, — out of my sight, it is true, — but Mr. Slade's hands *always* remained visible to me. I particularly noticed that Mr. Slade's hands were not withdrawn or changed in position. He himself appeared to be perfectly passive, so that we cannot advance the assertion of his having tied the knots by his *conscious* will, but only that they, under these detailed circumstances, were formed in his *presence* without *visible* contact, and in a room illuminated by bright daylight."

The first thing to be remarked about Zöllner's experiment thus described is the fact that he does not show the slightest consciousness of the psychological elements entering into his experiment. We may digress at this point enough to remark also that, in this period, the primary interest in Spiritualism was in its physical claims, a most significant fact when viewed from the standpoint of traditional conceptions of miracles and from that of the physical sciences which had usurped the right to explain all the phenomena of human experience. Hence Zöllner

approaches the problem with the assumption that psychology has nothing to do with it and that he has not to question the completeness and assurance of his observation. He has appeared entirely ignorant of the maxim which requires more continuous observation when dealing with conscious beings than when dealing with inanimate bodies or forces. Hence the following considerations affecting the integrity of his account of the phenomena.

There are a number of facts to be noted in reference to the defective nature of the evidence here adduced in support of anything extraordinary and against a very simple trick. (1) We should mark the disproportionate amount of detail in the description of the preparations for the experiment and in the description of the experiment itself. This is the natural habit of the physicist, who either imagines that the preparation is the main thing or leaves to others the verification of his work. But the point where he should have shown the most care and the most minute description was during the performance. (2) He does not say anything whatever about the history of the other three cords which he took with him. We should know where they were put during the performance and what became of them. (3) We are not told anything to show that he had compared the cord with the knots in it after the seance with the cord as taken to Slade. It ought to have been accurately measured after the performance to see if any difference between it then and before could be detected. In other words, Zöllner should have assumed the possibility of substituting one cord for another, which he

thought he had excluded. (4) He does not tell us whether he examined the paper afterward on which the wax seals were pasted. Whether a substitute cord was possible or not, this examination should have been made as an evidential precaution. (5) He says nothing about any careful examination of the seals to show that they were identical with those he had put on the knotted end of the cord. (6) He does not say a word about the amount of time employed in the experiment or the tying of the "fourth dimension knots." (7) Most important of all the omissions is one which was observed by Mrs. Sidgwick in the study of the case. Zöllner does not tell us that the experiment was made several times before it succeeded. This was stated in another work by the author. The failure gave Slade an opportunity to prepare duplicate cords, after observing the one or ones Zöllner had with him, and to substitute his own cord for that of Zöllner. (8) He does not give any details of what went on between the time of sitting down at the table and the final tying of the knots. Here was a crucial moment when the most minute account of the experiment should have been made. (9) He does not say when the account of the experiment was written. To give it value it should have been from notes made on the occasion and written out immediately afterward. (10) Though very careful to give the dates on which the cords were prepared, no care is taken to tell us when or on what dates the experiment was performed. (11) We are not told whether Slade touched or examined the cord in his own hands or not. (12) No indication is given regarding the

chances that Slade may have had to examine the friend's cord and to be prepared for a reproduction of Zöllner's.

Any one of the last eleven defects in the account of this experiment is sufficient to nullify its scientific character, and much the same verdict can be given against Hare's experiments, which, in fact, were not so good as Zöllner's. If these students of the problem had been acquainted with psychology and the many pitfalls in such phenomena, they would have been careful to provide against their fall. But nothing save an unwarranted confidence in the experiments of physicists in a field for which they are not equipped at all will explain the influence of their accounts, and we have to educate the public still in the fundamental weaknesses of such instances. They are summarized in malobservation and defective memory, with consequent failures in detailed accounts of the facts. The malobservation is provable in this case, though defective memory is not, but we are bound to suspect it under the circumstances because of the lack of data to exclude it. At least it is so possible that we must demand security against the suspicion of it in order to respect the account more than we do.

But the defender of Zöllner will say that, whatever the objections to the cord experiment, we cannot explain that of putting wooden rings on the foot of a table standing some distance off and with another table between it and the man holding the cord on which the rings are fastened. But if the reader will look up the account he will find it far more defective

in details than that of the knot-tying. Zöllner gives no adequate aecount of it whatever. We do not know how it began, what the history of the table was, what Slade did while the experiment was going on, how and when the rings were prepared, what opportunities Slade had or did not have to have similar ones prepared and previously placed on the ehair-leg, etc. There is in faet practically nothing but the result to convinee the reader of the story, and this assumes confidence in Zöllner's judgment and abilities to proteet himself against fraud. There is no evidence whatever in his aecount that he did so proteet himself.

What readers of such narratives eonstantly forget is the simple fact that their reading depends on forming a definite conception of events as they are deseribed, and we forget that incompleteness of the account prevents us from forming a true conception of the facts. In other words, the psychological continua may not correspond to the physical continua in the events, and yet we are foreed from the very narrative to assume them to be the same. Our psychological eontinua eonsist of the eonceptions which the narrative earries: the physieal continua eonsist of events whieh may either not be seen by the observer at all or may not be deseribed when they are seen. Hence we have to be careful about aeceptıng any story, especially stories about unusual events, as accurately representative of the facts. Careful study of details for omissions or for time and intellectual chasms should always be made, and it will often reveal imperfections that throw sus-

picion on reports or make them incompletely evidential of the claims set up for them. This is perfectly clear in the account of Zöllner as quoted, and it either vitiates his other incidents, which I have no space to examine, or it suggests skeptical caution in accepting them.

One of the best papers on the problem psychologically of these physical phenomena is one by Dr. Richard Hodgson in the *Proceedings* of the Society for Psychical Research (Vol. IV). It concerns "Malobservation and Lapse of Memory," and followed an able article by Mrs. Sidgwick on the physical phenomena of Spiritualism. It was found that most people had such confidence in their powers of observation and memory that it was necessary to perform some experiments showing that this confidence might be mistaken. The consequence was an extensive system of such experiments consisting of slate-writing performances on which various people were to report without being told the object of them. The result vindicated the judgment of Dr. Hodgson and his coadjutors in the work and proved that only expert observers can be trusted to give an adequate account of what occurs on such occasions. One incident which Dr. Hodgson tells and which was an experience that induced him to institute the experiments was the following. He describes what he witnessed in India in connection with a Hindu juggler and an English officer.

"The juggler was sitting upon the ground immediately in front of the hotel, with his feet crossed. Two small carved wooden figures were resting on the

ground, about two feet distant from the juggler. Some coins were also lying on the ground near the figures. The juggler began talking to the figures, which moved at intervals, bowing, 'kissing,' and bumping against each other. The coins also began to move, and one of them apparently sprang from the ground and struck one of the figures. An officer and his wife, who had but recently arrived at the hotel, were spectators with myself, and we stood probably within two yards' distance of the juggler. I knew how the trick was performed; they did not know. The officer drew a coin from his pocket, and asked the juggler if this coin would also jump. The juggler replied in the affirmative, and the coin was then placed near the others on the ground, after which it betrayed the same propensity to gymnastic feats as the juggler's own coins. Two or three other travellers were present at the dinner in the evening of the same day, and in the course of the conversation the officer described the marvellous trick which he had witnessed in the afternoon. Referring to the movements of the coin, he said that he had taken a coin from his own pocket and placed it on the ground himself, yet that this coin had indulged in the same freaks as the other coins. His wife ventured to suggest that the juggler had taken the coin and placed it on the ground, but the officer was emphatic in repeating his statement, and appealed to me for confirmation. He was, however, mistaken. I had watched the transaction with special curiosity, as I knew what was necessary for the performance of the trick. The officer had apparently intended to place the coin upon the ground

himself, but as he was doing so, the juggler leant slightly forward, dexterously, and in a most unobtrusive manner, received the coin from the fingers of the officer as the latter was stooping down, and laid it close to the others. If the juggler had not thus taken the coin, but had allowed the officer himself to place it on the ground, the trick, as actually performed, would have been frustrated."

In more or less extenuation of the officer's liability to malobservation and lapse of memory, Dr. Hodgson goes on to say regarding the incident what it is important always to remember.

"Now I think it highly improbable that the movement of the juggler entirely escaped the perception of the officer — highly improbable, that is to say, that the officer was absolutely unaware of the juggler's action at the moment of its happening; but I suppose that, although an impression was made upon his consciousness, it was so slight as to be speedily effaced by the officer's *imagination* of himself as stooping and placing the coin upon the ground. The officer, I may say, had obtained no insight into the *modus operandi* of the trick, and his fundamental misrepresentation of the only patent occurrence that might have given him the clue to its performance debarred him completely from afterward, in reflection, arriving at any explanation. Just similarly, many an honest witness may have described himself as having placed one slate upon another at a sitting with a 'medium,' whereas it was the medium who did so, and who possibly effected at the same time one or two other operations altogether unnoticed by the witness."

I cannot quote from the reports of people who witnessed the slate-writing of Mr. Davey, as they are too elaborate and detailed to do so. But if readers of this brief account will go to the volume mentioned they will find overwhelming evidence that lay reports not involving previous knowledge of the trick cannot be used for proof of the " supernatural " or supernormal, but at most only as reason for careful investigation. There is no use to indulge in pride about the matter. This will only help to keep us in illusion on such things. The sooner we all admit that there is much that we are not able to detect or observe, the better are we protected against illusion. This ought to be apparent to any one who has witnessed the performances of Hermann and Keller. We never suppose for an instant in such cases that we are witnessing miracles. We know that they are tricks, and we are generally quite content to admit our inability to see through them. Why should we not admit the same frailties in performances which profess to be ordinarily inexplicable? Why should we pride ourselves in our powers when the performance claims to be " supernatural," and have no such pride when it is a juggler's trick? We cannot expect, without previous training and experience, to have any more knowledge of the one than the other, and if we would only admit this frankly we might be willing to rely upon the judgment of experts in the investigation of such things. We should be less frequently fooled if we did this than when we try the investigation for ourselves. In some instances, as I have already intimated, it is impossible for any

one to observe the crucial facts upon which an explanation rests, as the performer conceals them from us. No skill at observation will serve in such circumstances. The observer needs previous knowledge of the phenomena to enable him to observe when he cannot observe the facts.

I shall not assume an attitude of contempt or ridicule against reports of physical phenomena nor against the reality of them. I shall not deny the *possibility* of extraordinary physical phenomena. For all that I know there may be such, but I have not had any personal experiences of such, and am not entitled to endorse them until I do. All such phenomena that I have witnessed have either been explicable by trickery or were proved to be such by actual observations. One celebrated slate-writer, often quoted to me, was the subject of two experiments with me, and in the very first experiment I discovered him writing on a slate below the edge of the table, and in other instances he exchanged slates so dexterously that, but for my trained habits of observation, I should not have seen the incidents that made skepticism imperative, and that proved the natural explanation of the facts.

But in spite of my experience I shall not take an attitude of denial in such things. I shall admit that it is only a matter of adequate evidence to prove the claims of physical phenomena, and so I shift upon the narrator the burden of proof that they occur. I have, too, some sense of humor about this situation. I have myself asked the scientific world to listen to certain extraordinary phenomena in psychology, and

I am not going to belie the principles involved in this demand and show a dogmatic denial of physical phenomena. I shall listen as patiently to accounts of them as I ask scientists to listen to the psychological phenomena that demand explanation. I shall not repeat their folly and neglect. But this attitude does not absolve me from the duty to make the credentials of my belief as severe as the nature of the phenomena requires, and no one should expect or demand of me anything but the most careful and cautious limitations under which conviction is to be established.

But, whatever the attitude which I shall take regarding physical phenomena, I must insist that they have certain most important defects on any theory of their character that relegates them to a secondary place in the investigation of the claims of Spiritualism. The first of these defects is that they are much the most difficult of the phenomena to validate. The second is that they are much less frequent than the psychological phenomena having a scientific interest. The third is that they occur under circumstances in most instances that associate them with the ordinary tricks of jugglers. These three considerations are matters of great weight in any attempt to study such phenomena. I may add also what I have already indicated, namely, that they are quite irrelevant of themselves to prove the claims of the spiritualist even on the supposition that they are genuine. There must be the accompaniment of phenomena illustrating the personal identity of deceased persons to effect this result, and if these phenomena can be obtained without a resort to methods associated with prestidigita-

tion, and under conditions adequate to the proof of genuineness, we should most naturally depend upon the simpler process. Hence, while the physical phenomena require investigation, and should be examined with an open mind, we should neglect the really crucial facts if we risked our case upon any such credentials, and while I shall listen with patience and unbiassed mind to any accounts of such phenomena, I must be indulged a continued skepticism regarding them, until they have accumulated in such abundance as to accord with the quantitative standards of scientific method. Hitherto, the very best records of such real or alleged facts have been so defective, and human testimony so unreliable that suspense of judgment is still an imperative duty. The actual outcome of many experiments by qualified observers has been such that strong contempt for claims regarding physical phenomena may be indulged with some excuse, especially by those who are familiar with scientific knowledge. But I shall not indulge that temper of mind. I have heard narratives which, though I remain uncertain as to the explanation, I am certain that further investigation is necessary for any conclusion, even for that of trickery, and as the phenomena are perennial, and in this age of expectation so liable to produce illusion if they are not general, I think there is the same reason for patient examination of them without regard to expected or unexpected conclusions.

CHAPTER IX

SUBCONSCIOUS ACTION AND SECONDARY PERSONALITY

There is another type of phenomena, and this time they are psychological in their character, that often claim to be spiritistic in their origin. They were little known until the last quarter of a century. Hints of their nature were noted before this date, but little systematic knowledge of them was accepted until comparatively recent times. In their more highly organized form they have been denominated "secondary personality." But as this more highly developed form of the phenomena is preceded by various unconscious or subconscious mental phenomena, it will be necessary to approach the discussion of secondary personality through these. It will be best, however, to clearly define what we mean by secondary personality, and to do this it will be necessary to define and explain what we mean by *personality* in general and psychological usage.

Many people confuse the meanings of the terms "person" and "personality," assuming that they mean substantially the same thing. This is in fact not the case. They originally had the same etymological import, but the exigencies of intellectual and philosophical development gave them a somewhat

different meaning. It is lack of familiarity with this development that leads to the confusion of these terms. I shall briefly state the history of the terms, and then define their import for present thought.

"Person" is from the Latin "*persona*," a mask used in the theatres to represent an impersonation. Then it came to denote the character so represented, and finally to denote a human being, which is its meaning to-day. The Greek "Prosopon" (Πρόσωπον) at first denoted the face or visage, and later became the term for mask, as "*persona*" in Latin. When the term came to denote a human being it did so according to the intellectual interests served by it. In social and political matters it denoted the whole living being, physical and mental, and in law it so applies still. In theology and philosophy it often meant the subject of consciousness and abstracted from the body. But the term as denoting this subject was adjustable to any philosophy, and so with the materialist would mean the physical organism associated with its functions. With the opposite school it would be more or less identical with the soul, though not setting aside its common application to the organism as well. But in all philosophic schools "person" rather implied some sort of unity or singleness of the thing which manifested functions. This unity or singleness may be nothing more than space-wholeness, or apparent oneness of the subject, though analysis might show it composed of elements. But physically it was one thing, and philosophically and theologically it came to denote a simple subject, though there were differences of opinion about even

this. Through all phases of belief, however, *oneness*, in so far as space-occupation was concerned, was the implication of the term.

The term " personality " is what we call an abstract term. It is derived from the idea of a quality describing a person, and so denotes what characterizes a person. In philosophy this characteristic was consciousness, or the stream of consciousness which was supposed to attest the need of a soul to explain it. But in the course of its development it assumed three rather distinct meanings, though they are closely related to each other. (1) It was often used as synonymous with " person." (2) It is often used to denote the group of mental states which constitute our normal mental activity, and which indicate that we are " persons " rather than machines. (3) It often denotes those peculiar characteristics by which we distinguish one " person " from another. The true meaning which it has for psychology is the *second*, at least when dealing with the problem affecting this chapter.

The confusion of most people about the term comes from its application in " secondary personality," which seems to them to imply a second *person* in connection with the same physical organism, and hence they actually often suppose that the psychologist means to recognize the presence of another and independent " person " in connection with certain phenomena, and then wonder why we do not call it spirit! The fact is that the psychologist uses the term to eliminate the supposition of an independent " person " in connection with the assumed phenomena.

The distinction between " primary " and " secondary personality " was adopted to distinguish between certain normal mental activities and certain abnormal activities which simulated the presence and influence of another " person " than the one properly associated with a given organism. With the confusion between " person " and " personality " it was natural to suppose that " secondary personality " implied another " person," and as this was not physical the meaning was not clear. But this can be explained, and the illusion about it easily removed.

Without regard to the distinction between " primary " and " secondary," *personality* in psychology denotes a stream of consciousness kept continuous, or in some way associated as a whole in its units, by memory. We know it as our normal consciousness and its associated states constituting a stream, so to speak. Memory is the fact which holds these states together and enables us to think of ourselves as one subject or being. " Personality " is thus a group of mental states or experiences which constitute a unity of some kind and is what we imply by a " person," psychologically speaking. But certain facts have been observed in mental experience which seem to show the existence of activities that are not known or remembered by this normal consciousness, and when this independent group of mental states assumes the semblance of another " person," we call it " secondary personality," to denote both that it belongs to the same " person " or organism as the normal or primary consciousness and that it simulates the reality of an independent " person." But it is only a sepa-

rate group of mental states not connected by memory with the primary personality, though it may show a memory of its own. The important point in the definition of it, however, is its relation to the same subject or organism as the primary personality, and its apparent independence. It may exhibit many or all the traits of another "person" or human being than the one exhibited by the primary personality, and yet be a functional activity of this same subject or "person." In this way the term denotes a class of phenomena which exclude the spiritistic interpretation instead of implying it.

As the primary personality is what we recognize as the normal consciousness, we have to regard the secondary personality as unconscious. The mental activity in secondary personality may be essentially like that of the primary personality, and may even be called a consciousness, but owing to the fact that it has no necessary memory connection with the primary personality or consciousness, it must be regarded, relatively at least, as unconscious. This way of viewing it, however, tends to produce confusion in our conception of it. To say that it is essentially like the primary consciousness, and yet to refuse it the name of consciousness, is to make it appear that it should be given the name of another consciousness, and this is often done in the term "subliminal consciousness," thus distinguishing the primary as the supraliminal consciousness. This is all very well when we are using the term "consciousness" merely as an abstract term for mental activity in general, but in so using it we do not identify it with the ordi-

nary conception of the term, which involves normal memory of experience. But whether we shall use the term in its narrower or wider import will not affect the actual distinction between primary and secondary personality as determined by the absence of the primary memory of the secondary states, and sometimes or always *vice versa*. The main point is not what we shall call it, but how we shall conceive its relation to the primary personality, and that is, one in which we are not normally conscious of the events occurring in subliminal states. This fact enables us to approach the functional activities of secondary personality through our ordinarily unconscious action or what is sometimes called subconscious phenomena. Secondary personality is but a more highly organized system of subliminal events, while the ordinary subconscious activities are less imitative of independent personality, if they do it at all, or are in harmony with the functions of the normal consciousness, while secondary personality is dissociated from it, and so exhibits the systematic action of dissociation where the normally subconscious functions are associated with the primary personality. They afford, however, the proper means of approach to the dissociated phenomena of secondary personality.

There is a whole group of unconscious functions which we treat as physiological and not mental. They are such as digestion, circulation, secretion, and the reflexes. With these we have nothing to do in illustrating what we mean by unconscious mental actions terminating in the organization of secondary personality. In approaching these secondary phenom-

ena we must begin with those functions which began in acts of normal consciousness and finally developed into unconscious or involuntary actions.

The first simple illustration of such actions is that of walking or using the limbs, with the development of which we are all familiar. In infancy, for instance, we have to learn to walk by hard work. The first efforts in this direction require the most careful attention and deliberate volitions. The irregular motor action of the child has to be overcome by the slow and hardly won control of the muscles in a desired direction. Gradually the child learns to do this more easily, and finally the act becomes apparently involuntary, until we can control our walking without thinking about it. It is the same with the hands or other muscular activities. All of them are gradually learned and become unconscious, although they are capable of being initiated or interrupted at will at any time in our normal condition, showing that the relation of consciousness to them is not wholly lost in these circumstances. But they may be carried on by subliminal activities after the voluntary and deliberate influence of consciousness has been withdrawn. If the influence of normal consciousness were at any time dissociated from these automatic results of habit, we should discover a discoördinated set of actions which would be referred to subliminal action entirely, and so be regarded as abnormal. We refer these normally unconscious acts to habit, and this can mean only that the system acquires automatic tendencies to act along the lines of frequent voluntary action, and in proportion as the actions become

unconscious they represent agencies bordering on what we call secondary personality; and if they become, as they perhaps do at times, dissociated from the functions of the normal consciousness, they take on the systematic character of secondary personality.

The acts of reading, writing, and playing music are the same as walking, and become automatic with experience. They are, of course, not purely automatic in the sense of being wholly unrelated to normal consciousness, but are not directed deliberately by the will. They are all associated with the normal or primary personality, though not directly and wholly controlled by it. If they became dissociated from this they would assume the character of another personality.

In the mental life, as distinct from its expression in muscular actions, the best illustration of subconscious activity is in Reproduction or Association. Reproduction we found in an earlier chapter to be the recalling of past events to consciousness. This act is always more or less subconscious, and is perhaps never a directly conscious act, though deliberate effort on the part of the conscious mind may have an influence upon the result. But the act of associative recall is subliminal, because it has first to do its work before the mind becomes conscious exactly of what it recalls. We may have a part of the past experience recalled, and then endeavor to recall more of it, aware that we have not reproduced the whole of it. But still we have to rely upon subconscious action to effect the specific recall. The fact, however, that it is subliminal is evident from two types of

experience. The first is in the sudden recall of past events after having failed to voluntarily recall them, and the second is the sporadic and unconscious recall of the past while thinking about things wholly unconnected with the present state of consciousness. The two phenomena represent the same law of action, though one of them does not involve any relation to a previous intention. We are all familiar with the phenomenon of trying to recall some name or event and finding ourselves unable to do it. After various trials we give it up, and then the name or event will suddenly appear in consciousness without any warning or expectation, at a moment when we are not thinking about it. The mind has subconsciously been in pursuit of the desired incident, and finally succeeds in eliciting it. The second class to which I referred represents recall due to some associated state of the mind or body not noticed at the time. This is a very frequent phenomenon. For instance, we may be occupied with some work and a noise may occur and some memory will be evoked that is wholly unrelated to the thing we are thinking about. I remember once that a fine spring zephyr recalled a scene that I had witnessed a year before, though at the time of the recall I was occupied in reading a novel wholly unrelated to what I recalled. Any accidental emotion or sensation may divert the mind for a moment from the present state and reproduce past events to interrupt the main thread of consciousness. All this is subliminal and does not involve the voluntary effort of the subject.

Another illustration is a little different. In walk-

ing we are as much guided by what we do not specifically notice as we are by the objects that we consciously observe. In fact, we may be so occupied with our thoughts that we do not consciously notice objects at all. That is, we may not *apperceive* them or directly think about them. Yet we may sufficiently regard them to avoid them. To do this we must have our life adjusted to many things which we do not directly will or observe. They produce their effect on the mind, but that effect is not a conscious one. That they have an influence is apparent if we close our eyes at any time that we are reflecting and walking about. The ordinary reflexes by which our movements are guided are thus cut off.

All these instances are such as are articulated with the normal acts of the mind, and reflect a definite adjustment of the various functions of the mind and body to each other. In them facts and experience seem properly associated. But I come next to a type of actions which represent the rise of dissociated functions. I have shown in an earlier chapter that the phenomena of dissociation are as frequent as those of association, and in their proper relations are just as necessary as the latter. We forget many things because they have no direct importance for the main object of our thoughts and plans. Things that we do not directly notice and hold in attention are easily forgotten. The regulation of our movements is handed over to functions that tend to lose their conscious connection with our present thoughts and interests. But in the normal state the connection is easily established again. When the abnormal

arises the functions may act separately and with apparent reference to different ends. Thus in absent-mindedness we will do things which we had no previous intention of doing, and they are done under some sort of suggestion. A thought may occur to us, recalled unconsciously, and being in a more or less automatic condition, we at once perform the act involved, and either know nothing about it or do not observe it until it has been done. The best illustration, however, is found in such movements as are instigated by sensory impressions which we do not notice at the time but which come to consciousness the moment the acts take place. Thus I often resolve to do a certain thing, and then it occurs that I must first do something else. I start to do this second thing and suddenly find myself doing the first. This is a very frequent occurrence. The effect of the previous thought is not nullified by the second one, and it lingers in the subliminal state to emerge in an automatic action.

The dissociation becomes more complete in abnormal phenomena. One of the best illustrations of it is found in hysteria and other neuræsthenic difficulties. It is connected with the limitation of the field of vision. In patients of the type indicated the field of vision often becomes so limited that objects which would ordinarily be seen in the indirect field are not seen at all. Thus a pencil off at one side will not be seen when normally it would be clearly visible. The extent of this limitation varies much. In some only a small portion of the retina is sensitive to visible stimuli. But the interesting fact to be noted is that,

if the person be asked in hypnosis to tell what he saw in this indirect field, he may be able to give as full an account of it as if he had seen it normally. He would say normally that he did not see the pencil or other object, but in hypnosis would tell that he had seen it, and he would tell this without suggestion, merely in response to the request to say what he saw. A similar phenomenon occurs in connection with hypnosis. We may produce anæsthesia by suggestion, and then institute a series of sensory impressions upon the sensorium and the subject will know nothing about it, but if told that he will tell all about it after awakening he will give a full account of it, showing that the mind has taken notice of the facts unconsciously. Let me give some illustrations of this from experiment.

Dr. Boris Sidis reports a case in which a hypnotic patient was told a number of things under hypnosis, such as that she would not see him when her eyes were opened; that she is a child of two years of age, etc. A hat is placed on his head and she sees this hanging in the air. She is told that she cannot see his spectacles, but when they are moved she answers that she does not see them, though she moves her eyes as the spectacles move. Doctor Sidis holds a newspaper before her and she cannot see it or his hand, but when his finger points to a word she can pronounce it. This she does, but immediately afterward she cannot recall the words. If asked to recall them and the finger points to the words, she repeats them. When the paper is removed she does not know what she has said.

Now comes the interesting feature of this case. "On awakening at the end of this long series of experiments, the patient had no recollection of what had passed. She was then asked to shut her eyes, and a pen was given her. She was told to try to recollect what occurred when asleep, but she could not remember anything. *The pen meanwhile wrote without the patient's knowledge an account of what had occurred.*"

The italics are my own. But we have here evidence that the impressions were actually recorded and were accessible to automatic writing, though the normal consciousness had no recollection of them. As the sensory impression was not apparently perceived, we naturally expect no recall of the facts, but they actually are recalled and show traces of having been subliminally observed and subliminally reproduced.

Doctor White reports a case of a person not accustomed to drinking, but who accidentally drank too much on one occasion and had amnesia, or inability to remember events, for three hours. That is, after recovery of normal conditions he could not remember what he had done during these three hours. Under hypnosis he told the whole story, and it was confirmed. Here again the sensory impressions were subliminally perceived, though the normal consciousness was not aware of them. The functions of the mind were so dissociated that while one was occupied with its object the other was not connecting its experience with the first.

Another more striking case by Doctor Sidis and

Dr. Morton Prince illustrates the phenomenon in a different form. It was a case of producing visual hallucinations by tactual stimuli. They occurred in a hysterical patient. I give their account verbatim. They were investigating anæsthesia.

"The experiments which were made to determine the nature of the anæsthesia produced interesting results. These experiments are of a well-known class which have been frequently made use of to show that anæsthesia is not a true anæsthesia, but that impressions from the anæsthetic parts which seem not to be felt are really perceived subconsciously.

"They may be made in several ways. The method we made use of consisted in producing a visual hallucination whenever the anæsthetic hand was touched. That is to say, if the anæsthesia is functional, although the subject does not consciously perceive the tactile impression, he sees the image of a number which corresponds with the number of times the hand is pricked or touched. This was found to be the result in this case. Whenever the hand was pricked a certain number of times successively, he always saw that number as an hallucination. The number was always correct, and showed that subconsciously the pricks must have been felt.

"The details of the experiment were as follows: The anæsthetic hand was placed behind a screen and the patient was told to look in a glass of water and tell what he saw there. Impressions made on the anæsthetic hand gave rise to visual hallucinations symbolically representing the sensory stimuli. Thus, for example, when his hand was touched, very lightly,

five times, he saw the figure five very vividly, and described it in detail. He saw the number written; it looked very large; and he saw it written on the back of a hand.

"The intensity of the hallucination was very well brought out when, projecting the hallucinatory hand on a screen instead of in the water, the patient outlined it with a pencil. When one of us placed his hand on the screen by the side of the hallucinatory hand and the patient was asked to tell which hand looked more real, he insisted that both hands looked equally real, except that the hallucinatory hand looked a little farther away."

The evidence of subconscious impressions is overwhelming in such instances, as they illustrate the phenomena of hallucinations which, as previously explained, are due to secondary stimuli. We might more easily dispute the real anæsthesia, if the subconscious image had been in the field of touch, but it matters not what we say or think about the tactual condition of the sensorium, the conversion of the stimulus into a visual hallucination shows subliminal processes of some kind, while the assurance of anæsthesia in touch doubly indicates this subconscious action.

Illustrations of this kind might be quoted indefinitely, but these suffice to prove the fact of subliminal mental action and to illustrate the source of secondary personality when it assumes a systematic or organized form. The instances quoted are sporadic illustrations, and do not show developed secondary personality in any form to simulate a real

person. They indicate, however, the dissociation of functions and prepare us to understand the same phenomena in a more highly developed form. I come now to instances of this systematic type of secondary personality or subliminal action where we find the simulation of other than the normal person. It is in this last class of phenomena that we find another type of pseudo-spiritistic facts. The simulation of other than the normal person, however, does not always take the form of alleged spirits, and for that reason it affords us an admirable precaution against accepting such claims when they occur. I shall gradually lead up to the alleged spiritistic type and illustrate cases which make no pretence of this.

I shall begin with the historic case of Professor Janet. It was really a case of triple personality, but this only shows that the dissociation may extend to various groups of mental states which may subliminally group themselves in different ways. Dr. Janet calls the three separate personalities by the names of Leonie, Leontine, and Leonore to represent the dissociated personalities of Madame B. Leonie is the name for Madame B. in her normal or primary state. Leontine is the name for her secondary state. Leonore is the name for the ternary state, which is deeper than the other two. I now take Janet's own account of the case, translated into English in Mr. Myers' *Human Personality*, etc.

"In these researches Mme. B. in her every-day condition is known by the name of Leonie. In the hypnotic trance she has chosen for herself the name of Leontine, which thus represents her secondary

personality. Behind these two, this triple personality is completed by a mysterious Leonore, who may for the present be taken as non-existent. A post-hypnotic suggestion was given to Leontine, that is to say, Leonie was hypnotized and straightway became Leontine, and Leontine was told by Professor Janet that after the trance was over, and Leonie had resumed her ordinary life, she, Leontine, was to take off her apron — the joint apron of Leonie and Leontine — and then to tie it on again. The trance was stopped, Leonie was awakened, and conducted Professor Janet to the door, talking with her usual respectful gravity on ordinary topics. Meantime, her hands — the joint hands of Leonie and Leontine — untied her apron, the joint apron, and took it off. Professor Janet called Leonie's attention to the loosened apron. 'Why, my apron is coming off!' Leonie exclaimed, and, with full consciousness and intention, she tied it on again. She then continued to talk, and for her — Leonie — the incident was over. The apron, she supposed, had somehow come untied, and she had retied it. This, however, was not enough for Leontine. At Leontine's prompting, the joint hands again began their work, and the apron was taken off again and again replaced, this time without Leonie's attention having been directed to the matter at all.

"Next day Professor Janet hypnotized Leonie again, and presently Leontine, as usual, assumed control of the joint personality. 'Well,' she said, 'I did what you told me yesterday! How stupid the other one looked' — Leontine always calls Leonie 'the other one' — 'while I took her apron off! Why

did you tell her that her apron was falling off? I was obliged to begin the job over again.'

"Thus far we have dealt with a secondary personality summoned into being, so to say, by our own experiments, and taking its orders entirely from us. It seems, however, that, when once set up, this new personality can occasionally assume the initiative, and can say what it wants to say without any prompting. This is curiously illustrated by what may be termed a conjoint epistle addressed to Professor Janet by Mme. B. and her secondary personality, Leontine. She had left Havre more than two months when I received from her a very curious letter. On the first page was a curious note, written in a serious and respectful style. She was unwell, she said, worse on some days than on others, and she signed her true name, Mme. B. But over the page began another letter in a quite different style, and which I may quote as a curiosity. 'My dear good sir, I must tell you that B. really, really makes me suffer very much; she cannot sleep, she spits blood, she hurts me; I am going to demolish her, she bores me, I am ill also, this is from your devoted Leontine.' When Mme. B. returned to Havre I naturally questioned her about this singular missive. She remembered the *first* letter very distinctly, but had not the slightest recollection of the *second*. I at first thought that there must have been an attack of spontaneous somnambulism between the moment when she finished the first letter and the moment when she closed the envelope. But afterwards these unconscious, spontaneous letters became common, and I was better

able to study their mode of production. I was fortunately able to watch Mme. B. on one occasion while she went through this curious performance. She was seated at a table, and held in her left hand the piece of knitting at which she had been working. Her face was calm, her eyes looked into space with a certain fixity, but she was not cataleptic, for she was humming a rustic air; her right hand wrote quickly, and, as it were, surreptitiously. I removed the paper without her noticing me, and then spoke to her; she turned around, wide awake, but surprised to see me, for in her state of distraction she had not noticed me approach. Of the letter which she was writing she knew nothing whatever.

"Leontine's independent action is not entirely confined to writing letters. She observed (apparently) that when her primary self, Leonie, discovered these letters, she (Leonie) tore them up. So Leontine hit on the plan of placing them in a photographic album into which Leonie could not look without falling into catalepsy (on account of an association of ideas with Dr. Gibert, whose portrait had been in the album). In order to accomplish an act like this Leontine has to wait for a moment when Leonie is distracted, or, as we say, absent-minded. If she can catch her in this state Leontine can direct Leonie's walks, for instance, or make her start on a railway journey without luggage, in order to get to Havre as quickly as possible.

"We now come to consider the third personality, Leonore. Although Leonie's unconscious acts are sometimes (not always) coincident with Leontine's

conscious ones, Leontine's unconscious acts are never included in Leonie's memory, any more than in Leontine's own. They belong to some other, to some profounder manifestation of personality, to which M. Janet has given the name of Leonore. And observe that just as Leontine can sometimes by her own motion and without suggestion write a letter during Leonie's waking state and give advice which Leonie might do well to follow, so also Leonore can occasionally intervene of her own motion during Leontine's dominance, and give advice which Leontine might with advantage obey.

"'The spontaneous acts of the unconscious self,' says M. Janet, here meaning by *l'inconscient* the entity to which he has given the name of Leonore, 'may also assume a very reasonable form, a form which, were it better understood, might perhaps serve to explain certain cases of insanity. Mme. B. during her somnambulism (*i. e.* Leontine) had had a sort of hysterical crisis; she was restless and noisy, and I could not calm her. Suddenly she stopped and said to me with terror, 'Oh, who is talking to me like that? It frightens me.' 'No one is talking to you.' 'Yes! there on the the left.' And she got up and tried to open a wardrobe on her left hand, to see if some one was hidden there. 'What is it that you hear?' I asked. 'I hear on the left a voice which repeats, "Enough! enough! be quiet; you are a nuisance."' Assuredly the voice which thus spoke was a reasonable one, for Leontine was insupportable; but I had suggested nothing of the kind, and had had no idea of inspiring a hallucination of

hearing. Another day Leontine was quite calm, but obstinately refused to answer a question which I asked. Again she heard with terror the same voice to her left, saying: 'Come, be sensible, you must answer.' Thus the unconscious sometimes gave her excellent advice.

"And in effect, so soon as Leonore, in her turn, was summoned into communication, she accepted the responsibility of this counsel. 'What was it that happened,' asked M. Janet, 'when Leontine was so frightened?' 'Oh, nothing; it was I who told her to keep quiet; I saw she was annoying you; I don't know why she was so frightened.'

"Just as Mme. B. was sent by passes into a state of lethargy from which she emerged as Leontine, so also Leontine in her turn was reduced by renewed passes to a state of lethargy from which she emerged no longer as Leontine, but as Leonore. This second awakening is slow and gradual, but the personality which emerges is in one most important point superior to either Leonie or Leontine. Alone among the subject's phases this phase possesses the memory of *every* phase. Leonore, like Leontine, knows the normal life of Leonie, but distinguishes herself from Leonie, in whom, it must be said, these subjacent personalities appear to take little interest. But Leonore also remembers the life of Leontine, condemns her as noisy and frivolous, and is anxious not to be confounded with either.

"Yet one further variation, and I end my brief résumé of this complex history. Leonore is liable to pass into a state which does not, indeed, interrupt

her chain of memory, but which removes her for a time from the possibility of communicating with other minds. She grows pale, she ceases to speak or hear, her eyes, though still shut, are turned heavenwards, her mouth smiles, and her face takes an expression of beatitude.

"This is plainly a state of so-called ecstasy; but it differs from the ecstasy common in hysterical attacks in one capital point. Not only is it remembered — indistinctly, perhaps — by Leonore, who describes herself as having been dazzled by a light on the left side, but also brings with it the most complex of all the chains of memory, supplementing even Leonore's recollection on certain acts which have been accomplished by Leonore herself."

The chief psychological interest in this case lies in the apparent independence of the three personalities in which different groups of mental states or memories are associated and held, in such a group, apart from other groups. The apparent communication between them, limited it is true, but yet at least through memory in one direction and by means of hallucination in the other, illustrates this apparent independence very clearly, and shows the secondary and ternary personalities highly organized and perfectly simulative of realities other than the normal or primary consciousness. In fact, it might be said that we have no positive assurance for selecting one of them rather than the other as the normal, save that what is called the primary in the case seems that condition best adjusted to the normal environment. This criterion is sufficient, and it re-

veals subliminal states as distinct from the supraliminal as any objective person can show, except perhaps in the fact that there is a mnemonic connection in one direction at least, which indicates an identity of subject for all the personalities, if our ordinary standard of such things is to be accepted.

Some will notice a semblance to spiritistic phenomena, or at least they will allege this semblance, and in the past many have explained all such instances as cases of "possession," sometimes as demoniac possession. But the connection between the personalities, though not a conscious one and only by means of memory, as well as common language and style, indubitably show that any theory of supernormal phenomena in them must be cast out of court. The superficial resemblance is there, but the real similarity is not. There is only a perplexity for that older psychology which limited the capacities of mental action to the normal consciousness and referred everything else either to cerebral functions or to spirits. The assurance of subliminal actions, however, has eliminated an appeal to the supernormal for all but that type of specific knowledge which is represented in telepathic phenomena and other incidents really or apparently transcending it. One important point, however, is that there is no pretence on the surface of any source for the phenomena but the apparent one, namely, that of the subject's own mind, and without any other claim it is folly to assert or suppose it. I selected the case for precisely this characteristic. The personalities show sufficient independence to take the phenomena beyond

ordinary healthy or normal dissociation and to place them in a field by themselves. Once understood, they will limit the claims of transcendental manifestations very decidedly.

I take next another case which will be historical for the psychological care with which it was investigated by Prof. William James and Dr. Richard Hodgson. I refer to that of Ansel Bourne, mentioned previously under "Dissociation," and reported in the *Proceedings* of the Society for Psychical Research (Vol. VII).

Mr. Ansel Bourne lived in Providence, Rhode Island, and earlier in life had had some interesting mental experiences bordering on epilepsy. He seemed to have recovered from these years before the occurrence of the incident which is of interest here. They are mentioned, however, as of importance to the physician and medical student of similar cases likely to recur from such antecedent experiences. They probably explain Mr. Bourne's liability to the attack which proved of so much psychological interest. Mr. Bourne disappeared from his home in Providence on January 17, 1887. In January notice was published in the papers of his disappearance. No trace of the man could be found, and his family gave him up for lost. He was sixty years of age. Eight weeks later he awakened up, as it were, from a sustained trance, if we may so call it, in Norristown, Pa., and through inquiries of the physician who was called in at the time was returned to his home in charge of his nephew. This eight weeks of his life was a blank in his memory. The thought occurred

to Professor James that possibly under hypnosis the man might give up the memory of his life during this trance period, and with Dr. Hodgson the experiment was made. It was successful, and the results were verified, showing that his statements in the hypnotic state were true. The details of his awakening and the experiments are briefly summarized in the following account.

The evidence of people in Norristown, Pa., showed that Mr. Bourne had arrived in this place about two weeks after he left Providence. He rented a storeroom and divided it into two apartments by a curtain. In the front part he kept a little store for toys, confectionery, etc., going to and from Philadelphia to purchase his goods when necessary. In the back part of the room he slept and did his own cooking. He fastened a sign to his window which read "*A. J. Brown.*" The room which he rented was part of a house in which another family was living. He was regular in his habits, and went to church on Sundays, as it had been his wont in his normal state. No one noticed any indications of abnormal actions.

On the morning of March 14th, about five o'clock, he heard an explosion something like a pistol-shot, and awakening found himself in a strange place which he could not recognize. He lay for about two hours in fear that he might be arrested as a burglar. The last thing of his normal life which he could remember was the express wagons at the corner of Dorrance and Broad Streets in Providence. Finally he mustered up courage to open his door,

and hearing some one in the next room, he rapped on its door and was answered by the man of the house, whose name was Mr. Earle. He asked Mr. Earle where he was, and Mr. Earle replied that he was all right, and addressed Mr. Bourne as Mr. Brown. Mr. Bourne said his name was not Brown, and asked again where he was. He was told, and had to ask further what part of the country it was. When told this, he asked what time of the month it was, and, receiving the reply that it was the 14th, he wanted to know if time went backward in this part of the country, as it was the 17th when he left home, and was astonished to find that it was the 14th of March instead of January, on the 17th of which he had left home. Mr. Earle thought the man was out of his mind, and sent for a physician, and the result of inquiry was that a telegram was sent to Mr. Bourne's nephew in response to Mr. Bourne's request and giving of that person's address. The nephew soon arrived, disposed of the contents of the store, and took the man home. As said above, Mr. Bourne had no recollection of the events during this eight weeks, and what I have told was gathered either from others who knew him at the time, or from his own statements under hypnosis, save two or three incidents which were common to the memory of his primary and secondary states.

When he was hypnotized at the suggestion of Professor James, Mr. Bourne gave his name as "A. J. Brown," and told the history of his travels and actions subsequent to his leaving Providence. He had gone to New York, thence to Philadelphia, tell-

ing where he had stopped in the latter place, and finally to Norristown. He remembered the date of his first marriage, but not the name of his wife; his recollection about his children was not clear, and, in fact, very few incidents in his normal life could be recalled in his hypnotic state. In the latter state he claimed to have been born in Newton, N. H. But in fact he was born in New York, though he gave the date of his birth rightly when claiming that it was in Newton, and it was proved that he had never been in Newton. He stated that he had never heard of an "A. J. Brown." Many of the incidents of the hypnotic state were verified, and a few of his normal experiences were confirmed after their mention in the secondary state. But he seemed in this secondary state never to have heard of Ansel Bourne, and in the normal state he knew nothing of "A. J. Brown." All efforts to fuse the two personalities into one failed, and no clear association of the two personalities could be suggested.

Again we have a case which showed no superficial claim to supernormal phenomena and no apparent suggestion of the spiritistic. The independence of the two personalities is no evidence of this suggestion. To the psychiatrist this goes without saying, but the layman has not yet realized the fact that his mental action extends beyond the limits of his normal consciousness, or that there may even be a concomitant consciousness carrying on its activity simultaneously with the primary states, and capable of simulating the nature and actions of a wholly different person. This is why I emphasize cases of

this kind which exhibit so clearly the appearance of another than the real person and yet supply no evidence of being any other. The incidents which were common to the memories of the two personalities, Ansel Bourne and A. J. Brown, are distinct evidence of a deeper unity than the subject's actions superficially indicate. The abnormal state in which the two lives appear as dissociated is somewhat like the dream-life. Dissociation takes place in this to some extent, sometimes to a very large extent, and yet may be united in the memory of the normal condition. So here we have phenomena which suggest to the natural mind an interpretation which will not bear investigation, and having once ascertained this fact, we have a decided limitation to the claims of transcendental agencies. Our own unconscious life may simulate these to any extent within the boundaries of the supernormal, and what it may do beyond this has not been determined with perfect accuracy.

The case of Dr. Morton Prince, of which brief mention has already been made, is probably the most remarkable on record. This characteristic of it, however, may be due more to the thorough way in which it was investigated and reported than to anything more astonishing than in other cases. This case had the good fortune to have the supervision of one versed in psychology, and hence important facts were observed that would have been undiscovered in other instances. It is a case of quadruple or multiple personality, exhibiting four clearly developed personalities, with traces of other incipient

personalities. The four developed instances are the only ones that will interest us here.

I shall not go into the history of this case, as it would be too long. Readers at all interested in such phenomena beyond the most superficial notice should read Dr. Prince's report, *The Dissociation of a Personality.* It is plainly intelligible to general readers, and is not solely for technical students of morbid psychology.

The case is that of a lady whom he calls Miss Beauchamp (pronounced *Beecham*). Dr. Prince names the personalities BI, BII, BIII, and BIV. The first, BI, is the normal Miss Beauchamp. BII is BI hypnotized. BIII was thought at first to be the result of deeper hypnosis, and so BII hypnotized, but was soon found to be a distinct personality of a very interesting character, and not at all the result of any hypnosis, and with a wider knowledge than either BI or BII. The last developed was BIV. In accordance with the usage of Dr. Prince, BIII will be called Sally, which is apparently the name which BIII gave herself, after first using Chris, the nickname of the normal Miss Beauchamp, or BI.

These personalities alternated at various intervals. Sometimes Miss Beauchamp would be all four within an hour. Sometimes one of them would dominate for a considerable period. This question does not interest us here, as we are concerned with the features which illustrate apparent independent persons. The characteristic which enables us to distinguish their separate nature is that of memory. BI has a certain range of memory natural to the normal state. BII

has a wider memory, including the experience of BI and the experiences acquired in this secondary state. BIII, or Sally, has a still wider memory, including all that occurs in BI and BII, except BIV's thoughts, and all that occurs while she herself, Sally, dominates. BIV knows practically nothing of the other three personalities save scattered memories, while Sally possesses a peculiar relation to BIV. Sally, or BIII, knew the acts of BIV, but not her thoughts at first, and only obtained a knowledge of her thoughts after a long effort. BI knew nothing of the other three; BII also knew nothing of BIII and BIV, but had the memories of BI. BIV knew nothing of the other three except what she got by inference. She knew nothing directly, and hated BIII with all the malignity of an evil spirit. BIII, or Sally, hated BI, and in a different way BIV. She called BI the "Saint," and BIV the "Idiot."

I cannot expect the reader to form any clear conception of these complicated personalities, and I have not outlined their characteristics and relations with any such expectations in view. Dr. Prince's book will have to be read and reread to understand them. But I have made this brief statement for the purpose of indicating the complexity of the case, and to show what the mind is capable of doing in its secondary functions. Its interest and importance will be still more apparent when we examine some of the principal phenomena of the several personalities.

The personality which excites most interest psychologically in the case is Sally. The others seemed to be in the way of Sally's development, and were

the object of her various efforts to dispel or dispossess. The alternation from one to another kept Sally from obtaining complete control of the bodily organism and its life. BI, as indicated, was demure and religious. BII seemed more natural, but BIII, or Sally, was a rollicking, mischievous young girl, who wanted to have a good time, and had no patience with the restraints of a religious life, modelled after the Roman Church, with its penances and meditations. Hence Sally wanted to eliminate all that interfered with her plans to control.

BI had an antipathy to snakes, spiders, insects, etc., and BIII, or Sally, would collect spiders and enclose them in a box for BI to discover when she appeared, and the result would be to frighten BI, in which Sally would take great delight. Besides tricks of this sort, Sally would go far into the country on the last car at night, and then waken BI up and leave her to walk home, which would result in a sick spell for BI, Sally never being sick!

An interesting feature in the development of Sally is the following: When BI was hypnotized, BII, who was simply BI hypnotized, as explained before, had her eyes closed. When Sally appeared she complained that her eyes were shut, and the fact interfered with her personality. It was only after a long and laborious effort that she managed to get "her eyes open." When she did, she had more power. A curious incident of it was that, while the eyes were shut, Sally had no sense of touch. That is, she was anæsthetic in that sense. But as soon as she got her eyes open that sense was apparently

sensible, and Sally could do things which she could not do when the eyes were closed. I quote Dr. Prince:

"With her eyes closed she can feel nothing. The tactile, pain, thermic, and muscular senses are involved. You may stroke, prick, or burn any part of her skin and she does not feel it. You may place a limb in any posture without her being able to recognize the position which has been assumed. But let her open her eyes and look at what you are doing, let her join the visual with the tactile or other senses, and the lost senses return."

It was the opening of BII's eyes that gave Sally her power, and she used it with a vengeance. When she was not in control, automatic writing was the only resource she had for expressing her wishes. But when she was in control she resorted to all sorts of devices to keep it and to foil the efforts of Dr. Prince to eliminate her personality and cure Miss Beauchamp. She would write letters to certain friends, making engagements which Miss Beauchamp did not wish to keep. She would write letters to Dr. Prince, to dissuade him from further efforts to treat Miss Beauchamp, who would find what had been done only when Dr. Prince had informed her of it. Sometimes Sally would write a letter to Miss Beauchamp herself, trying to persuade her to take certain courses agreeable to Sally, or would cajole and threaten her in all sorts of ways. At times Sally would become frightened at the results of her own conduct. She feared that Miss Beauchamp might die, and this created anxiety as to what would become of herself, that is, Sally. She

tried to deceive Dr. Prince in a variety of ways. She would simulate Miss Beauchamp, or BI, whenever she could, but was always easily detected by her character and manner. The letters which she wrote are psychological treasures in secondary phenomena, and no less so are the efforts to obtain complete control of the life of the organism from whose actions she was generally excluded. Finally, in order to gain the desired control, Sally began to torment Miss Beauchamp in various ways, such as putting her on an allowance of ten cents a day, hiding her money, unravelling her work, threatening to cut off her hair, making her lie awake all night, etc. All this BI or Miss Beauchamp would learn through others or by the letters sent to Dr. Prince, or statements made by Sally herself to Dr. Prince when BI was unconscious or not dominant. Miss Beauchamp was kept in perfect terror by it.

When BIV appeared a stronger antipathy than ever arose between her and Sally, or BIII. For BIV had more strength of will and character than BI, and was determined, more determined than BI, to get rid of Sally. The struggle that went on between them has no rival in the annals of secondary personality. The two fought against each other for possession of Miss Beauchamp's body. The final prevention of this by Dr. Prince was the fusion of BII and BIV into one personality, more or less. He succeeded in getting their memories to be the same, as he had supposed that BIV was in reality the normal Miss Beauchamp, though BI had at least superficially appeared to be this. But apparently,

and at least for the present, Sally was suppressed with the fusion of two or more of the personalities into one.

Sally's superior knowledge as compared with that of the other personalities made her a most convenient source of information to Dr. Prince. He tested her regarding her claims to know what the other personalities did or thought, and he found her quite reliable, though the others did not know a thing about Sally, except what Dr. Prince told them or what they learned indirectly by letter and inference. As examples of what Sally claimed to know and seems to have known correctly are Miss Beauchamp's dreams. Dr. Prince got Miss Beauchamp to tell him her dreams, which she did. Sally repeated them and told a great many more which Miss Beauchamp could not remember. Sally said that there was no difference whatever between those that Miss Beauchamp told and those which she did not know. Sally said that she did not understand why Dr. Prince called one class of them dreams and the other not, as they were all alike, and could not be distinguished by herself. Finally Sally hypnotized BIV, following the idea which she had caught from Dr. Prince's actions in the case of BI, and Sally also succeeded, as we have already indicated, in producing hallucinations in BIV. All this was more or less verified by the reported experiences of the other personalities.

Sally had made certain claims about the extent of her knowledge, and he conceived the plan of having her write out an autobiography of herself. This

she attempted to do, but BIV would discover the written manuscript and destroy it. Finally Dr. Prince got an account of her life. She claimed to have a memory of events when she was in the cradle (that is, when Miss Beauchamp was in the cradle). She told of Miss Beauchamp's learning to walk and talk, and of her playing with objects on the floor. Sally, however, insisted that she herself was not the same as Miss Beauchamp, and that her own consciousness was distinct from that of Miss Beauchamp. Let me quote at some length from Sally's autobiography.

"She was a very little girl just learning to walk, and kept taking hold of chairs and wanting to go ahead. She didn't go ahead, but was all shaking in her feet. I remember her thoughts distinctly as separate from mine. Now they are long thoughts that go round and round, but then they were little dashes. Our thoughts then went along the same lines because we had the same experiences. Now they are different; our interests are different. Then she was interested in walking, and I was too, only I was very much more interested, more excited, wildly enthusiastic. I remember thinking distinctly differently from her; that is, when she tried to walk she would be distracted by a chair or a person or a picture or anything, but I wanted only to walk. This happened lots of times.

"Learning to walk was the first experience of separate thoughts. I remember before this there wasn't anything but myself, only one person. I don't know which came first. I remember when I

was there farther back than *she* can, and therefore why wasn't I the person?

"I remember lots of little things. When she was a little bit of a thing (so small that she couldn't walk very well) she had visions very often. I didn't, but I was conscious of her having them. Her visions didn't represent real things as they do now. I thought they were interesting and enjoyed her having them. During all her childhood I remember enjoying many of the things she did. She was awfully fond of out-of-door things, — climbing, running, etc. I enjoyed them and wanted to go farther than she did. Some people she liked I didn't. Some people she went to see and talked with I didn't want to see, but couldn't help it.

"I suggested things to her sometimes by thinking hard. I didn't really do them; she did them, but I enjoyed it. I don't know that I made her; I thought about them very hard. I didn't deliberately try to make her, but I wanted to do the things, and occasionally she carried out my thought. Most times she didn't when my thoughts were entirely different from her own. Sometimes she was punished for doing what I wanted; for example, I didn't like going to school; I wanted to play 'hookey.' I thought it would be awfully exciting, because the boys did it and were always telling about it. She liked going to school. One day she stayed away all day after I had been thinking about it for a long time. She didn't want to do it, but she did. She was punished and put to bed in a dark room, and scolded in school

and made to sit on one end of the platform; she was shy and felt conspicuous.

"I always knew her thoughts; I knew what she was thinking about on the platform. She was thinking partly of being penitent and partly of fairy-tales, so as not to be conscious of the scholars and teacher, and she was hungry. I was chuckling, and thought it amusing. I did not think of anything else except that her fairy-tales were silly. She believed in fairies, that they were very real. I didn't and don't. At this time she was a little girl."

Sally claims that she never sleeps, and Dr. Prince found that she knew nothing of time. She could not distinguish between ten seconds and five minutes. As real or apparent evidence of her constant waking state is the fact that she could tell both the remembered and the unremembered, the conscious and unconscious dreams. The autobiography implies the same fact as well as a concomitant or parallel state of consciousness with the others, and Dr. Prince seems to have obtained independent evidence of this simultaneous consciousness.

There is no superficial claim made in this remarkable case that any outside intelligence is responsible for the apparent independent personalities. Yet in so far as distinction between personalities is concerned and in respect of the peculiar character of "Sally," who is apparently so distinct from the ordinary life and experience of Miss Beauchamp and claims never to sleep and knows nothing of time, the case is one which offers a rare opportunity to those who do not know the capacities of secondary per-

sonality to set up the hypothesis of external intelligence in the case. The old belief in the possibility of "possession" lends support to such an interpretation, and I can well understand it from the point of view of those who accept the Cartesian philosophy or suppose that the mind has no capacity for consciousness or intelligent action beyond the limits of its normal or primary states. But the proved fact of subliminal action creates a difficulty for the older theories of "possession" that throws the burden of proof upon them. Besides it cannot be too strongly emphasized that, in this case, there is no evidence whatever of supernormal knowledge, and none that would go toward proving that the intelligence displayed is beyond or transcends the experience of the normal Miss Beauchamp, unless we accept the autobiographic account of Sally extending back to infancy. But there is nothing to prove this, and even if it were proved there is no evidence that such a memory would be supernormal in the sense which psychical research uses the term. Moreover, as the claim of spiritistic intelligence is not made for Sally, or other personalities, by themselves in the account of them, there can be no excuse for so considering them, and the absence of the kind of evidence that would be necessary to establish a presumption for such a view suffices to throw the hypothesis out of court.

This view does not require to be mentioned to the student of psychiatry or to the psychic researcher who understands abnormal psychology, but the layman still requires knowledge of the standard for dis-

criminating between subconscious mental action and the agency of transcendental influences. It is not enough that a phenomenon should be involuntary or unconsciously produced. It must be much more to obtain the credentials of the supernormal. It must bear the stamp of knowledge acquired by some other process than sensory experience. It must also show evidence of more than the imagination may produce in its subliminal creations, and we have at present no criterion for determining the limits of this function. It matters not what characteristics of independent personality are exhibited by secondary states or by the subject of the phenomena claimed to have an external source, if they do not show evidences of personal identity of deceased persons they are referable to subliminal action. Hence secondary personality explains many phenomena that formerly received another explanation, and the criterion for the belief in spirits is made far more stringent.

Such cases as I have briefly summarized could be indefinitely illustrated, but they suffice to show what the psychologist has to consider in the study of the claims for the supernormal. The illustrations which I have just given show no claim on the part of the secondary personalities to be transcendental. But there are instances in which this claim is made, and they are the next in order to consider. The first type of them represents the next step after such as I have quoted. I quote an instance given by Mr. Myers from the *Proceedings* of the Society for Psychic Research.

A gentleman tried automatic writing. This, as the

reader may know, is unconscious writing, and often exhibits all the intelligence of the normal or primary consciousness, though this latter is not aware of the muscular action or of the thoughts that are in the course of expression. The gentleman alluded to tried this, and asked questions to see what the answers would be. After finding that his hand would unconsciously write, he proceeded to treat it as a person, and received replies as if from a person. The following is an instance of the results. The matter in parentheses represents the questions. The rest consists of the answers.

" (Who art thou?) Clelia. (Thou art a woman?) Yes. (Hast thou ever lived upon the earth?) No. (Wilt thou?) Yes. (When?) Six years. (Wherefore dost thou speak with me?) E if Clelia e l."

This last answer was interpreted as a sort of anagram and to mean " I Clelia feel." The gentleman says in a note that he never knew any one by the name of Clelia and that as a young boy he had been much interested in anagrams. But we have in the instance a definite claim to be something apparently transcendental, and the evidence of the claim is absolutely nothing. The phenomena are like delirious replies to question where the mind is apparently almost delirious and having once imagined a personality, a condition perhaps occasioned by the very conception of the experiment as an ostensible attempt to communicate with transcendental intelligence, a secondary personality soon developed. Once suggested, the subliminal conscious continues to play the part, and we have the vague answers of a mental con-

dition at a loss to do clear thinking, and in a condition of delirium or somnambulism.

There are very frequent cases of this phenomena in forms claiming to communicate a philosophy, ethical and spiritual advice, or the habits of life in another world. They very often reflect points of view quite distinct from the conceptions of the individual's normal experience, but when examined they are not beyond either the natural capacities of one's dream-life or subliminal action idealizing the conceptions of the normal life. Illustrations of this kind are legion, but as they contain no evidence of the supernormal of any kind they are discredited in their claims, and so regarded as the products of secondary personality.

One of the most interesting and most important illustrations of the phenomena under consideration is that of Professor Flournoy, of Geneva, Switzerland. He is professor of psychology in the college at that place. He had heard through a colleague, Professor Lemaitre, about a lady who was apparently a remarkable "medium" and whom he calls by the pseudonym Mlle. Helene Smith, and having an opportunity to witness some of the phenomena in her case, took them under investigation and published a volume regarding them. This he called "From India to the Planet Mars." This title was suggested by the variety of the phenomena purporting to characterize the lady's alleged supernormal powers. The phenomena took the form of alleged spirit communications. Some of them purported to come from a young man who claimed to have been reincarnated on the planet Mars. Others purported to come from

Marie Antoinette. Still others from a Hindu princess who lived at the opening of the fifteenth century or thereabouts. The principal communicator claimed to be a famous European. The account of the phenomena reads like a romance, and Professor Flournoy has improved his opportunity to write on the subject as if it were a romance, though he also understands, and treats the matter as a scientific problem. The incidents should be given in a little more detail.

The four most striking personalities represented in this case of Mlle. Helene Smith have been indicated above. One gave the mythical name of Leopold. An accident of suggestion induced this personality to state that his real name was Joseph Balsamo, who was the famous juggler known as Count Cagliostro, who lived from 1743 to 1795. He was one of the most famous scoundrels of Europe. Nothing occurred to establish the identity of this personality, and the only interest it has is its simulation of a spirit without giving any facts adequate to the proof of such a claim. His presence was manifested in three ways: by speech, by visions, and by automatic writing. His communications had all the verisimilitude of reality. At times Mlle. Smith could see an apparition of him, and at others heard a voice claiming to be his. At still other times communications would be addressed to her or to others through automatic writing, with various directions in regard to the lady's health or conduct. Flournoy describes the phenomena as follows:

"He presents himself," referring to Leopold or Cagliostro, "before her endowed with corporeality

like that of other people, and hides objects which are behind him exactly as an ordinary individual of flesh and bone would do. He talks into her ears, generally into the left, in a characteristic voice, which appears to come from a variable distance, sometimes about six feet off, sometimes much farther. He jars the table on which she has placed her immobile arms, takes hold of her wrist and writes with her hand, holding the pen in a manner unlike her, and with a handwriting wholly different from hers. He puts her to sleep without her knowledge, and she is astonished to learn upon waking that he has gesticulated with her arms and spoken through her mouth in the deep bass voice of a man, with an Italian accent which has nothing in common with the clear and beautiful quality of her feminine voice.

"Moreover, he is not always on hand. He by no means answers Helene's appeals on all occasions; is not at her mercy; far from it. His conduct, his manifestations, his comings and goings cannot be predicted with any certainty, and testify to an autonomous being, endowed with free will, often otherwise occupied or absent on his own affairs, which do not permit of his holding himself constantly at the disposal of Mlle. Smith. Sometimes he remains for weeks without revealing himself, in spite of her wishing for him, and calling upon him. Then, all at once, he makes his appearance when she least expects him. He speaks for her in a way she would have no idea of doing, he dictates to her poems of which she would be incapable. He replies to her oral or mental questions, converses with her, and discusses various

questions. Like a wise friend, a rational mentor, and as one seeing things from a higher plane, he gives her advice, orders even sometimes directly opposite to her wishes and against which she rebels. He consoles her, exhorts her, soothes, encourages, and reprimands her; he undertakes against her the defence of persons she does not like, and pleads the cause of those who are antipathetic to her. In a word, it would be impossible to imagine a being more independent or more different from Mlle. Smith herself, having a more personal character, and individuality more marked, or a more certain actual existence."

There is some evidence that the psychological origin of this personality, appearing now as an apparently independent voice or again as an apparition to the sense of sight, was a fright at a dog which attacked Mlle. Smith when ten years of age. The man who rescued her from the dog wore a long brown robe with flowing sleeves and a white cross on his breast. She supposed him to be a priest, but she was too much frightened to observe him carefully, and he disappeared so soon as not to be afterward identified. But this Leopold in her apparitions is dressed in a long dark robe, though he also has other disguises at times. But probably the early fright gave the impetus to subconscious action, which, when systematized, developed this personality, and the name was the result of an accident not now traceable. But as remarked, he assumes the rôle of an independent being, using a type of spelling in the automatic writing that was characteristic of the last century, and also employing words in a way not now used.

The writing itself, however, does not resemble the script of the historical Cagliostro, of whom some letters survive. He undertakes, too, the services of a physician, diagnoses diseases, and prescribes for them. But throughout he does not seem to transcend the possible memory and capacities of Mlle. Smith. The reader interested will have to go to Flournoy's account to ascertain the incidents of most dramatic character, as they are too long to quote. We can here concern ourselves only with the most general incidents which represent the allegation of independent existence and spirit communication, but which will not bear examination and analysis in the light of such a supposition.

The Martian phenomena in the same case were more complex. They were developed in a gradual manner, and apparently in such a way as to illustrate the extremely delicate machinery of suggestion and subliminal association and synthesis. Professor Lemaitre had once incidentally remarked to Mlle. Smith that it would be delightful in these seances to hear from some of the planets. The first hint of any attempt at this representation was a long time afterward, as if the subconscious action of the mind had to take time to evolve its plans and systematic production of alleged messages from a planet. At a seance Lemaitre was present, and Mlle. Smith had the sensation of leaving her body, and described the experience as thus reported:

"She felt a tremor which almost caused her heart to cease beating, after which it seemed to her as though her head were empty and as if she were no

longer in the body. She found herself in a dense fog, which changed successively from blue to a vivid rose color, to gray, and then to black; she is floating, she says; and the table supporting itself on one leg, seemed to express a very curious floating movement. Then she sees a star growing larger, always larger, and becomes finally 'as large as our house.' Helene feels that she is ascending; then the table gives, by raps, 'Lemaitre, that which you have so long desired!' Mlle. Smith, who had been ill at ease, finds herself feeling better; she distinguishes three enormous globes, one of them very beautiful. 'On what am I walking?' she asks. And the table replies: 'On a world — Mars.' Helene then began a description of all the strange things which presented themselves to her view, which caused her as much surprise as amusement. Carriages without horses or wheels, emitting sparks as they glided by; houses with fountains on the roof; a cradle having for curtains an angel made of iron with outstretched wings, etc. What seemed less strange, were people exactly like the inhabitants of our earth, save that both sexes wore the same costume, formed of trousers very ample, and a long blouse, drawn tight about the waist and decorated with various designs. The child in the cradle was exactly like our children, according to the sketch which Helene made from memory after the seance."

Then followed an alleged message from a person who purported to be the son of a lady sitter, and who finally claimed to be reincarnated on the planet Mars. Some conversation was held with him, and Mlle. Smith

returned to normal consciousness with the same experiences which she had as she went into the trance, except in the reverse order.

The hallucinatory character of these phenomena is apparent to any student of abnormal psychology, as there is nothing probably or verifiably supernormal in them. But soon afterward there began a vast system of communications, which consisted in giving a complete alphabet of the Martians and many samples of their language. The following is an illustration which accompanied the vision of a house on Mars:

Dodé né ci haudan té mess méche métiche Astané ké dé mé vêche.

This was afterward translated into French which means in English: "This is the house of the great man Astane, whom thou hast seen."

Sometimes this language was given in automatic writing, and sometimes heard as if uttered, that is, it was an auditory hallucination. Examination of it shows great consistency in the use of the terms. The same terms were always used for the same ideas, though the work extended over long periods. But it is apparent in the critical examination of it that it has decided structural resemblances to the French language, a fact which makes it absurd to suppose that it is anything but a subliminal fabrication by the mind of Mlle. Smith. Leopold figured in some of these phenomena, but most of them purported to be influenced by the deceased and reincarnated son of the lady mentioned. But there had been no evidence of the supernormal in his impersonation. The

suggestion of it came from the lady herself, who recognized certain resemblances in the manner of Mlle. Smith and that of her son, and the consequence was that this mimicking subliminal machinery took up the hint, and the claim was advanced that the communications were made by the deceased son. The impersonation, however, throughout is perfect in so far as the superficial characteristics are concerned.

The impersonation of Marie Antoinette was such as could easily have been done by any one familiar with the history of that unfortunate queen. Nothing bearing upon her identity was apparent in the phenomena save the mannerisms, which all who are familiar with her life and character might imagine, and they were of the slightest importance. The impersonation of the Hindu princess had more interest and presented some apparent evidence at least of the supernormal. But this would not bear close examination in the light of the fact that the few verifiable Hindu words written or spoken by Mlle. Smith and purporting to come from the princess might possibly have been seen by her in a book in the library of her own town, which contained the facts in question.

Professor Flournoy makes it clear that there is no reason to suspect the phenomena of being conscious productions of Mlle. Smith's fancy or imagination, but purely the result of subliminal mental processes which will systematically follow, at times, the main mental interests of the normal consciousness. With this fact in view we have one of the finest illustrations extant of systematic simulation of spiritistic phenomena taking a more definite and plausible char-

acter in this case than the previous instance quoted. But it fails in the fundamental feature of the supernormal, and must be classified with secondary personality. Professor Flournoy thinks that there were supernormal phenomena associated with these impersonalizations. But he does not reproduce the evidence of it, and hence his opinion cannot count. He is very careful to give all the facts and evidence that he can obtain to prove the influence of secondary personality, but he has nothing but assertion for the supernormal. Some other incidents in the career of the lady undoubtedly suggest, though they may not prove, the existence of the supernormal. But I do not have these in mind in my remarks at present regarding the supernormal. I would say also that if it were not for Professor Flournoy's evident thoroughness in his treatment of the psychological aspect of the case in regard to secondary personality, his allusions to supernormal accompaniments would have to be ridiculed. I am willing to accord them consideration in the light of his evident sobriety in treating the phenomena as subliminal, but, if he was satisfied that there were any incidents that were supernormal, and associated with these undoubted creations of secondary personality he should have been as careful to produce the evidence for his view. As it stands, one can only minimize his statements in regard to the supernormal, and praise him for his insight into secondary personality.

The reader of this short account, however, will obtain a very inadequate conception of its interest if he leaves Professor Flournoy's book unread. It repre-

sents a most instructing instance of phenomena which superficially indicate the influence of outside and transcendental agencies, but which vanish at the touch of scientific analysis, at least as evidence of supernormal influences. They make very clear what the rigid criteria must be for proving the influence of outside minds upon the organisms of the living.

I have also a case somewhat similar to that of Flournoy. It involves alleged communications from the planet Mars. It contains a description of a palace, with curtains that hang in it, gardens in front of it, mountains, cloud, and sky in the background, an air-ship, an embroidered dress with a description of the colors in it, and some account of the inhabitants with their hieroglyphic language. This was followed by alleged communications from a man calling himself Harrison Clarke, who gave a specific account of his life and his death at the battle of Shiloh. No trace of such a person could be found anywhere, or in the history of the battle with its list of dead. I shall not detail, however, the incidents of the case, as there have been unquestionably supernormal phenomena in the course of it. The Martian incidents are mentioned because they duplicate that interest in the planet which the public has always shown regarding its possible habitation. There is not the slightest evidence of the reality of the communications which, in spite of their superficial claims to spirit origin, are a warning to the student of such phenomena, and against hasty speculations regarding their causes. The evidence for the supernormal must be so stringent in its character and so exempt from the suspicion of

subconscious action or origin in the mind of the subject through which it is manifested that no question of its outside agency can be raised. That seldom occurs. It is not enough to have either the honesty of the subject guaranteed or the fact that the phenomena are not consciously produced. Simulation of external influences is so common to the subconscious functions of the mind that only a peculiar type of phenomena will even suggest supernormal agency. The type of fact must be such as proves telepathy or that form of intelligence which would lead us at least to suspect discarnate agency. To suggest telepathy the phenomena must be a large number of specific coincidences between the thoughts of two living persons, so definite and complex that chance and guessing cannot be attributed to the agents. To suggest spiritistic agency the facts must be such as a living person would exact to prove the identity of a friend at the other end of a telegraph wire, and facts not known to the person who delivers them as having a "supernatural" source.

The instances which I have quoted do not answer to such demands. No matter what associated evidences of the supernormal may exist in the same or other cases, the phenomena illustrating the peculiar mental functions of the subject are not instances of that supernormal, and, whatever their explanation, exhibit the mental conditions through which all supernormal phenomena have probably to be produced. Means will have to be obtained for discriminating between what is the product of the subject's mind and what is instigated from without. Hence secondary

personality must represent what the mind will evolve from its own resources when its subliminal or unconscious action is once set into motion. This conception of such phenomena will indicate how near to the supernormal secondary personality may come without actually being it, and hence while not constituting evidence of it, may show the subjective agencies for the revelation of the supernormal when the facts justify its supposition. But the gauntlet which the supernormal has to run is a severe one.

It will appear to one class of readers that I am disparaging the belief in spiritistic agency, and to another class that I am explaining alleged supernormal phenomena in a perfectly natural way. Perhaps both classes would agree as to the antagonistic tendencies of this discussion of secondary personality to the existence of the supernormal. But if this is the assumption I make haste to disillusion both of it. The skeptic has apparently still to learn that the phenomena of secondary personality, while they indicate decided limitations to the supernormal, do not exclude the use of subliminal conditions for the transmission of it; and the ready believer in spirits has still to learn that these agencies are not so frequently active as he imagines. I am here only insisting that we cannot afford to be fooled in so important a subject as modifying the long-standing laws of normal psychology or accepting transcendental influences when the evidence is not sufficient. The belief in them is too passionately interested in illusions to be permitted easy victory, and I, for one, welcome the difficulties and objections to such a belief as a means of restrain-

ing speculations that do more harm than good in human life. I know the good that may come from extending our views of the meaning of the universe, but this knowledge must not be extended at the expense of rational thinking. Reasons will be abundant in the sequel of scientific inquiry for thus limiting the claims of hasty theories, and they will all be in favor of the metaphysical significance of individuality and the ethical importance of restricted knowledge of the transcendental. In the meantime patience with scientific inquiry is the highest duty, though it deprives us of many an illusory conception of evidence.

CHAPTER X

MIND AND BODY

There are two more or less distinct problems in the question regarding the relation between mind and body. They are the speculative and the practical problem. The speculative problem is philosophical and religious and the practical is therapeutic and ethical. The speculative problem grew out of the original controversy of Spiritualism with Materialism. The second is a modern question, probably initiated by idealism and taken up seriously by various schools of believers in the efficiency of consciousness in healing diseases. I shall discuss the two problems separately.

The controversy between Spiritualism, using this term in its old philosophic and respectable sense, and Materialism was whether man had any soul or not, and whether it survived death. Those who believed that there was a soul conceived it as a tenant of the body, and so described it, so that death was but a transition from this habitation to another life. This other life was conceived either as a reincarnation or as the carrying with our consciousness the ethereal organism which we already possessed in the physical life. Plato adopted reincarnation as his expression

of the doctrine, Christianity adopted the latter, except as it came to believe in a physical resurrection. But both types of thinkers thought of the soul as an inhabitant of the body and removable from it. The materialist conceived the problem in two ways. He originally admitted, as among the Epicureans, that the soul was a fine material or ethereal organism, matter of fine type and ether not being distinguishable. But he claimed that this ethereal organism perished at death. The later materialist did not speak of a soul at all, except as a synonym of consciousness, and treated consciousness as a function of the physical organism. It followed as a necessity from this conception that it vanished at death as other physical functions of the same organism. The older form of materialism was adjustable to the conceptions of Christianity, as the idea of the spiritual resurrection probably came from it. This view was quite identical, as intimated above, with the notion of tenancy in the body. The one conception which thus became irreconcilably opposed to survival after death was that of modern materialism, which conceived consciousness as a function of the physical body, and there was in this no need for thinking or speaking of a "soul" as a substance, if the term was to be used at all. Hence it came to denote the phenomena of consciousness as distinct from physical phenomena. The consequence was that the problem of the relation between "soul and body" came to be one affecting the question of its real existence and survival after death. If this relation were conceived as that of a tenant or substance coexisting with and as at least

in some respects influencing bodily actions, there was at least a presumption that it did not disappear with the dissolution of the body, this last being an unquestioned fact. The appeal could be made to the admitted indestructibility of substance, as in the case of the atoms or of all substance. If it were not conceived as a tenant or substance, but as a phenomenal function, like digestion or circulation, it presumably or probably perished as do these similar functions. The controversy, therefore, became one to determine whether personality survived death or not, with one school affirming and the other denying it. But both admitted, hypothetically, the position of the other on the condition that the assumptions were correct about the nature of the soul. The materialist admitted readily enough that the soul would be imperishable, if it were an indivisible substance, but he held that it was not a substance at all, but a phenomenon, a function of the organism. The spiritualist admitted as readily that the "soul" or consciousness perished, if it was a phenomenon, but he held that it was a substance and came under the laws of substance. Consequently the whole interest of the question came to be concentrated in the issue whether personality survived or not.

Two schools in Greek thought maintained that "soul" was substance, and these two schools constituted the whole reflective spirit of Greece. They were the Platonic, or the Idealists, and the Epicurean, or the Materialists. Plato and his followers held that it was a "universal" substance, which constituted the permanent elements in the forms of life about us, and

so was reimbodied in different generations and types of organic life. It was thus imperishable, but lost its individuality or personality. The transitions or reincarnations did not carry with them the individual characteristics of any previous embodiment, but only the effects of previous experience. The Epicureans gave some individuality to the soul, but it was the individuality of a complex organism which perished at death, according to their assumptions of what must characterize complex organisms. But as they held to the imperishable nature of substance in its elements they opened the way to two replies to their view. First, they had no sensible evidence that the fine ethereal organism perished with the body. In fact they had no sensible evidence that it existed coincidentally with the body as a tenant of it, and so their view that it perished with it was a pure assumption unsubstantiated by any evidence whatever. Secondly, their opponents had only to maintain that the soul was an indivisible element to bring it under the assumption regarding the indestructibility of substance to guarantee its permanence. This Tertullian did, and tried to establish the Christian belief in immortality upon a basis which the materialist could not dispute, unless he turned away from his method of speculation to the scientific one of evidence.

But before Tertullian advanced his position the Christian had started with the evidential method in his assertion of the resurrection against the claims of the materialist, and in doing so he assumed the materialist's doctrine of a fine ethereal organism, or spiritual body. It was not the materialist, but the anti-mate-

rialist that first appealed to evidence, and it may conduce to clearness in the understanding of the historical movement on this issue to briefly outline the development of it.

The materialists, as I have said, believed in an organism associated with the body, and which they agreed to consider the "soul." But as they believed that all complex organisms perished, they held that the soul perished also. The first attack on their system was the one mentioned above. It was that there was no sensible evidence of this disappearance in the nature of things. This attack was not made in so many words, but was the assumption lying at the base of the doctrine of the resurrection, whether we regard it as physical or spiritual. To controvert that doctrine, all that was necessary was to show cases of actual "rising from the dead." The Greek theory of gravitation was not like ours, but maintained that matter rose and fell of its own nature. Heavy matter went downward, light matter rose upward, the one toward the earth and the other heavenward. Now as the soul was supposed to be a fine ethereal matter, it would naturally rise when released from its attachment to the grosser body. Thus a theory of the resurrection could be established, at least *a priori* on the basis of materialism itself. And that such a view did exist before it was asserted of any particular individual can be seen in the recorded controversy between the Sadducees and Pharisees, the one affirming and the other denying the "resurrection." All, therefore, that was necessary was to appeal to the phenomena of apparitions in order to satisfy the

terms of the materialist himself. It would be necessary, of course, to guarantee that the apparition had some other meaning than an illusion or an hallucination, but in the early period of reflection this issue had not been worked out scientifically, and we know from history that the belief in apparitions exercised a powerful influence upon belief in the "supernatural," and it is not necessary to assume that the phenomena were real in order to admit their influence on speculation. The belief in their occurrence was sufficient to start a philosophic controversy, and in the controversies of the time there is evidence that the phenomena of apparitions had their influence in shaping conviction on a future life, whether we choose to credit or discredit their nature. If then any particular individual should be represented in an apparition, the fact would naturally give rise to a contradiction of the materialist's position. It would suggest, or be taken to prove, the resurrection.

Now suppose some one or more persons should have had an apparition of Christ after his death, it is easy to see what use could be made of the fact. It would not be necessary for us in this discussion to maintain that such an apparition was real. We might admit with Renan that it was an hallucination due to excitement. All that is necessary is to suppose that some experience occurred which could be taken, rightly or wrongly, for an apparition of reality. That such stories did rise concerning Christ is apparent in the experience of St. Paul, of Christ walking on the water, and of his appearance to the disciples in the closed room, and possibly as "the con-

sciousness of a presence " to his disciples on the way to Emmaus. A similar phenomenon is reported in the appearance of Moses and Elias to Christ himself. Suppose this to be mythical, as we might well do, and suppose that the others were incidents due to excited imaginations, the case would not be in the least altered regarding the use which could be made of them against the materialistic theory by those who actually believed in the reality of the phenomena. And we have the evidence that they were so used triumphantly to dispute materialism. The appeal was to facts, not to speculative assumptions, and it matters not for the efficiency of the facts whether they were actually what they were taken to be or not. They were believed to be real as they were experienced, and were used on that assumption of their character.

But various intellectual influences conspired to give the belief at the time the form of a physical resurrection, and this the resurrection of the grosser body. I do not require to enter into the question whether they were valid influences or not. They probably arose out of the accepted theory that the fine ethereal organism of the materialists was " matter." With antiquity " spirit " was not distinct in kind from " matter." It was a fine " matter," and so could be denominated as physical, and though there were influences to cultivate the idea that spirit was immaterial, the materialistic position could be used, especially in the light of apparitions, to favor the idea that the resurrection was " physical," because it was of the fine ethereal organism, and a dispute

might arise as to whether it was "physical" or "spiritual" on the basis of the rising distinction between matter and spirit. The common mind which was not familiar with the philosophic conceptions would tend to the doctrine of the grosser physical resurrection, as reflected in the allegation of it. The philosophic mind would tend toward the other view, as we find in St. Paul, who distinguished between the "natural" body which perished and the "spiritual" body which arose from the dead. Then, when spirit was supposed to be wholly material, as it was to be so conceived, any form of "physical" or "bodily" resurrection would come to mean the grosser physical body, the other conception of it as fine "matter" having been exchanged for "spirit" or immaterial substance.

Now as the materialists had to drop their conception of a fine material or ethereal organism in order to save their denial of immortality, the interest of Christianity was not particularly served by further appeal to facts; and as on the other hand the doctrine of the physical resurrection prevailed in human belief, the philosophic controversy was between a philosophy which defended the physical resurrection of the grosser type and the philosophy which had abandoned the view of an ethereal organism and asserted the phenomenal nature of consciousness. That is to say, in abandoning the ethereal organism, materialism accepted the view that consciousness was a function of the organism. Instead, therefore, of insisting upon the appeal to facts of experience in its defence, Christian philosophy virtually admitted that

consciousness was a function of the bodily organism, and resorted to the physical resurrection to support its belief in a future life. This of course was the position of the common mind. Other philosophers slightly altered this view, and maintained that the soul was a substance different in kind from matter and inhabiting the body as more or less necessary for its activity, and having to succumb to the authority of the Church, accepted the resurrection there held, and so supposed that the soul would again inhabit its original organism. The whole conception of the "spiritual" resurrection and the appeal to facts was thus lost and speculative philosophy assumed to direct human thought in other directions, namely, in those of an immaterial substance and the idea of a physical resurrection. This view ruled history for many centuries, in fact, down to the present time, with occasional differences among small groups of thinkers. At no time did it work itself out into perfect clearness. It was always compromising with the idea of a physical resurrection, which was a dogma of the Church. Hence philosophy, which had always to be ancillary to theology, as a condition of its existence, had to admit or assume the physical resurrection, whatever view it took of the soul, and as the physical resurrection gave so much trouble to rational thought, the most clearly defined controversy was between materialism, which denied the existence of spiritual substance, and the opposing philosophy, which affirmed it, with the latter fluctuating between an idealistic interpretation of the soul and what was no better than a materialistic view of it, in so far as

its conception of the dependence of consciousness on the organism was concerned. Let me summarize the case.

Materialism (1) abandoned the idea of an ethereal organism as too much of a concession to spiritualism, and (2) set up the phenomenal or functional nature of consciousness, making it an activity of the grosser instead of the finer organism. The atomic doctrine and the laws of chemistry helped this view to become clear. Spiritualism (1) set up an antithesis or opposition in kind between matter and spirit or mind, tending to create the idea that spirit was *spaceless*, and so excluding the "spiritual body" doctrine, (2) accepted the functional nature of consciousness though making it a phenomenon of spirit, and (3) handicapped its own position by concession to the theological dogma of the bodily resurrection. Thus the first feature of its position was inconceivable to the common mind and the third was inconceivable to the intelligent and philosophic mind, while the second partly agreed with the materialist, namely, that consciousness was functional in its nature. The difference was that materialism was clear in its conception of the relation between consciousness and the organism, while spiritualism was not sure of any other subject for it. Consequently, after the abandonment of the Pauline idea of the spiritual body, the controversy was between philosophy or science and superstition, on the one hand, and between the two functional views of consciousness, on the other; one making it a phenomenon of the organism and the other of some other subject or substance which it did

not define in spatial terms. In both forms of the dispute, however, the issue was whether the organism was or was not the subject of consciousness, the materialist affirming and the spiritualist denying that it was.

As long as the philosophic mind maintained the created and phenomenal nature of matter, which it did for many centuries because the Church was able to suppress materialistic beliefs, materialism could not make any progress. Philosophy had held that both the sensible and the supersensible material world were created, and so had to set up "spirit" as the creator. That is, it maintained that the world as seen by the senses and the world beyond the senses, namely, the atomic world, were ephemeral and subject to the will of God, or the immaterial and spiritual background of things. As long as this view could be sustained, materialism had but little chance to survive. But the discovery of the indestructibility of matter and the conservation of energy changed all this. They again restored the idea that matter was permanent and not phenomenal, and materialism, lacking evidence that consciousness was independent of organism, made it a phenomenon of matter, so that the existence of God and the immortality of the soul were directly attacked by one blow. Materialism strengthened its fortress, and the relation between mind and body was conceived as that of a function to a dissolvable subject. It took up both a philosophic and a scientific position. Its philosophic position was based upon the doctrine of the conservation of energy and its scientific position upon

evidential phenomena. Both the philosophic and the scientific view assumed a causal relation between mind and body, or mental and physical phenomena, and subordinated the former to the latter in such a manner as to imply the transient and phenomenal nature of consciousness.

The philosophic view of materialism interpreted this causal relation after the conservation of energy, and so tacitly or explicitly denied the existence of really spiritual phenomena of any kind. It had logically to reduce consciousness to a mode of motion, and as this had been denied by the spiritualists, the conclusion most natural was that consciousness perished at death, as did other functions of a motional sort in the organism. The conservation of energy had interpreted consciousness as one of the mechanical series and implied that it had the same destiny.

The scientific view, while it also assumed a causal nexus between the physical and mental series, did not require to apply the conception lying at the basis of the conservation of energy, but remained content with the view that consciousness depended upon the physical for its existence. To prove this it pointed to the variations in the integrity of consciousness according to the condition of the physical organism. An accident or blow, a disease, lesion, or other disturbance in the organism sufficed to suspend consciousness as they suspended circulation, temperature, digestion, or other functions of the body, making consciousness depend, not on a spiritual subject, but upon the material organism. Then it had the fact that consciousness is known only in connection with

the physical organism and is not known apart from it, discarding all reference or consideration of the phenomena examined in psychical research, and hence it concluded that consciousness is a function of the organism, just as we should and do explain the rain by the clouds. That is, rain is always associated with the clouds, and when the clouds are not present it does not rain. We infer that clouds are the condition of rainfall. So if consciousness is associated with a physical organism and we do not find it present or existing when the organism is not present, we naturally infer that it is a function of the organism with which its known existence is connected.

The philosophic materialist, in his application of the doctrine of the conservation of energy, did not see that it might recoil upon himself. The spiritualist had maintained a theory of creation and so could believe in the introduction of new forces into the universe. But the conservation of energy at least apparently denied this, and so seemed to establish the materialist's position. And then again, the conservation of energy applied the principle of causality between phenomena in a way to maintain that all changes of matter and motion were made without gain or loss in the total amount of them. Neither increase nor decrease of energy was possible, according to its doctrine. Hence when it came to apply its conception to the relation between physical and mental phenomena it had either to regard consciousness as a part of the effect initiated by the cause or regard it as an inexplicable "epi-phenomenon." The latter alternative was to give up materialism:

the former was to interpret consciousness as a mode of motion. Traditional conceptions had maintained that, if this be the case, it was perishable. But the materialist here forgot that, in that conception of the conservation of energy which makes cause and effect the same in kind, in order to preserve the identity of quantity in energy with change, he logically had to retain consciousness in the world as well as motion, and that we could as well eliminate motion as mental facts. As far as he assumed any identity between antecedent and consequent as a condition of measuring their quantitative identity in phenomenal changes, he retained consciousness as well as motion in the series of phenomena with which he dealt. Hence as long as he assumed qualitative identity between cause and effect, and apparently he had to do this in order to maintain the conservation of energy, he could not sustain the transient and phenomenal nature of consciousness.

The philosophical spiritualist, however, instead of applying the doctrine of the conservation of energy, in so far as it is conceived as implying an identity between cause and effect, as an *ad hominem* argument against materialism, resorted to a denial of the causal nexus between the physical and mental. He virtually admitted that, if the causal connection, assumed in at least one interpretation of the conservation of energy, be rightly conceived, the materialistic theory would be supported. But instead of showing a *reductio ad absurdum* of the materialist at this point, that is, a conclusion the opposite of what the materialist intended, the philosophic spiritualist thought

to redeem his position by denying that conception of their causal relation, and set up the doctrine of Parallelism, which means that physical phenomena cannot be transformed into mental, that one cannot produce the other causally, as mechanical causation is conceived. He thought by this device to save the soul. He thought that, if consciousness were not conceived as transformed or transmitted motion, it must have another subject or basis than the physical organism. But I must contend that this is a vain hope. I see no reason to assume that only one kind of function can characterize a subject. I do not see why any number of functions not convertible into each other might not subsist side by side in the same organism and perish with it. Hence it seems to me that the resort to parallelism only lands us in a *cul-de-sac*, a blind alley. Like all philosophic arguments, it depends on assumptions which facts have not yet been proved.

If the parallelist expects to prove the existence of a soul or something other than the bodily organism to explain consciousness by denying the application of the conservation of energy to the relation between physical and mental phenomena, he does so on the assumption that all physical phenomena are reducible to modes of motion and that consciousness is not a mode of motion. But this position will not help him any in the one fundamental question of evidence. For, though consciousness may not be a mode of motion, the fact that we observe constantly in our experience that attributes and functions, not convertible into each other, inhere in the same subject,

is proof that, in spite of their inconvertibility, they are related to their subject in the same way and have their destiny conditioned by this fact. Hence the only conclusive proof that another subject for consciousness than the organism is necessary will be the actual separation of the soul and its individual consciousness from the body. If this can be effected and communication with it established, we can have reasons to believe that consciousness is not a function of the body, but a function of some other subject or reality, whatever we may choose to call it. It may be true that consciousness and motion, or mental and physical phenomena, are not interconvertible. Whether they are or are not I do not care, as I think an interpretation of the conservation of energy is possible, which will make it either irrelevant to the problem or perfectly consistent with survival after death. The doctrine is not yet so clear in its philosophic conceptions as is necessary to make it pertinent to the issue, and hence certain assumptions about it have to be made in order to secure even the appearance of relevancy. The main assumption made is that cause and effect are identical in kind, which may not always or ever be the fact at all. The truer conception of the relation between them, and so between the members in a series of physical phenomena, is that they are identical in *quantity*, not necessarily *qualitatively* identical. That is all that physics claims when it is careful of its statements, though one would like to know what we mean by quantitative sameness without some qualitative sameness. How can we meas-

ure quantity without some qualitative identity for the standard?

I shall not thresh out this question, as it is not necessary: for I think that there is a great deal of illusion about the conservation of energy. In the one sense in which it defines the facts of physical science and mechanics it is wholly irrelevant to the problem before us, as the problems of science and philosophy are not all of them reducible to the idea of equivalents mechanical or otherwise. The confusion is caused by the equivocal import of the conception that cause and effect are equal. Equality implies some sort of identity in kind, though it may not be essential, as in mathematical concepts. For instance, I can measure a certain equivalence between potatoes and books, say in pounds or in money value. But I cannot do this in terms of inches. It is the same in the relation between cause and effect. They are not always or in all characteristics identical in kind. Hence the conservation of energy is irrelevant to the issue affecting the existence of a subject other than the brain to account for consciousness, and it is only the illusion created by the manner of expressing its character that produces the appearance of a relation to the problem.

The whole confusion is due to three totally different uses of the term cause. (1) It is used to denote the action of one thing on another without regard to the question whether there is transmission of motion or energy in the act. (2) It is used to explain the identity of the quantity of energy transmitted in mechanical operations, where the effect concerned is

some mode of motion. (3) It is used to denote the acts of a subject exercising its own functions or activities. In this last conception there is no implication of conservation whatever, and yet it is one of the most widely applied ideas of causality. The conservation of energy can be applied only in the second conception of the term, and it can be applied there only under limitations which do not exclude the operation of other uses of it to the associated phenomena in the same connection.

We should also note another fact of interest. No one cares a penny for the proved inconvertibility of physical and mental phenomena, unless the fact should justify the belief that consciousness survived the body. We do not care the least whether there be a soul or not, unless this consequence is guaranteed by it. It would completely satisfy our scientific and philosophic curiosity if we should prove that the brain was the subject or cause of consciousness; and if we should prove that there was a soul inhabiting the organism we should not care particularly for this fact unless it implied its survival after death. The whole point of the controversy through the ages has been this one interest. It may be a wrong interest. With that I am not concerned at present. All that I wish to enforce is that this is the issue and that it is not to be evaded, whether we regard it as a legitimate issue or not. We should say either that we do not care anything about survival and that this is not involved in the problem, or that we intend to face this issue and solve it affirmatively or negatively, if the facts enable us to do so. In all history that

has been the issue, and there is no excuse for the pretence of another subject than the brain to explain consciousness, unless we mean to attempt the solution of that question by our method.

But when it comes to this issue, rightly conceived it can be determined only by science and the investigation of those facts which purport to represent the isolation of the soul from the bodily organism. Discussions about the conservation of energy and parallelism will never decide it, because they do not involve the facts which are necessary for proof of an assured kind. They may be very good dialectics and useful for clearing up our ideas on various matters, but they are not at all crucial in the settlement of fundamental issues. The materialistic position is invulnerable as long as we ignore the facts which purport to isolate the individual soul and consciousness and rely for investigation upon those phenomena which involve the coincidence between consciousness and a living organism. The latter facts are wholly in favor of the association of mind and body, and no facts can disturb that conviction except they prove the possible isolation of personality. The whole interest of the question regarding the relation between mind and body, in philosophy and religion, of course, is whether the soul is anything but a function of the body, and if it is not this, its survival falls under the law of substance. But the proof of this must be those facts which prove its continuity, and no others will do this but such as are conceived to represent it in psychic research. It is not my purpose to take up the consideration of the issue on its merits. I am

concerned in this statement only with the method for its solution, not the application of it. All that I am here indicating is the nature of the problem and the way it has to be solved, as well as the futility of some arguments claiming to deal with it effectively. In parallelism and discussions of the conservation of energy we conceal the issue by supposing that the historical problem was the relation between physical and mental phenomena within the organism, namely, whether they were convertible or not. But the fact is that the whole question of the causal relation between the physical and mental originated in the conception that is represented in the third meaning of causality above indicated, and was whether the organism was the sole basis for consciousness. It was only a shifting and evasion of the issue to raise the question whether the physical and mental series in the organism were interpretable in terms of the conservation of energy. That might or might not be true without affecting the issue with which philosophy and religion had all along been concerned.

We come next to the practical problem suggested by the phrase "Mind and Body." This, too, concerns the causal relation between mental and physical phenomena, but not with reference to the solution of philosophical and religious issues. It concerns the question whether the mind can influence physical conditions to the extent of healing disease and regulating the nature and habits of organic actions within the organism.

In the great philosophic controversy the question of their causal relation was construed so as to con-

sider but one side of it, namely, that of the dependence of mental phenomena upon the action of the body, making the body the prior or first condition of the existence of mental phenomena. The materialistic theory started with the view that matter is the first fact in existence, even an eternal fact, and so it conceived consciousness as secondary, and in the experience of human life the body seemed to so condition the occurrence of consciousness that no other subject of it appeared necessary. The settlement of this problem did not require either party to discuss the question whether consciousness was the first fact in the world and matter afterward. That was the problem of theism, and even when this was proved there still remained the question whether human consciousness was prior to the human organism, and if it were not, nothing but faith in the character of divine intelligence and justice would guarantee a belief in survival. And even in the theistic position the dependence of consciousness upon the body was so apparent, at least in respect of its manifestations, that no determination of the problem of a future life would rest on assuming a causal influence of the mind on the body. Hence the philosophic discussion turned about the relation only in one direction. The practical problem assumes the issue to be regarding the causal agency of the mind on the body rather than the causal agency of the body on the mind, this latter being admitted.

In taking up the practical question whether the mind can affect the body and its functions I do not assume any conception of causality but the most

general one. This is the simple broad conception of one thing or event determining the action of another object or the occurrence of another event. It does not matter whether one event or phenomenon is transformed into another. The point in this general conception is only whether one object or event can in any way affect another and determine its behavior. This we take for granted in physical phenomena, and now the question is whether the mind can influence bodily action in any such way as one physical fact influences another, and if so, what the limits of such action are.

Neither the affirmation nor the denial of such a causal nexus affects the materialistic theory. The simple reason for this exclusion of metaphysical problems from the issue is the fact that in physical science the series of phenomena, all physical, is composed of phenomena that are alternately cause and effect, according to the relation in which they are seen. Thus if I strike a billiard-ball, I impart a certain amount of motion to it. The cause in this case may be the instrument with which I strike it. This imparted motion is again transmitted to the next ball struck by the first one, and so on through any number in the series. The motion of the first ball is the effect of the impact with the cue and the cause of the motion in the second ball, and so on with succeeding balls. In general, what is an effect in the first ball becomes a cause in relation to the second, and what is an effect in the second becomes a cause in relation to the third. Cause and effect,

therefore, are relative terms in dealing with a series of connected phenomena.

If then we assume that bodily action can give rise to consciousness and consciousness is followed by certain physical phenomena, it will only be a question of evidence and of uniformity to prove to us that consciousness can be a cause as well as an effect. The materialist may, therefore, admit that consciousness may act as a cause without supposing that it is the *first* cause in the occurrence of bodily phenomena. We find thus that no metaphysical issue is involved in this form of conceiving the problem. It is merely whether consciousness can be treated as a cause. The doctrine of parallelism denies that it can. But then this doctrine is concerned with the theory of "mechanical" causation, which treats it from the point of view of convertibility of cause and effect, or the transmission of energy from subject to subject. But we are not here dealing with that conception of causality. If we may indulge the use of a technical term, it is efficient causality that we are here conceiving, and this means merely the power to induce the occurrence of a fact other in kind than the antecedent one with which we start. So we might affirm the existence of an efficient causal nexus between mind and body without admitting transmissive causes. Hence the parallelistic position is irrelevant to the matter here considered. Consequently the present problem is not whether consciousness can be converted into physical phenomena, but whether it can in any way affect their course and modify the "natural" movement of physical agencies.

With this view of causal relation I think the question is capable of very easy solution. The evidence that mind can affect body, that consciousness can produce physical effects in or out of the body, is so clear that the denial of it in this broad sense is equivalent to ignorance. The first determinative evidence of such an influence is the act of will or volition. We can deliberately move our limbs in any way we please. It matters not if consciousness was first the result of cerebral and therefore of physical action. You may take any view of that which you please. The point here is that this state of mind, involving the idea of an end and an emotional impulse to attain it, in its order produces certain physical phenomena, and these of a vast variety, though they may all be of one type. Indirectly it may give rise to external physical events which would not have occurred but for the interposition of the will in the series of events.

Again, a sensation or a pain in any part of the organism is known to produce an effect on the arteries and the circulation of the blood to that particular region. The arteries will enlarge and admit a more copious flow of blood to the specific locality affected. We know what effect fright may have on the action of the heart, or often upon the muscles, causing trembling or rigidity as the case may be. Sometimes fright may cause a very large suspense of the normal physiological conditions and induce catalepsy or other physical disturbances. Strong emotions may affect the digestion, the action of the liver, or the kidneys, and other functional organs. Excitement may increase the flow of blood to the brain. In a

thousand ways consciousness influences bodily conditions, and the only question is what its limits are.

I may refer to the work of Dr. Hack Tuke on this specific subject, a work whose importance will not be questioned by any in the medical profession. It is composed of instances and reflections on the influence of the mind on the body, and was written and published in 1872. It is far enough away from the interests and prejudices of this age on similar phenomena to be free from suspicion of personal passion, and is a good inductive collection of facts bearing upon the matter under consideration. Some of the incidents probably needed more careful investigation as to their nature or credibility, but most of them have such authorities in their support as to make the fact of mental influence on the bodily organism certain, while less accredited facts will appear as possible whether proved or not. Many of Dr. Tuke's instances represent morbid conditions, but this will not make any difference to the general fact of mental influence on the body, though for certain purposes we have to keep the two types of influence distinct from each other. I have referred above to what must be universally recognized as representing the claim of causal action of mind on the body, as a fact which has to be admitted on any theory of the relation between the two.

The following incident is taken from Tuke's collection. "Dr. Kellog records, in the *American Journal of Insanity*, the case of a friend of his who informed him that he had frequently sailed when young in a steamboat across an arm of the sea which

was rough, and in consequence often suffered from seasickness. Upon this boat was an old blind fiddler, who did his best to alleviate the sufferings of the passengers with his violin. The result was that this instrument became associated in his mind with seasickness, and for years he could never hear it without experiencing sensations of nausea or a sort of *mal de mer.*"

I might interrupt instances from Dr. Tuke by an experience of my own when a child. Some occasion arose when it was necessary to give me an emetic, and I was told that I must take it. I showed the natural resistance of a child against taking medicine, and feared that it would be very nasty and disagreeable. I took it, however, and was surprised to find it sweet and agreeable. I remarked that I could drink that kind of medicine. But after its effect had been once produced, for years I could not think of it even without intense nausea. It is a common experience to feel repugnance to some food or other objects to be taken into the system and to be affected by the thought of them when we think of them, but not to feel any effects when they are taken without knowledge.

" Gratiolet relates of himself that when a child his sight became affected, and he was obliged to wear spectacles. The pressure which their weight exerted upon the nose was so insupportable that he was obliged to discontinue their use. Writing twenty years after, he says that he never sees any one wearing spectacles, without instantly experiencing very

disagreeably the sensation which had so much disturbed him as a boy."

The famous story of the incident in Parliament during the reign of Charles I is worth retelling. A report was made to the House of Commons of a plot to blow up the members. "During its reading, some stood up alarmed, including 'two very corpulent members,' whose weight broke a board in the gallery, which gave so great a crack, that some thought there was a plot indeed, and Sir John Ray cried out that he *smelt* gunpowder. The result was a panic in the House and throughout London, followed by an armed band marching to Westminster to defend the House from this imaginary gunpowder plot."

Dr. Tuke narrates an incident of the war between France and Prussia in 1870. "A lady informs me," he says, "that at Tours many lost their health, and some died from fright. A young lady was standing with her father at the window when the Prussian soldiers came down the tranchee, and was seized with shivering; her father, who could feel her trembling, said — 'You need not be frightened, they will not hurt you;' but she received a shock from which she became quite blanched, and lost her sleep and flesh. She has not yet fully recovered her strength, and remarks that she has never been able to keep her feet warm since that day."

Quoting another physician the same author adds: "A captain of a British ship of war, says Dr. Rush, who had been confined for several weeks to his cabin by a severe fit of gout in his feet, was suddenly cured by hearing the cry of 'Fire!' on board his

ship. This fact was communicated to me (Dr. Rush) by the gentleman who was witness of it."

Braid reports an interesting case which has its humorous features as well as its scientific. "Two captains of merchant vessels arrived in port at the same time, and both went to take up their quarters in their usual lodgings. They were informed by the landlady of the house, however, that she was very sorry that she could not accommodate them on that occasion, as the only bedroom which she could have appropriated for their use was occupied by the corpse of a gentleman just deceased. Being most anxious to remain in their accustomed lodgings, almost on any terms, rather than go elsewhere, they offered to sleep in the room wherein the dead body was laid out. To his the landlady readily gave her assent, considering it better, so far as *she* was concerned, to have three such customers in her room than only one, and he a dead one. Having repaired to bed, one of the gentlemen, who was a very great wag, began a conversation with the other by asking him whether he had ever before slept in a room with a corpse in it, to which he replied, 'No.' 'Then,' said the other, 'are you aware of the remarkable circumstance that always, in such cases, after midnight, the room gets filled with canaries which fly about and sing in the most beautiful manner?' His companion expressed his surprise at this. But no sooner said than realized; for, the candle having been put out, presently there was a burst of music, as if the room really was full of canaries, which were not only *heard,* but at length the horrified novice

in the chamber of death avowed that he both *saw* and *felt* the birds flying in all directions and plunging against him. In a short time he became so excited, that, without taking time to do his toilet, he rushed down-stairs in his night-dress, assuring the astonished household of the fact and insisting that the room really was *quite full of birds*, as he could testify from the evidence of his senses, for he had not only *heard* them, but also *seen* and *felt* them *flapping their wings against him.* The captain had some excuse for saying he *heard* them, although not for seeing or feeling them, for his companion had really imitated the note of the canary by blowing through a reed dipped in water."

A practical joke was here the initial suggestion, and it distributed its influence to other, the tactual and visual brain-centres, and emerged as actual sensations. "When potassium was discovered by Davy, Dr. Pearson, taking up a globule, estimated its weight on his finger, and exclaimed, 'Bless me, how heavy it is!' simply from expecting a metal to be so, whereas the reverse was the real truth," potassium having a specific gravity less than water, and therefore capable of floating in it.

These few illustrations suffice to indicate a causal influence of mental upon bodily states, and if any issue against materialism were involved they would be sufficient, with such frequent instances as psychiatry has recorded, to disprove that theory. But, as I have already remarked, materialistic theories need not deny the causal nexus between mental and physical phenomena. What the primary cause of

mental states is may be one question, but the question whether the mental, once existent as effects, may not in turn act as causes is another question. Hence no metaphysical issues are involved in the matter. But the practical question is involved. If the mind can influence the body we may suspect that the possibility might be utilized to effect certain desirable results, and whether these could be effected or not will be purely a matter of observation and experiment. But any claim that such practical results are possible will depend for its acceptance upon the assumed or established fact that there is a causal nexus of the kind under consideration.

The materialistic theory, although it was consistent with the admission of this causal nexus, so emphasized the dependence of consciousness upon physical conditions and causes that it tended to lose sight of the obverse causal fact, and the assertion of the influence of mind on body was skeptically received at first. But this was probably because of the extensive character claimed for that influence rather than the fact of it. No doubt the proof of it would consist in certain striking facts, and these would be subject to skeptical scrutiny in proportion to the extent of the claims asserted for the influence of the mind. Hence in here asserting that the influence exists as a fact I have appealed first to the most general normal facts and chosen some more or less crucial instances in the abnormal. They establish the general fact of causal agency in consciousness or subconscious states upon the organism, and it re-

mains to determine how much this causal agency can do and what it cannot do.

I shall not enter into any discussion of the limitations of this causal influence, as it would require a volume to do this apart from mere assertion. My chief object here has been to show that the influence has to be admitted as a fact in order that we may be just to the many claims made for its presence in certain more remarkable instances. Suggestive therapeutics and "Christian Science," as well as "metaphysical healing" and "faith cures," all rely upon the assumption of such an agency, and the easiest way to refute their claims would be to wholly deny the causal action of the mind on the body. But this cannot be done in any absolute manner. It only injures one's power to limit the claims of these more striking phenomena to take the radically opposite position. We shall have to learn to determine the limitations of mental action on the body rather than to deny it, and it is well to come to the study of the facts with some conception of the concealed truth lying at the basis of the apparently more miraculous phenomena.

The whole subject needs to be put under thorough scientific investigation. Dr. Tuke's work was pioneer, and, as I have hinted already, many of the incidents upon which he relies to illustrate or prove the influence of mind on body needed more careful examination for determining exactly what the facts were. The evidential aspect of the phenomena seems not to have been as carefully examined as we might insist upon to-day. Hence in his work we have to dis-

criminate instances whose value comes from the authorities capable of reporting them justly and instances which belong to ages and people whose judgment regarding the facts may not be so good as is desirable. To ascertain exactly the limits of this influence will require a most patient and exacting investigation. That it exists may easily be determined, but its nature and extent are another matter. The use to which it can be put when determined scientifically may be important, but cannot be known rightly until its limitations are known.

In physiology a long history of experiment and observation has shown us certain very definite relations between physical and mental conditions. For instance, in the most general fact of experience, take sensation. Here the sensation is the uniform effect of a stimulus of a determinate character, light producing color, vibrations of a certain type producing sound, etc. In the abnormal, the presence of certain bacteria produce typhoid fever, of certain other bacteria scarlet fever, of still others tuberculosis. The presence of congestion in the brain produces certain mental aberrations, a lesion at some point brings about aphasia, another type of lesion produces epilepsy, etc. We have learned in these and in all diseases to determine their presence by the presence of certain uniform physical symptoms, and when they are found the diagnosis is tolerably certain. The criteria of disease have thus become quite definite and clearly known. But the causal influence of the mental on the physical has not been so clearly and definitely formulated into laws. The whole subject

is in its infancy. It may be that we can never so definitely determine what specific physical effect may accompany a given antecedent mental fact. But if it is determinable at all, it can be so only after the most painstaking and prolonged investigation that we can imagine. Physiology has been long in coming to its present definite knowledge, and it may take psychological investigation much longer to obtain half the definiteness of the knowledge regarding the physical agencies acting on the mind. But the fact that mental states do actually affect the body, and the fact that certain of them affect it in a certain way or certain parts of the organism, suggest that time may enable us to organize our knowledge of the phenomena in a way to use the results for diagnosis quite as effectively, though not any more infallibly, than we can now use physiological knowledge. The practical field in which such knowledge could be applied would be suggestive therapeutics. This comes up for consideration in the next chapter, and is mentioned here only to indicate the relation of general principles herein involved to hypnotic and normal suggestion. But the efficiency of our knowledge will depend upon the extent of it in regard to the causal influence of mental on bodily states.

There is one other field of interest closely allied to the one just discussed. It is the causal action of one mental state on another. Whether this is a fact remains to be determined. There are some indications of its existence, but I shall not assert it as unequivocally true. If it be true, it is a most important fact. We have the admitted truth of the

influence of the physical on the mental, of the physical on the physical, and of the mental on the physical in our nature. It remains to complete this knowledge by that of the mental on the mental, if it be a fact. The problem is not the subject of this chapter, but it is associated with the issues we have been discussing and will appear more prominently in the discussion of suggestive therapeutics.

CHAPTER XI

HYPNOTISM AND THERAPEUTICS

The previous chapter illustrated the influence of normal mental actions on the body in general and without going into specific cases where it was striking or remarkable. We come in the subject of hypnotic and therapeutic phenomena to the facts of unconscious influence of mind on the body. The chapter on secondary personality established the fact of unconscious mental action, and we have now to examine its parallel influence upon physical conditions, showing that it can produce such effects as well as simulate the existence of independent personality. It should be remarked, however, that the causal action of consciousness on the physical organism is in no case voluntary and intentional, except in the phenomena of purposive volition, and this action limits its influence to muscular or motor phenomena. Even this involves processes of which we know nothing directly, and the only thing that we do know is the fact that the mind's fiat is so directly obeyed that we at least appear to be consciously and directly effective in action on the body. But in the other instances of causal influence the mind does not consciously and purposely produce the effect ob-

served. It is the result of reflex functions. It is thus in a measure unconscious, though the effect is the consequence of a state of normal consciousness. This fact exhibits the bridge between the action of primary and of secondary mental phenomena upon the body. It illustrates also the facts which suggest the limitations of such influence.

I shall not go into the history of hypnotism, as that is an old subject and not of importance at present. I have time only for considerations of practical importance, and the most urgent one of these is the total misunderstanding which the general public has about the nature of hypnotism and its influence. It cherishes a perfectly inexcusable illusion regarding that influence. This is because the scientific man did not at once investigate the phenomena and control the public judgment about it as science has done in physical phenomena, such as electricity, magnetism, meteors, and similar facts. The conception of the public has not gotten beyond the ideas of Mesmer and unscientific men of that time. Mesmer was wholly unscientific, and did not investigate his phenomena with the view of understanding them rationally. He no doubt did some effective practical work with hypnotism, but he undertook to explain his facts by magical and miraculous agencies. The assumption of a fluid passing from the operator to the subject or patient was, at least at that time, nothing more or less than something " supernatural," though it was not supposedly personal in its nature. The theories of Odylic force originated from this conception of the phenomena. There may ultimately

be discovered some reason to suppose that fluidic agencies are associated with the phenomena, but I see no reason as yet to believe it, and I make the concession here only to divest myself of bigotry in the interpretation of the facts, as we know so little about them. Whether a fluidic theory of interpreting the facts be true or not, the use made of it in the early history of the subject was such as to alienate scientific minds and to create the conception of magic in regard to its phenomena, and that conception of them has not been sufficiently eradicated as yet.

It was the influence of Braid, of Manchester, which modified the views of scientific men regarding hypnotic phenomena. After the French Academy of Science had repudiated the facts and refused to investigate the claims of the mesmerists, Braid took them up and showed that hypnosis was not due to any necessary transmission of force or fluid from the operator to the subject, but to "suggestion," which has come to be the descriptive term for indicating the source of the phenomena. It removed the idea that the cause was external to the patient, and placed it in the patient's own mind. Consequently, owing to analogies of the phenomenon with sleep, he abandoned the term Mesmerism, which was saturated with the associations of fluidic agencies and magical influences, and adopted the term *hypnosis*, from a Greek word meaning *sleep*, to denominate the nature of the phenomenon. Among scientific men that conception of the fact has prevailed ever since, though it has not wholly explained the phenomena.

The popular conception of the phenomena is not

hard to understand. The superficial appearance of them is certainly disturbing to the habits and conceptions of normal science, especially in the field of therapeutics. To see a few passes made over a man's face, followed by an apparently passive obedience to every hint made to him, is not what we observe in the normal man. With the normal person we require either to persuade or force him when we want him to act. Persuasion may be accompanied by a certain amount of resistance, as force implies a large amount of it. The rational man does not obey suggestions passively. He reflects on them and decides for himself their reasonableness, and obeys or resists according to his judgment of their rationality. But the hypnotic subject obeys without reflection or without thinking of the rationality of the suggestion, or he even acts against it. He seems to be as clay in the hands of the operator. He apparently has no mind or will of his own, but acts like a machine directed by a mechanical force. The impression, therefore, is natural that anything whatever can be done with the subject by the operator, and if the performances of public hypnotists be taken as the standard, this view would be apparently correct. The fact is, however, that public exhibitions are too often mere pretences and frauds. There is never any assurance that hypnotism is practised by such people at all. They have trained subjects whom they often do not hypnotize at all, and no conception of the phenomena should ever be formed from such performances. Yet even in instances where the phenomena are genuine they are as much or more striking than

public illustrations often dare be, and give the natural impression that the hypnotized subject is under the absolute domination of the operator. The absurd actions, like making faces at a person, crawling on the floor, fishing in an empty tub, repeating absurd phrases to a door, etc., are apparent indications of passive subjection to outside influences.

Still more puzzling are cures of various maladies or the production of physiological effects by suggestion. The cure of headaches, of pains, the production of insensibility, of ecstatic mental states, etc., look so much like magic that it is no wonder that the popular imagination regards the phenomena as miraculous. In ordinary medical practice the rules affecting it are based upon a long observation of coincidence and sequence in the phenomena of therapeutics. At first we knew no more about the causal influence of calomel, of quinine, of arsenic, of strychnine, of magnesia, etc., than we know of suggestion. But in the course of long observation we have come to know and expect certain invariable consequences following on their use. It is the same with the relation between all other elements of the materia medica or pharmaceutic products. We have become so familiar with their causal agency that we do not wonder at them, though we may have done so at first, and besides they represent the influence of physical causes, with which we are more familiar than with the mental. We know what to expect of them. But hypnotic suggestion appears to us in our ordinary experience of causal agency as nothing less than thaumaturgic or magical. No wonder it was and

often is classified with the "black art." To pass one's hands a few moments over a man's face, and then remove a severe pain or cure an apparently dangerous disease by simply saying to him that he will wake up without the pain or will recover in a few days from his illness without further attention is to do apparent violence to every familiar principle of causation. We are not accustomed in ordinary normal life to have such marvellous consequences follow a word. We have to resort to more strenuous methods to accomplish our results. Hence, when we can remove pains and cure diseases, or make a subject perform unusual acts by a mere word to him, we seem to be reproducing the phenomena which appeared to be miraculous in the earlier history of men. There seems to be no limit to such agencies when they are viewed by the common observer, and hence hypnotism stands for something apparently supernatural, and, measured in terms of the ordinary conceptions of causal relations, this judgment has its excusable characteristics.

But in spite of superficial appearances this conviction of magical powers in the use of hypnosis is an illusion. No less so is the belief that the agency is wholly from without. It is not any thaumaturgic and miracle-working genius that effects the result, but mainly, if not wholly, the action of the subject's own mind. He cannot be hypnotized without his own consent. After long practice in submission to hypnosis it may appear that the subject's consent is not necessary, but in no other circumstances does it seem possible. All the cases reported of involun-

tary hypnotizing within my knowledge are explicable by silent suggestion in which a look indicates what the operator has in mind and no verbal statement is made or passes introduced. At first the consent of the patient has to be obtained to effect any result whatever, and as the susceptibility to suggestion increases it may be easier to effect hypnosis; many instances of it may occur in which the superficial evidence is for hypnosis without consent. The consent, however, need not be formal and voluntary. It may be the simple result of the consciousness that the operator is thinking of this result. Many cases of such attempted effects show effective resistance to the "influences," and, taken on the whole, in all but the alleged telepathic instances of producing hypnosis — and these are very rare — the evidence is slight for any external agency whatever for the production of hypnosis, at least of a magical type. The rather crucial experiment of Braid in this matter is worth quoting.

A hypnotizer had claimed that he could induce mesmeric sleep in his subject without her knowledge or consent. Braid doubted it, and brought the man to his house and afterwards brought the subject, who had no knowledge of the man's presence. She sat within a few feet of him in another room, the door between them being slightly open. The mesmerist worked for some three-quarters of an hour to induce hypnosis, but he failed. As soon as the subject learned that he was present and trying to hypnotize her, that is, as soon as she became conscious of the man's presence and efforts, she at once went

into the mesmeric sleep, proving that her own mind was the chief instrument in the result. The well-reported telepathic instance of Pierre Janet seems to be an exception to this view, and I shall not deny that exceptions may exist. I am not concerned for the absolute universality of the inability to hypnotize without consent, but with the rule in all normal cases. The instances that seem to be exceptions are so only by virtue of the fact that the stage of their development, which illustrates this effect without apparent consent, follows on a long experience with suggestion attended at first with consent, and so they may be brought under the rule, and the case possibly made universal.

When the patient's consent is so necessary to the result it is apparent that all the magic supposable in the phenomena is in the subject himself and not in the agent or operator. This latter person may be an important factor in the majority of cases, but that he is not absolutely necessary is sufficiently proved by the simple facts of somnambulism, which is one form of hypnosis, and of auto-hypnosis, which is perhaps a form of spontaneous somnambulism, if I may thus interchange terms, though less frequent than what ordinarily is called somnambulism. These facts, which are wholly phenomena of the subject without external influence of the hypnotic kind, evince beyond question the fact that the hypnotic state is not a magical effect from without, no matter how important the intervention of an operator may be for multiplying illustrations of it.

I have dwelt upon this fact that the operator does

not have the magical power popularly ascribed to him that I may remove the fear of hypnosis as a subject of investigation and therapeutic agency. The absurd fear of it is due to this false assumption of its nature and of the power of the person who induces it. It is true enough, nevertheless, that it involves influences which can be abused. That I do not question. But it is not because of any magic or thaumaturgy about it. This may be a reason for refusing consent to its application in certain cases, but it is not indicative of any power superior to the subject's will and capable of subjecting the individual to complete dominion. The use of it ought no doubt to be restricted to scientific and medical purposes, but this liability to misuse hypnosis on the part of some who practise it is not an evidence of dangerous power, but only of one which should be used like all others whose misuse is subject to danger. Eradicate the idea that the power is magical and there will arise a method of limiting the abuses to which the practice of it is exposed.

Another illusion of the popular mind which is closely allied to the one just explained, and is perhaps only another form of conceiving it, is the idea that hypnosis is any influence of one person over another in which the person influenced appears as a passive servant of the other. I often find the assertion, when speaking of any person who has apparently been under the influence of another's mind, that "he was hypnotized." This way of thinking and speaking shows no conception of what the psychologist and scientist mean by hypnosis. The exter-

nal appearances of hypnotic phenomena no doubt suggest that of domination and the influence of one will over another. But the normal influence of one mind upon another is one of intelligent suggestion and persuasion, in which the mind influenced is as much a factor in the result as the other, and in fact is more the primary factor, as the adoption and execution of the suggestion is a free act. In true hypnotic phenomena this freedom is less apparent, if present at all, because the process is subconscious. But the influence in normal life of one mind upon another is not of the nature of hypnosis in any proper sense of the term. Nothing automatic is involved, and nothing subconscious that is not also subconscious in all the spontaneous acts of the subject. Hence it is an entire illusion to suppose that the ordinary and normal influence of one mind upon another is hypnotic and *vice versa*. We may ultimately trace connections between them, but the distinction is clear to those who examine the facts with any care. One might add also, that if they were the same there would be no excuse for fearing hypnosis, as the normal influence of one person upon another is not only unavoidable, but is also necessary for civilization itself. But the slightest examination of the phenomena will show that hypnotism is a wholly different fact from the normal communication of ideas and influence upon other minds, though both may finally be shown to contain common elements. Thus far I have tried to show what hypnosis is not. We have now to attempt the examination of what it is. The simplest conception of it is

that it is artificially induced sleep. Of course, spontaneous or auto-hypnosis and somnambulism are not externally and artifically induced, but they represent the same subjective mental state, as is proved by their suggestibility. But for the sake of making clear what the majority of instances are, it is well to associate the condition with the method of producing it, and as this method is some artificial process, which is precisely the phenomenon that suggests its magical character, it serves well to define, if not the condition, certainly the circumstances associated with the phenomena. The subjective state is so like somnambulic sleep, though possibly not identical with normal sleep in many of its aspects, that the public can best understand its nature by that comparison, and regard it as less anomalous and less to be feared than is customary.

But the scientific man wants a more technical definition of it, even though he recognizes that it is an artificially induced sleep. With him it must be defined by what it is as a mental condition and not by any of its accidents or associated causes. To the scientific man it is a condition still allied to sleep, but it has characteristics which distinguish it, generally at least, from normal sleep. These vary much with individuals. In some the condition can hardly be distinguished at all from such sleep. In others there seems to be no resemblance but the suspense of normal consciousness. But in all cases perhaps the fundamental characteristic that distinguishes it from sleep is the excessive liability to suggestion. This is the tendency to respond more or less auto-

matically to suggestion, or to ideas indicated to the subject. An automatic condition of the organism so often prevails that this fact is one which may well serve, if not always it may generally, for a criterion of what the condition is. Just what this automatic state is it is difficult to define accurately, but it represents in general the functions of reflex action, namely, response to stimuli without regard to the rational adjustment to the real circumstances under which the subject is placed. The suspense of normal sensory processes gives rise to this condition, which is regulated and held in check by normal life. Once suspended, however, the inner mental habits are maladjusted. This, however, is not as clear an account of the condition as is desirable. We might call it a state of automatism but for the fact that this has to be defined and is often used so equivocally that a whole chapter might be devoted to it. It is certain that special inhibitions are cut off in the hypnotic state, though the statement of this fact does not clarify the matter for the layman. We may, however, indicate that our normal mental states are a system of coördinated functions acting in harmony. That is, a large system of different functions are so adjusted that they act in unison with reference to the same end, which is adjustment to our normal environment. But in hypnosis we are cut off from the exercise of some of these functions, or as psychiatrists would say, certain functions become dissociated from those with which they are coördinated in the normal life, and we act according to the impulses of those which remain effective.

Hence the appearance of automatism or mechanical actions not representing the natural or rational adjustment of the person to the present situation.

But I shall not enter into any technical explanation of hypnosis, as that belongs to more scientific treatises and it is not necessary for the purposes of this work. It should be said also that we really know very little about the phenomenon. Many are the theories which pretend to explain what it is, but students of it have got little farther than to ascertain various adjuncts, physiological and psychological, of its occurrence. But exactly what it is as a mental condition is not known beyond its real or apparent alliances. It will have to be investigated much more than it has been before it is perfectly understood, and we may never know as much about it as we do about the normal conditions of the mind.

The fundamental difficulty connected with it is this. We know directly only what is accessible to the introspection or observation of our normal consciousness. We do not know directly what goes on in the minds of others. This we have to infer from their actions, a fact explained in the previous chapter. Now in most of the forms of hypnosis we are not normally conscious of ourselves or of what we are doing, and so our own condition is subject to introspection. The condition of others, as remarked, has to be inferred and is not directly known. But we have ultimately in all our investigations to interpret and understand things in terms of our own conscious knowledge, that is, the introspective results of our own experience and reflection. As we cannot

introspect our own hypnotic states and have to infer those of others, we have no terms in which to represent them intelligibly to our own personal knowledge. The consequence is that we can say nothing about hypnosis except what is indicated in its alliances and associations or its effects resembling states that are known. This makes the investigation of it an exceedingly difficult task and one that must be extended over a long period of time. If it had not utilities associated with it we might well ignore its investigation, but it has already demonstrated its importance both speculatively and practically, and we can hardly escape the obligation to give it scientific attention, hoping that time and patience may accomplish something of what they have done in other difficult departments of human knowledge. Some of its physiological accompaniments are known, but little has been done to study its psychological character. The investigation of it has been largely in the hands of medical men, who are seldom trained in psychology either of the analytical or experimental type, and hence the temptation is to concentrate attention upon its physiological connections, when it is its psychological character and associations that will probably throw more light upon its nature and meaning than any other facts.

The reason for demanding the most thorough investigation of the phenomena, I think, will be apparent in the practical results of hypnotic therapeutics, to which I wish now to give some attention. The importance of hypnosis as a practical agency is embodied in its utility as a therapeutic possibility.

This is a well-recognized fact, but the public is so deluded in regard to its nature that physicians have not been able either to practise it or to discuss it publicly in the way they might otherwise desire. I mean, therefore, to give a number of illustrations of its efficiency as a curative agency in various forms of disease, at least of a functional nature.

We must remember, however, that the use of hypnosis as a therapeutic does not indicate to us what the real causes are of its influence. All that we know is that, in certain cases, where all other agencies failed, this appears to have been successful. It will require much more investigation and statistical result to justify any assurance in regard to the nature and limits of its efficiency. But sufficient has been established by competent authorities to urge its extension in the field of medicine. The first thing in regard to its claims is that we should have evidence enough that the use of it has actually been effective, directly or indirectly, and I think the indorsement of such men as Moll, Kraft-Ebing, Bernheim, Liebeault, Janet, Wetterstrand, Ochorowics, Tuckey, Bramwell, and hundreds of others suffices to remove from me the duty of any preliminary proof of these claims. I may, therefore, illustrate for the general reader the kind of troubles in which hypnotic suggestion has been efficient in curative processes.

I shall start with instances which involve disturbances not exactly classifiable with insanity, but which either belong to the phenomena of alternating personality or are closely allied to it. The first instance

will be one told me by Dr. Boris Sidis in his practice. I have to narrate it from memory.

It is a case of lost personal identity. Such phenomena are of comparative frequency, though they may not last long. The present case had completely lost all knowledge of his identity, did not know his own name, could not give any hint of his home or whereabouts, and in fact would have been confined in an insane asylum by any other person. Dr. Sidis proceeded in his treatment of the case upon the theory that prevails in hallucinations, as discussed above, namely, that often present states of consciousness in abnormal conditions are due to secondary stimuli. He therefore assumed in this case that he might excite the resurrection of normal memories in the man by using certain stimuli. He therefore asked the man to tell him the first things that came into his mind when he, Dr. Sidis, played on the piano. This was done and notes taken of what the man said. The man did not consciously recognize anything that he said. They appeared to him simply as thoughts aroused by the music. In the course of a number of experiments Dr. Sidis came to the conclusion, from the nature of the statements made under this sort of stimulation, that the man was expressing stray experiences in his normal life, not then recognizable as such, and in one case a name and incident were mentioned that led to inquiry. It referred to the sale of a wagon and horse in a certain town. The inquiry showed that the man had sold such a vehicle and animal in the place. Continuing the investigation in this way, Dr. Sidis found a sufficient number

of incidents, really memories in the man's mind, which he resorted to suggestion under hypnosis to remind him of, to establish the fact that these were his normal experiences, and that he would recall them as such when he awakened. This succeeded, and by associating his new and abnormal experiences in his waking state with these unconsciously recalled memories he succeeded in connecting the abnormal life sufficiently with his latent but unrecognized memories of the past to begin the process of fusing the two memories together; and when once a link of connection was established there was little difficulty in ultimately getting the man to recall much more, and finally his name and normal memories generally. In this manner the man's personal identity was restored, and probably this synthesis of the secondary with the primary personality would make it extremely unlikely that any recurrence of the abnormal condition would repeat itself.

The next instance is also one which has to be described from memory. It is a case of Dr. Pierre Janet's. He found a patient suffering from hallucinations, and suspecting from the nature of them that they might be traceable to some earlier shock, made inquiries to ascertain whether any fright or shock could be remembered. But the patient could recall none such. Bethinking himself of the fact of automatic writing, which had been suggested to him by his acquaintance with Mr. Frederic W. H. Myers, he resolved to see if the patient could do any automatic writing. He soon found that she could, and when suggestion was applied the patient wrote out

an account of a fright which she had had once in her life. But on reading the account herself she could not recall it. Her parents, however, remembered the incident very clearly. Taking this discovery as a clue, Janet unearthed one hallucination after another until he reached the one caused by the shock, and by means of hypnotic suggestion he eradicated this and cured the patient. He had found that the hallucinations with which she was afflicted when the patient came to him would not yield to any suggestion until he had discovered the primary instance of it associated with the original shock. Of course, one of the chief incidents of interest in the case is the method of discovering the cause of the trouble, the unconscious narration of it through automatic writing.

The Hanna case, again by Dr. Sidis, and mentioned briefly under Dissociation, illustrates a similar method of treatment and involves the synthesis of secondary states with resurrected memories which proved to be deposits of normal experience. I can give only a brief account of it. It is reported in detail in Dr. Sidis' work on *Multiple Personality.*

The Rev. Hanna had a fall from a horse which rendered him unconscious. He was taken up for dead, but in about half an hour apparently recovered consciousness. But closer examination discovered that he was not conscious of anything whatever in his past life. He had lost the knowledge of even his own language, to say nothing of the ancient languages which he had studied at college. He was found to have as little knowledge as a new-

born babe. He did not even know what the sense of hunger was, and had to be taught it as a child by feeding him. He recognized no objects whatever, and words had no meaning to him. He gradually acquired new meanings for words as his daily wants and habits suggested them. But in the course of this order of things Dr. Sidis found that he was having two types of dreams, and he was asked, after he had progressed sufficiently in the recovery of language, to tell the nature of these dreams. "They are of two kinds," he said. "One is unlike the other; in the one kind the pictures are weak, and I cannot easily bring them up before my mind clearly; the other kind I can easily see and feel clearly again, as though they were before me. The picture dreams come in the morning; they are not like the other dreams; they are too strong and plain."

"It turned out," says Dr. Sidis, "that the dreams characterized by Mr. Hanna as 'clear picture dreams,' and which we may term as vivid ones, were *really experiences that had occurred in his former life. He, however, did not recognize them as such* and considered them simply as strange dreams of his present life."

Taking this fact of a subconscious and unrecognized connection between Mr. Hanna's abnormal state and his former normal life as his cue, Dr. Sidis proceeded to use suggestion for connecting them consciously, and by various forms of inquiry he ascertained additional instances of resurrected memories in an unconscious way and worked with them to restore the man to his normal state. A part of the

method employed was a novel one. It was to place Mr. Hanna amidst new and exciting scenes for the purpose of creating new curiosity and to help awaken him from the lethargic condition of his secondary state. This was effected by bringing him to New York and taking him to brilliantly lighted restaurants and to the theatres. Gradually with this and hypnotic suggestion, associated with constant reminders that certain incidents of his experience belonged to a past life, the man was completely restored to his normal condition and the two personalities fused together. The story of the man's actions and mental behavior during this secondary state and the novelty of his cure reads like a romance. The most interesting features of it cannot even be summarized here, as they would absorb too much space. They are well worth the reader's curiosity.

It is not hypnotic suggestion or the use of hypnotism that is the most interesting or the most important aspect of these instances. It is the accompanying use of psychological analysis and the application of its principles of association and dissociation that are the significant features of the therapeutics applied. One might even minimize the importance of hypnosis in the cases, if only for emphasizing this novel employment of associative synthesis in the restoration of functional normality. It is, of course, probable that hypnosis was as important a factor in the results as any other agency, but it is apparent that it is not the only agency. It may have had its work limited to the discovery and development of the facts which rendered associative synthesis appli-

cable. But whether so or not — and we are still ignorant of its exact relation to the matter — the important thing to remark is the place of normal and abnormal psychology in the understanding of the real difficulties and their remedy in the use of functional agencies of the mind. There is no reason why this means should not be employed on a large scale. It is probable that many similar instances are languishing in the insane asylums for lack of the knowledge to understand and treat them rightly. Dr. Morton Prince in the investigation and discussion of his remarkable case, summarized in a previous chapter, the case of Miss Beauchamp, remarks that she is one of a type that would have been placed in an asylum and become incurable but for the study and treatment of the trouble from the knowledge of association and dissociation of mental phenomena. The Ansel Bourne case, also discussed previously, is one that would have suffered from the same neglect or maltreatment had it fallen into the hands of physicians who had known him in his normal state. He was thought insane, and naturally enough, by the physician who was called in to examine him after his sudden awakening in Norristown, Pa. He was actually adjudged insane when he returned from his abnormal condition! The fact is that a better knowledge of psychology in matters of subconscious mental action and secondary personality would lead to a better criterion of insanity and save many a victim both the humiliation and the expense of the rude methods which so many of our public institutions apply in the treatment of the insane. I do

not speak here of organic mental disease, but only what is called functional, which often simulates the organic in its symptoms. A more accurate knowledge of psychology would lead to measures and means for distinguishing more carefully between the two types and to separate methods of treatment. Hypnotic suggestion would be only a part of this method. It would probably serve first to aid in the discovery of facts which would lead to correct diagnosis and then act as a supplementary agent in the therapeutics applied; the synthesis of primary and secondary experiences being added to its agency in effecting cures. I have no doubt that many cases confined in asylums might thus receive effective treatment, which become incurable under present methods when psychological analysis is not employed as a useful instrument. Indeed, I may refer to one case of Dr. Sidis in this connection. A lady was brought to him who had been confined in an asylum for two years with what was diagnosed as hemiplegia. He found on examination that her trouble was only amnesia, or defective memory, amounting to secondary personality. He easily cured the case by hypnotic suggestion and his methods, and apparently the cure was permanent.

I shall turn now to some other types of functional troubles. Dr. Bramwell quotes the details of 115 cases, including such troubles as hysteria, neurasthenia, obsessions, alcoholism, and various others, where the therapeutic agency was hypnotic or normal suggestion. I quote one illustration for the sake of its clearness.

"Mlle. ——, aged 23, after an accident at 15, suffered from sickness, headache, constipation, vertigo, spinal neuralgia, muscular weakness, insomnia, nocturnal terrors, etc. Treatment: Drugging, electricity, washing out of the stomach, etc. Result, nil. Hypnotized: recovered. No relapse."

The narrative of hundreds of such cases with varying and more striking details make instructive reading for those who have it in their power to help in the organization of careful inquiry and the enlarging of facilities for the proper application of such methods. To enforce this I may refer to Dr. Bramwell's summary of the 228 cases of neurasthenia which Baron Von Schrenck-Notzing collected, and which were subjected to hypnosis and its therapeutic agency. The first table represents the instances to which hypnosis was applied. The table omits 8 cases from the whole number, 6 of them not having the stage of hypnosis mentioned and 2 having been treated without hypnosis and by normal suggestion.

I. HYPNOTIC

70 cases, 31.8 per cent. slight hypnosis induced.
134 cases, 60.9 per cent. deep hypnosis induced.
16 cases, 7.3 per cent. no hypnosis.

II. THERAPEUTIC

72 cases, 31.6 per cent. recovered.
84 cases, 35.8 per cent. much improved.
72 cases, 31.6 per cent. no improvement.

Therapeutic suggestion had an effect in 68 per cent. of the cases, though less than one-third of the whole number recovered completely.

Of chronic alcoholism Dr. Bramwell reports 76 cases in his own practice, with the following results. I quote his statements.

"*Recoveries.* — Twenty-eight cases recovered: by this I mean that the patients ceased drinking during treatment; and that, so far as I have been able to learn, they have remained total abstainers up to the present date, or to that of the last report received. Although the earliest of these cases has now passed ten years without relapse, I will not describe the patient as 'cured,' for it is possible that the disease may return: one of my patients relapsed after eight years of total abstinence.

"Of the above 28 cases, 17 were males and 11 females. The average age was 40. Average number of hypnotic treatments, 30. Average length of time since recovery, 3 years.

"*Cases improved.* — These numbered 36 — 26 males and 10 females. Average age, 39. Average number of hypnotic treatments, 32. Average length of time since treatment, 3 1-3 years."

There were 12 failures, 10 males and 2 females. A characteristic of them was that they would not cease drinking during the treatment. But 64, or 84 per cent., showed the influence of therapeutic suggestion, while 34 per cent. seem to represent more or less permanent cures.

The application of hypnotic treatment to vicious and degenerate children shows remarkable results. They could be made clear only by lengthy quotation of instances. I shall quote only *one* illustration of it as a sample.

"Miss ——, aged 13, March, 1894. Bad family history. Before the patient was born her mother suffered from melancholia. The child herself had been mentally peculiar from infancy; she was perfectly untruthful, deceitful, insolent, and dirty in her habits. She had been addicted to self-abuse since the age of 7. On several occasions she had stolen money from servants and others — sometimes considerable amounts. She had been expelled from school, and had to be kept at home. She was strong, healthy, and well-grown, with nothing abnormal about the head or palate.

"After consultation with Dr. Savage, the patient was hypnotized three times a week from March to May, 1894; this was followed by marked improvement, and the treatment was repeated at intervals during the next two years. Complete recovery took place, and up to the present date (1903) there has been no relapse."

Another case of striking interest. "Miss ——, aged 22, April, 1895, had suffered from fits of violent passion since early childhood. She was so little able to control herself that her mother often feared she might kill her sister, and she still (1895) often came to blows with her younger brother. She had always been intensely selfish, and could not see why she should do anything for others. She admitted her defects of character without shame, and said she heartily enjoyed quarrelling and setting others by the ears. She consented in the waking state that I should try to alter her character, and I suggested during hypnosis that she should give up

quarrelling, and take a pleasure in helping others. A complete change took place: she became affectionate, good-tempered, and helpful. Even when ill there was no trace of her former irritability. Up to the present date (1903) there has been no relapse."

Dr. Bramwell reports 12 such cases, Dr. Lloyd Tuckey a number of others, and Berillon and Liebeault and Wetterstrand do the same, and sixteen less well-known men have had the same experience.

Liebeault mentions 77 cases of *enuresis nocturna*, 45 boys and 32 girls, the trouble dating from birth, with an average age of 7, the youngest being 3 and the oldest 18 years of age, in whom hypnotic treatment yielded 56 recoveries, 9 improvements, 8 failures, and 4, seen but once and not returning, were supposably cured. Cullerre reports 24 cases of the same trouble, of which there were 21 recoveries.

These are samples of the results in juvenile degeneracy and reflex troubles, and it is apparent from uniform experience that a better knowledge as well as better facilities for the use of suggestion might lead to a wide extension of hypnotic treatment for similar difficulties. There is no reason but conservative stupidity that prevents the more effective organization and application of suggestive therapeutics to cases of the various kinds illustrated. In this country the whole subject, in so far as the public is concerned, is left to charlatans for its knowledge and use of hypnosis. The reputable physician, though he often uses it, has to be careful not to be too well known regarding his practice of it. He will not see that it is adequately investigated from its

psychological side and that it is in the hands of the best men for all purposes to which it can be applied. In Europe the subject seems to have been placed under better recognition and control, and the liberty of the individual in this country has tended to set up that discrimination between charlatan methods and scientific agencies which corresponds to the social and intellectual distinctions in the Old World, hypnotism flavoring of quackery and magic. I speak, of course, from the standpoint of public conceptions. The scientific physician recognizes the value of therapeutic suggestion and often enough uses it, but the knowledge of its nature and its place as a specific in the treatment of various diseases are not the subject of such scientific investigation as they deserve. The subject still wants that accurate knowledge which characterizes most other fields of physiology and psychology.

I am not here defending hypnosis and suggestive therapeutics as a universal specific. I am far from regarding them as such. The failures in their application are proofs that we have not yet the right to attach so large a faith in them. In fact, it may not be best for man to have any universal specific but morality. However this may be, suggestion is not more than one of the agencies which are our resource in such maladies as I have illustrated, and all that I should contend for is that it be the subject of a more patient scientific investigation from the psychological point of view than is usual in medical institutions. It has demonstrated its usefulness beyond all doubt, and whatever the humanities and

economies of civilization demand, it is one of the agents that the organized treatment of functional diseases cannot intelligently ignore. The proper use of it may put an end to some of the follies that infect large numbers of the community in their well-meant but criminal or insane application of "metaphysical" methods.

CHAPTER XII

REINCARNATION

There has been a eurious revival in recent times of the idea of reinearnation. It is probably due to the combined influence of Oriental philosophy, the belief in immortality, the deeline of the doetrine of a physieal resurrection, and the eonfusion produeed by the philosophy of Descartes taken in eonnection with the belief in immortality. The ideas in these various systems are not always, if ever, consistent with each other, but their use of a eommon language eoneeals their eontradietions, and it is time to expose the illusions to which a half-baked philosophy gives rise.

There is perhaps no belief of man whieh shows more pliability and persistenee than the belief in a future life. Man seems determined, " by hook or by erook," if I may adopt sueh a phrase, to believe in his survival after death. When he finds a set of faets which seem to make it impossible or improbable, he invents some eoneeption by which he may still eling to it, and he does not always stop to think whether his new view is eonsistent with his knowledge and desires or not. He is satisfied if he can eonjure up some means to delude his mind of despair. He is determined to hope against faet, and he will ignore facts

to keep his hope alive. Hence when any philosophy comes along to disturb the equanimity of his faith he turns to some analogies, physical or otherwise, for the redemption of his ideals, and reimbodies his religion in a new system of doctrine. In doing so, however, he may forget how much truth he owes to the philosophies which have disturbed his faith, and in the effort to get away from them he entangles himself in the meshes of a worse doctrine.

It will be necessary to examine the meaning of reincarnation as a step in the criticism of doctrines embodied in the same term to-day, and which in fact have no clear affiliation with the ancient conception of it. I take Plato as the most explicit representative of it in Greek thought. With him the immortality of the soul and reincarnation were convertible terms. He was not the first to believe in a future life among his race. Socrates held it, and perhaps in a personal sense. But Plato understood better the general genius of his age, which was not characterized by as definite respect for personality of any kind as for the unity of nature. In the polytheistic stage of reflection there was no sense of the unity of things, and the anthropomorphic conception of the gods offended the early philosophers so much that the first step in their reform was the assertion of monotheism, which was, to the Greeks, but another phrase for the unity of nature, since the gods were but forces of nature capitalized. When the unity of nature was once seized, the problem of change came before speculation, and in Heraclitus tended to destroy this unity and permanence. But his doctrine was quickly

corrected by the observation of continuity of kind, resemblances of type in the order of birth and death. The unity of causation in the monotheistic or pantheistic idea was supplemented by the unity of type in the order of time, or the evolution of species. What attracted and fascinated the mind of Greek thinkers was the ever changing and yet ever renewing types of organic beings. Nothing perished without either leaving behind it a similar species to take its place or reappearing again in another form like that which had perished. The ever recurring reappearance of life in spite of change and death accorded with the idea that something was permanent, and they conceived the cause of it to be the imperishableness of certain realities, even though it was only of the type.

Plato seized this view of things to give it philosophic form and expression. He was an irreconcilable antagonist to the philosophy of Heraclitus, namely, the philosophy of change and destruction of all things. He found some things permanent, as he thought, and to secure this view he insisted that the unity of kind in objects and organic beings represented a substance that was permanent and indestructible. He thought that, if change were the sole law of phenomena, things should never show identity of kind in the course of succeeding events. Hence the fact that the same kind of things constantly reappeared was to him evidence that there was something persistent and that the philosophy of Heraclitus, or the phenomenalists, was false. He conceded that sensible things disappeared, that is, that the sensible

individual vanished, but he held that the material out of which this individual was constituted reappeared in others.

The great strength of this claim rested upon a fundamental postulate of Greek thought. This was active and prevailed from the earliest period of speculation. The philosophers early conceived that the created orders of beings was composed of *elements*. The whole sensible world was conceived as constituted or made out of elementary matter. At first these elements were only four in number. In Democritus they were made innumerable, and Anaxagoras held to the same view, though he thought them different in kind while Democritus thought them the same in kind. But the idea of these thinkers was that all things were composed of these elements and that death was the dissolution of the organic or composite whole into its elements, which again entered into other complex organisms. Democritus could not easily explain the differences in things, because all his elements were exactly alike in kind. Anaxagoras had no perplexity on this point, because his elements, "homoiomeriæ," were different in kind and carried with their transmigration from one being to another the qualities which determined alike their resemblances and differences. But the main point to be noticed is that *the fundamental assumption was that substance is imperishable and passes from generation to generation, constituting the matter out of which the individual is made.* The majority of the philosophers probably conceived the elements as atomic, and only the Eleatics as an all-pervasive substance metamorphosing itself

into the variety of beings which we observe. But both the atomic and the Eleatic types of thought agreed that things were to be explained by the material that constituted their nature. That which appeared permanent in individuals was the matter which determined their resemblances, and other characteristics were evanescent.

We can easily perceive in this, the ancestry of Plato's doctrine of reincarnation of the soul. It was not a doctrine limited to the soul, but a universal law of the real world, whether material or spiritual. In fact the spiritual world for him and the Greeks, as we have already seen in a previous chapter, was only a fine kind of matter or ether. Reincarnation was then the law of all reality. All changes were simply the dissolution of the individual and the reappearance in other individuals of the elements or substance that had constituted previous individuals. With Plato the soul was not a phenomenal function of atomic elements, but was a kind of substance, and must persist according to the fundamental assumption of Greek thought. The individual, as he was sensibly perceived or known, was composed of "matter" or grosser physical reality, and this perished, but the essential characteristic, which consisted of the "universal" or common qualities of the species, did not perish. They were transmitted from one generation to another, and reappeared to make this resemblance and to illustrate the permanence of some substances at least. The soul was subject to constant reimbodiment simply as a law of nature and substance.

I have alluded to the broad general principles of

Greek thought in order to represent the point of view from which Plato approached the doctrine of immortality which he conceived in the form of reincarnation or the transmigration of the soul. With the Greek nothing perished in its *elements*, but the organization perished. The substance of things remained permanent, but this substance changed its forms, so that the individual disappeared. As the soul was a substance like all others, it was supposed to change its form of manifestation and so lost its individuality. This conception enabled Plato to maintain that the soul, at death, survived in some other embodiment. But it lost its personal identity. There was no memory of its previous existence. He had his system of rewards and punishments which might serve for an intermediate state until another embodiment took place. But the fact is that this idea of an intermediate state by Plato was a mythical representation of his more philosophic doctrine of transmigration. The reward of the good was described as a life with the gods and the punishment of the wicked as a probation in another animal life. But when the mythical elements of this view were stripped off, its real character was that of the reappearance of the same qualities in subsequent generations that had appeared in the ancestors. There was no memory of the past existence. The effects of one's life might appear in a subsequent reincarnation, but the experiences which produced these effects could not be recalled. Hence Plato's doctrine of reincarnation was inconsistent with a personal immortality.

A personal immortality or future life implies the

retention of memory, the same consciousness in general as in the material embodiment. How this is possible is not the question, but the conception of the term which shall define the issue. This is that personal survival shall involve a memory of the past earthly life. Unless this is involved in a doctrine of reincarnation it cannot be distinguished practically from annihilation or materialism. It succeeds only in disguising its import by using the word immortality, but not its meaning as understood since the introduction of Christian modes of thought. The distinction between Greek and Christian modes of thought on this point is radical, except in so far as the Epicurean conception can be converted into the Christian by showing that the ethereal organism, which it supposed, is not perishable at death as asserted. The development of materialism since that period has been toward the abandonment of this idea and the adoption of the more consistent view of previous Greek thought, which conceived all change as involving the loss of sensible qualities and the disappearance of the results of composition. Reëmbodiment meant the union with other elements in which the individual characteristics of the former embodiment do not recur. Hence modern materialism returned to that point of view which represented the most general conception characterizing Greek speculation, which was the permanence of substance, but the ephemeral character of its manifestations. Christian thought resented this view in application to the soul, and insisted that if immortality was to be distinguished at all from the metamorphoses of substance or the reëmbodiment of similar qualities

in successive generations, it must be personal and represent the retention of at least the main general quality constituting the individual, namely, consciousness and memory.

Now there is nothing clearer than the fact that reincarnation implies that, in the various embodiments of the soul, it is the same soul that is reincarnated. The very conception of the doctrine implies this. But whatever identity exists in these transmigrations, the soul is not aware of the fact, unless we accept the statements of certain people regarding incidents supposed to prove it. We must distinguish, however, between two things in the doctrine. They are the identity of the soul in its different incarnations and the consciousness of identity. I can imagine, after the analogies of primary and secondary personalities associated with the same organism, that the soul might change its embodiment and lose its consciousness of identity. Hence the actual identity of the soul in its different incarnations might be a fact without implying or involving any personal consciousness of that identity. But it is important to remark that, if there be no consciousness of that identity, the reincarnation is no better than annihilation for us. It is personality that we want, if survival is to be in any way interesting to us, and not only personality, but we want a personal consciousness of this personal identity. This would be to us not only the evidence of this identity of subject, but also the only fact that interests us in the problem of survival. An identity of subject or substance without a retention of our memories would have neither interest nor moral im-

portance for us. With Plato reincarnation frankly abandoned the consciousness of the past embodiment, and the only identity left was that of the substance which entered into the different reincarnations.

The fundamental question that arises is, "What evidence have we that any reincarnation whatever, whether personal or impersonal, takes place?" We must remember that Plato did not pretend to produce scientific evidence for his claims. He made his doctrine a corollary of the persistence of substance. As the Greek mind was possessed with the idea that substance was eternal, it could only assume that the soul was eternal the moment that it accepted its substantial nature. But it was confronted with the fact that this permanence of substance did not involve the permanence of its phenomenal modes or functions. Hence its reincarnation theories did not involve the persistence of personal identity. The "evidence" of the reincarnation was merely a deduction from the general theory of substance.

In modern times, however, there has been more of an attempt to produce evidence in support of the doctrine, though it has been colored by the influence of Christian conceptions after the Platonic was forgotten. The sense of the need of identity and survival, even though not personal, was reinforced by the skeptical tendency to deny the existence of a soul altogether; that is, by the materialistic theory, as a condition of believing in a soul at all. There has not been adequate consciousness, however, of the fact that, unless this soul retains a personal consciousness of its identity, the reincarnation doctrine was of no

practical use. But concessions have been made to the demand for evidence in deference to the desire to maintain some doctrine of a future life.

This attempt to produce evidence takes three forms. (1) Some appeal to mental and physical characteristics which noticeably reproduce in some individual resemblances to some past historical person or persons. (2) Some appeal to the recognition of scenes and events which it can be proved they had not personally witnessed at the time of their occurrence. (3) Some appeal to their personal memories of a previous existence.

In regard to the first of these claims of evidence, I do not think any intelligent person would treat it seriously. The morphological resemblances in the human race are such that coincidental identities in different generations can have absolutely no significance for reincarnation theories. If they did we should expect to find certain other associated resemblances which we do not in fact find. Moreover, the fact of heredity is against the probability of securing any such evidence as would be necessary to prove the transmigration of souls. Then, again, the appeal to resemblances would prove too much. The striking resemblances between parents and children might be adduced to prove reincarnation of the parents in the children, but all doctrines of reincarnation require the previous death of the reincarnated soul. In the present assumption both generations are simultaneous. In other words, we cannot suppose that the parents are reincarnated in their children without abandoning that conception of the doctrine which

has been the accepted one from time immemorial, and so altering the meaning of our terms as to make the theory absurd or useless, a mere statement of the observed resemblance of the two sets of individuals. In fact, we cannot look at such alleged evidence without rejecting it as absurd and unintelligent. It cannot be advanced by any one who understands the problem.

The second and third types of alleged evidence are more interesting. But I shall treat them as most probably illusions of memory. I shall not question the existence of human experiences, which seem as real as those which constitute the largest part of our normal life. But I think that we can make it quite as clear that they are not what they appear to be.

We are all aware that our memory is liable to mistakes in its reproductions. These errors and illusions are very familiar to us in our ordinary experiences, and we scarcely need to be told of them to recognize the fact. But in extraordinary experiences we are likely to forget this law of mental action and to increase our illusions by adding one of interpretation to one of reproduction. The fact, however, that we are exposed to mnemonic illusions is one to make us pause in founding upon apparent memories of a past or of places that we have never experienced so vast a doctrine as that of reincarnation. I shall quote some illustrations of mnemonic illusion which will reinforce the contention here advanced.

I have a personal friend who is an officer in one of the large universities of this country and who was once engaged in conversation with a judge of

the courts around a fireplace. They had come in from hearing a political speech, and entered into conversation about it and various reminiscences, when in the course of it, my friend remarked that he remembered the Harrison campaign. He went on to describe the processions, the songs, and doggerel poetry, and recalled incident after incident of that memorable campaign. The judge recognized the correctness and accuracy of the incidents, but remarked that he did not know his friend was so old as this recollection implied. His friend remarked, "Oh, yes. I am old enough to remember it." The judge asked him how old he was, and the friend replied that he was born in 1847. The judge thought he must be mistaken, and said so, but his friend replied that he was not, and that he could certainly remember his birthday. The judge then politely recalled the man's attention to the fact that the Harrison campaign had taken place in 1840. The friend's historical knowledge at once informed him that the judge was correct, and he went away completely at a loss to account for his memory. He felt personally confident that his memory was correct, but his other and historical knowledge showed that he was wrong. That night when he had retired, it all at once occurred to him that when his mother died, in 1855, he was sent, a child of eight years, to live with his uncles. The chief incident in the memories of these uncles, in a rural community, was their part in the Harrison campaign in 1840, and they used to entertain him and their neighbors with rehearsals of its scenes, processions, songs, poetry,

banners, and all the paraphernalia of such occasions. All this had so possessed the infant imagination of my friend that it was a real thing to him, and all that his memory could reproduce was the mental pictures of what he had seen and its association with the name of Harrison. As a child he did not, and perhaps could not, distinguish between the real and the reproduced incidents of that campaign. What had occurred, therefore, in the story to his friend, the judge, was the recollection of his actual experience dissociated from his actual historical knowledge. The supposition that he had existed before becomes preposterous in the light of such a simple explanation. I may reproduce two of my own experiences which resemble this one in their chief characteristics.

I was coming up-town on the Elevated Railway, and when I had arrived at the 33d Street station, I happened to look across Broadway, and saw the sign "Microbe Killer" over a store. I at once remarked to myself that I had seen that same sign before, but that it had been moved from the north side of 34th Street to this place on Broadway since I saw it last. Then it occurred to me that I must be mistaken, because there were no stores (fifteen years ago) at the point pictured in my memory. But my feeling that I had so seen it was so strong that I resolved to look as the train moved onward. As we passed 34th Street I observed that no store was at the point recalled, and never had been. Only Dr. Taylor's old church was there, and no microbe store, as I afterward learned, had ever been on the street. I was very much puzzled to account for the phenom-

enon. But in a few moments I recalled that it was on Arch Street, Philadelphia, north side of the street, that I had seen the store and sign "Microbe Killer," and that, if it had moved around on Broad Street there, it would have represented an identical relation to that which had manifested itself in my pseudo-recollection in New York City. The subliminal clue in the case was the association between Broad Street in Philadelphia and Broadway in New York. The identical element was the space-relations involved and the sign. Until the whole of the exact scenes was recalled, I had no means of discovering that the phenomenon was an illusion of memory, and I seemed to have had an experience at some previous time, which the recall of the true facts demonstrated was a mistake.

Another incident is quite as interesting, and it resembles those experiences about which people tell us, of having been at places at which it can be proved they have not been. I was in the train on the way to Kingston, N. Y., and in passing over the railway viaduct, which spans a deep gulch before entering the town, I noticed that I had been in that place before, and recalled that I had gone up this vale in a train and under the viaduct. I remarked to myself that I should recognize the railway station when I reached it. But when I arrived at the station it was not what I had remembered, and I was perplexed to account for the fact. A little later I asked a friend if a railway passed up the vale over which I had come, and he answered in the affirmative. I asked him then to name some places through which

it went, as I recalled going to some place on the road, but could not remember the name. He mentioned several places, but I had either never heard of them before or was absolutely certain I had never been there, as there was no reason for my going to them. I knew that I had but once in my life been in that locality. An hour or so later, after having given up the attempt to reduce the perplexity, I recalled the fact that it was from Catskill, N. Y., twenty-four miles further north of Kingston, that I had passed up a narrow vale under a viaduct or bridge, and that the station, which I had remembered as in Kingston, had been seen from the Hudson Day Line Steamer on my way to Catskill. Hence it was on the river-bank that I had pictured it to myself in my memory when thinking of it as I passed over the railway viaduct on the way to Kingston. Here then again was an illusion of memory. I had, in fact, never before been near this viaduct, and had never gone up the vale over which it passed. The resemblance was sufficient to recall a past experience, but not enough of that past was recalled to establish its identity or to distinguish it from the present experience, and so the illusion arose from that disparity.

These are very common experiences, and if we understood the laws of reproduction and association properly, as they have been discussed in a previous chapter, we should not be tempted to regard the facts as evidence of any remarkable theory of the soul. Almost every one can produce similar experiences, and if a little attention is given to them they

will be resolved into their elements, as I have indicated in the cases above. They are illustrations of the various laws of association and dissociation. Usually in our experience our memory recalls enough of the past to identify it unmistakably, even though some incidents belong to other times and places than those involved in the recollection. But often enough the reintegration or recall is too fragmentary to be sure of the identity, and an illusion arises. The resemblances between the past and the present may be recalled, and the differences, which would lead to a correct judgment of the case, become dissociated for the time, and unless they are finally recalled the illusion is not discoverable. There is that perpetual disintegration and reintegration of our memories which, in certain cases like those present, result in the complete confusion of them unless association can finally recall the dissociated elements.

Many persons report that they have a clear memory of having existed before the present life. I have had this statement made to me by persons of a highly intelligent character and who do not for a moment regard the experience as evidence of a past existence. They simply report that it has been a frequent experience. I have, in fact, been astonished at the frequency of the reported fact. But it also represents a type of illusion of memory. It is, too, a most interesting type. We cannot always trace it definitely to its cause, but there are many facts in human experience which point to a general view of the cause.

In the first place, we must note that all persons undergo an important change of personality between

the ages of four and ten. Often it will be between four and seven. Our memories seldom extend back to a period preceding four years of age. When they do they usually represent some isolated or striking event that impressed itself on our minds. Usually, however, the life of that early period is forgotten. Our personal memory, and more particularly the sense of personality and personal identity, begins, sometimes very suddenly, at that period when we awaken to a consciousness of it, and ever afterward the stream of consciousness and memory is definitely fixed in that set of events. Our personality is thus our remembered series of experiences or the consciousness of our identity through a definite or indefinite period whose events have that one characteristic of determining that self. Now if at any time some event should occur which recalled enough of the experience previous to that which represents our present consciousness of personality to make us feel that it belonged to a time previous, and yet we could not recall any sense of personality corresponding to it, we might be excused for describing the facts as representing a previous existence. It would be a perfectly natural illusion. The resemblance of such a feeling to those which I have described in the experiences just previously narrated is clear. We should simply be recalling a part of a past which was not producible in sufficient clearness to locate it in the mental states lying on the margin of our change of personality. So far as memory is concerned, our first stage of life is an existence previous to the present one which self-consciousness recalls.

A similar phenomenon might occur in any change of personality, but it is likely to be more frequent in that change which represents the rise to self-consciousness, which is the most important feature of our personality and personal identity. In fact, a sense of "I," or personal identity, will not occur until this self-consciousness arises. Any fact in memory, which does not affiliate with the period of self-consciousness, will appear outside of it as an unassimilated experience, and if it carries with it the sense of time, and possibly nothing else but the sense of time, antecedent to that represented in the normal and reproducible personality, it will naturally carry with it that of a previous existence, and in so far as the self-conscious personality is concerned it will be correct. But it will not serve as evidence of any existence prior to birth. It simply happens that the memory is not complete enough to recall all that is necessary to locate the fact rightly. The other elements which are necessary for identifying it have become dissociated, and the judgment of its meaning is exposed to illusion on that account.

Such facts as these make it practically impossible to secure evidence of such a doctrine as reincarnation. The question is wholly different in this respect from trying to prove survival by communication with the discarnate. In reincarnation we can rely upon only two general resources, the existence of identical characteristics in different generations and the recollection of this past and previous existence. The former has no credentials that can be respected seriously, and the latter cannot escape skeptical difficulties sug-

gested by illusions of memory. But communication with the discarnate is different. Whether it be a fact or not, the conception of the problem is distinct from that of proving reincarnation. Proof of a future life involves an appeal to memory of the discarnate, but the trustworthiness of that memory is not regarded. What we assume in a discarnate spirit is that, if it exists, it can tell something of its past and earthly existence. We do not accept the statement of such facts on their own face value. They must have two characteristics before they have any scientific importance. (1) They must be supernormally acquired. (2) They must be verifiable as the past experiences of deceased persons. Perhaps a third condition might be added, namely, that of quantity of incidents illustrating personal identity to such an extent as to exclude skepticism of all sorts. But the first two characteristics are the primary ones. We do not accept the statements of the discarnate person, even after we have excluded fraud and other hypotheses to account for them. But we have to verify them as supernormal phenomena independently of the source through which they are revealed. But with reincarnation, we have no means of verifying, independently of the reporter, the facts supposed to have a bearing on the issue. If we had any means of establishing supernormal incidents in our memory of some previous past, the case might be different. But until this can be done no claim whatever can be made for reincarnation on such facts as are usually adduced to support it.

A further difficulty besides illusions of memory

can be suggested in regard to the vision or perception of scenes which we seem to have seen before, but which it can be proved that we have not normally seen at all. We might contend that the identity in the case is due to some previous clairvoyant perception. For instance, suppose that in some clairvoyant dream, or similar subconscious mood, I had perceived any specific spot and its surroundings, I might afterwards have the sense of recollection if I saw either the same scene or some one like it, as in such instances as I have quoted. I could therefore not infer from this sense of identity that it involved a previous existence of my soul and its perception of the scene concerned. I do not indicate in this mention of clairvoyance that we have any reason to accept it as a fact. I only know that there are reported spontaneous experiences and experimental phenomena that are so classified and that are regarded as indications of clairvoyance by others. They may or may not be evidence of such a supernormal process. I do not care whether they are or are not. One thing is certain, that, if true, the facts in most cases have no evidence whatever of being the result of reincarnation. Many of the alleged clairvoyant phenomena, if treated as supernormal at all, instead of as casual coincidences or illusions, must be explained as some method of acquiring present knowledge, and do not refer to the past in any way. Hence if one admitted clairvoyance, it would stand as an objection to anything in the way of identity in scenes involving the past and present, at least during the life of the individual who has the experience. This is to say,

that we should first have to tolerate the hypothesis of clairvoyance before we could even think of reincarnation, and this independently of the proof of clairvoyance. I do not think that clairvoyance has yet been proved to such an extent that we can use it preferably to illusions of memory and of identity between the past and present. These simpler hypotheses are sufficient to discredit the claims of reincarnation, and the suggestion of possible clairvoyance is to show the extent of the evidential difficulties that must stand in the way of proving what the reincarnationist assumes.

Thus far I have dealt with the historical view of reincarnation. But there is a conception of it in modern times, which is a mongrel sort of thing that can never state itself clearly for us. It is a general conception intended to stand for a future life and also to oppose certain well-defined views of this problem. This modern theory of reincarnation is not so much based on facts, as it is a speculative possibility designed to answer the crude objection of some materialists who also think that, if the "soul" exists hereafter, it must have a bodily organism. Both the materialist and his opponents of the reincarnationist type are the victims of an illusion due to ignorance of both philosophy and science. It all comes from the modern identification of the terms "soul" and "consciousness," and the assumption that consciousness, as a function, must have a subject for its basis. The latter assumption is true enough, but the former was an incident of the process which resulted in the primacy of materialism and the habit of using the

term " soul " when the reasons for its existence had been discarded. Besides, the philosophy of Descartes came in to introduce perplexities into the problem.

The original and proper meaning of the term " soul " was that it was the subject of consciousness, the substance of which consciousness was a functional activity. It was not the name for the consciousness itself, but of that which the existence of consciousness implied, if it was not a function of the brain. But materialism dispensed with the necessity of supposing the existence of any other subject than the brain. Materialism also assumed that consciousness was a phenomenal activity, a function, a mode of something, and this something it made the body. Consciousness thus required an embodiment in this theory as well as in its antagonistic theory. It conceived the body as a necessity for its occurrence, and if that theory of the relation of consciousness to the organism be the true one, there can be no doubt about the assumption that any survival of personal consciousness would require an embodiment, either a new one or the resurrection of the old one. Hence the doctrine fixed the assumption of the need of embodiment for mental activity. Consequently the term " soul " had to be abandoned in scientific and philosophic usage or be used synonymously with consciousness. In the latter sense it would carry with it the implication which all schools of thought maintained regarding consciousness, and hence survival would suggest a body of some kind as necessary for the soul. Hence the temptation to think and speak of some form of " reincarnation " when they wished to believe

in a future life. But this was not the way to meet the materialist. The proper mode of attack, that usually taken by philosophy and now taken by psychic research in its peculiar way, was to show that consciousness was not a function of the organism, and leave the speculative question of its embodiment aside for the time. If we could show that consciousness survived death, we could assume one of three alternatives as possible, namely, (1) that it might be a stream of functional action in the absolute; (2) that it might be a phenomenal action of a Leibnitzian monad, or point of force; and (3) that it might be a function of a "spiritual" body, an ethereal substance or organism, after the Epicurean conception. No one of these would require the idea of *re*incarnation or of incarnation of any kind as a necessity understood in material science. Consequently the modern doctrine of reincarnation, if distinguishable from the ancient and Oriental conception at all, is synonymous with ideas which it is supposed to antagonize and has no importance in the discussion of reincarnation historically understood. Clear thinking and a knowledge of philosophical doctrine would prevent using the term at all unless we intended to revive the Platonic and Oriental ideas. But these have no interest for any who insist that a future life, if it is to be rationally conceived, must involve the survival of personal identity. Any other conception is a social fad which serves as an illusion masked under the form of philosophic language. It has the associations of a future life without the reality, and one can appear intelligent

without saying that he is either a materialist or a spiritualist. Any use of the term to denote survival of personal conseiousness in another subjeet than the brain might as well eall itself by the historical name and not wince at an unfortunate term beeause it does not like materialism and feels that spiritualism or spiritism is not respeetable. Clear thinking will plaee us between these two alternatives and prevent our reinstating reincarnation ideas unless we mean frankly to adopt the ancient doetrine, which is praetieally convertible with materialism, but more unintelligible.

The reinearnation doctrine is not the most rational view that we ean take of the eosmie order as an ideal one. I do not mean to say it is not true. For all that I care in the present diseussion it may be true. I am only eontending that, if true, it does not represent a rational order of things. Our moral standards place personality above an impersonal order and sequenee. We base our ethies on personality as the superior ideal, and this personality involves eontinuity of consciousness and memory. If this eontinuity is interrupted, we eannot exact the same kind of responsibility as we demand in our individual and soeial ethies. No theory of reward and punishment whatever ean be rationally applied to another existenee for our eonduet here. We require eontinuity of personality between the two worlds to assume or eoneeive a rational eonnection of aetion and eonsequenee between them. The traditional reincarnation theory eliminates that eonnection, and hence the Platonie system of rewards and

punishments was an inconsistency in the doctrine. The only rational order of responsibility is one in which the continuity of consciousness is involved, if that responsibility extends beyond the present social system. If then we limit moral ideals to our present earthly condition, we may well render a reincarnation doctrine consistent on this point, but we shall not make it any the more rational as an ideal system. If personal identity in the present system be the rational condition of things, and if we must necessarily think of personality as the highest conception that we can form of an end to attain, we must naturally assume that a rational order would favor that development which did not cut off the opportunities of progress for personality at the point of death. Reincarnation ideas, with their elimination of memory from the next and succeeding states, would only leave us where materialism leaves us, in so far as our ideals are concerned, and whatever we might say of its truth, we would have to reject it as irrational.

It is the uncritical poetic view that charms and deludes most people in this question. The idea of reincarnation offers a sensible or sensuous picture for the fancy in talking of a future life. I have known many to quote as if it were a philosophic argument the beautiful lines of Wordsworth.

> "Our birth is but a sleep and a forgetting:
> The Soul that rises with us, our life's Star,
> Hath had elsewhere its setting,
> And cometh from afar."

I would not refuse a fascination to such language, but I would not be tempted to transfigure it as a philosophy. I am willing to indulge a literary imagination and a poetic reverie without insisting upon its scientific basis. That might have been apparent in the very next lines, by which Wordsworth gives another color to his sentiment.

> "Not in entire forgetfulness
> And not in utter nakedness,
> But trailing clouds of glory do we come
> From God who is our home."

Pantheism is not inconsistent with surviving personality any more than it is inconsistent with present personality, and we have only to remember the poet's sympathies to see that it would be converting the effects of reverie into scientific dogma to treat his lines as any intellectual support for preëxistence. That doctrine must run the gauntlet we have assigned it. Illusions of memory and of philosophic speculation founded on a misunderstanding of the problem are the standing difficulty in the way of either its truth or its rationality.

CHAPTER XIII

RESERVATIONS AND MORALS

Previous discussions have brought us to the boundaries of transcendental things and kept us from stepping beyond the limits which our knowledge imposes upon the temptations of the imagination. We have now to summarize the influences which make for cautiousness in our thinking and which, while they may restrain our fancies, do not wholly nullify the functions of the mind in its curiosity about what undoubtedly lies beyond the senses. Whether it can ever penetrate the veil that hides what it seeks so impatiently and so passionately is not the problem now. It may or may not have power to make a successful voyage on Kant's foggy ocean, with many a sand-bank or shoal to be avoided, but no amount of self-satisfied wisdom, or intellectual pride, or contempt for the common mind, as in the rejection of stories about meteors and the phenomena of mesmerism, is going to restrain the ambition of bolder adventurers to embark upon discoveries against danger and adversity in a limitless universe of reality, seen and unseen. The duty of the sane and intelligent man is to see that compass and rudder are supplied to the voyager and that the

discoverer can always have a way of return to the land from which he sailed. If we could draw a hard and fast line between the known and the unknown there would be no temptations to transgress the limits which we sometimes imagine in our way. But even in physical science the old boundaries of the material world were long since abandoned, until apparently in the present age all the dogmatic metaphysics are in physical science, where its devotees are floundering about in a sea of atoms, ether, ions and electrons, X-rays, N-rays, and the transmutation of the elements, having abandoned every one of the criteria by which they had corrected the aberrations of ancient philosophy. If science thus indulges its own speculative vision with little restraint, it must either extend that liberty to the common mind or assume the duty of directing it toward the proper end. It is not the instinct that is wrong, but the undirected action of its energies, and hence it is the function of the wise to be at the helm.

An apology, however, for an inquiring disposition is not a justification of its conduct. It is only a recognition of its rights, while the admitted dangers to which an untrained intellect is exposed are an equal excuse for caution, and hence the duty of humility and modesty is as much on the side of inexperienced curiosity as are humanity and sympathy upon the side of the wise. We cannot break away from normal experience and ignore its guidance with impunity. We have ever to return to it for our bearings, partly because it is in this that our daily lives have to be passed, and partly because anything

that transcends it cannot be utilized unless it has some connection with the present.

These general observations prepare us for recognizing the ineradicable instinct of man to peer into the processes of nature and the forces that are concealed from his ordinary sensible representation. That he is never content with what he sees and feels is apparent in much more than his religion. All physical science is as much an endeavor to penetrate the veil of sensory impressions as is the flight of faith or fancy. The Greek mind would not stop, any more than the savage, with the visible universe, and it set up a vast cosmos of elements and substance with which it could play tricks of explanation quite as freely as theistic speculations. It was not Christianity that first initiated the fascinations of metaphysics. Greek materialism was quite as mystical as later religion, only its mysticism was an *a priori* play with atoms. Nothing can surpass the weird and fantastic flight of Plato's imagination. His avowed contempt for sense-experience in the interpretation of the nature of things, though guided in his own reflections by the more sober traditions of philosophy, only landed his followers in the maudlin speculations of Neo-platonism, which might not have been so bad had they been tempered by the scientific spirit. It was the materialists that preserved faith in sense-perception while they indulged in metaphysics, and whether they were consistent or not, they were sufficiently intelligible to obtain the direction of human thought. But all schools looked

toward the supersensible for the solution of all enigmas.

All the interests in the supersensible were finally concentrated in the immortality of the soul. The organization of speculative metaphysics was made primarily for the defence of this belief, and the belief itself had in its support all the natural passions of human nature. The Greeks, accepting the religious conceptions of their time in regard to the nature of another life, probably derived from phenomena like those which are the subject of psychic research, thought the life after death was not worth living and that their paradise was to be obtained in the world of sense. Christianity came and idealized the transcendental world, neglecting after its rise the evidential aspect of its belief, and contemned the sensory world. Its passions were thus directed wholly toward the future and ideal world. It soon abandoned science and the metaphysics of the materialists, and began a long revelry in a spiritual metaphysics that intensified a passion already strong enough. It educated the human race in an interest which it will not easily sacrifice, and when materialism revived its claims to challenge the belief in a future life, which had for so many centuries been the central feature of thought and hope, it was natural that a life and death struggle should be precipitated between the two rival speculations. That is the situation to-day, and the issue so permeates all other philosophical interests that are not immediately practical that any evasion of it only removes their importance from recognition. This subordi-

nation of all metaphysical speculations to the one interest of human personality and its survival may be deplored, and it may have unfortunate consequences, but if this be the fact, we have the passionate hostility of materialism and its ramifications to thank or reproach for it. The interest in a spiritual theory of life may have its abuses, but these do not make materialistic passions any better. The extremes into which the human mind runs are as bad in one direction as the other, and it is only natural, when the finer souls see the degeneracy of both, that they should seek some middle way out of evil tendencies. But such a course never commends itself to those who like issues formulated in clear opposition to each other. Hence the contest between a materialistic and a spiritualistic view of the world always draws a clear line between the known and the unknown, the former being limited to the world of sense, and the latter being extended to all that is beyond.

This boundary, however, never succeeds in keeping itself at any one fixed point. It is forever moving from its arbitrary limits into the territory of a spiritual view, and materialism has lost the well-defined limits of its earlier psychology and speculations, until one does not know the difference between its present claims and the domain of its former antagonist. The transcendental metaphysics of modern physical science are a proof of this contention, and it is but a light step from its ethereal background of nature into the realm of universal personality. And it makes no difference whether the old antithesis between matter and spirit is maintained any

longer or not, because physical science has so refined the supersensible world of its speculations that the distinction is lost in the clouds. It was made only in deference to the need of eradicating the sophisms of the materialist, though it may have given rise to other sophisms as bad. But whether necessary or not, the distinction has lost both its metaphysical and its ethical importance, and there is no excuse but a difference in human interests for the passionate antagonism between the two schools of thought. The supersensible is equally the basis of their views of the cosmos; with the tendency of physical science to speculate more passionately on the supersensible than religion or ethics, which have finally come to recognize the importance of the practical and present in their activities. The resource of religion in the supersensible is faith; that of science is experiment. Both, however, show the same interest in the transcendental. It is not as it once was the question whether knowledge of reality was limited to sensation or mere sensory experience, but whether the transcendental can be assumed without experience of any kind. The opposition is not between what sense gives and what intellect may give, but between what any mental process attests and what is held without evidence of any kind.

In some form or other, therefore, we find mankind interested deeply in what lies beyond immediate knowledge, and in most conditions nothing excites its interest so much as the question whether we shall live again when the bodily life terminates. This issue is the one toward which all other interests in the

supersensible move, whether we try to prevent it or not. But leaving this primary moral interest out of account for the present, it suffices to keep in mind the consuming passion for something beyond our ordinary experience. The most of us are not satisficd with what lies before our natural vision. We seek the ever-receding and tantalizing mysteries of the unknown. We are always at the tasks of Sisyphus and Ixion. Thcre are exceptions to this conception of human interest, but they will be noticed in their place. The majority of mankind feel little satisfaction with the world of the present moment, and ever look toward what lies bcyond. The passion gives rise to all sorts of illusions, and it requires all the tenacity of skepticism to restrain this natural instinct, which is never more exposed to vagaries and irrational conceptions than when it is in pursuit of a future life. The correction of its follies and errors begins in the cautiousncss which we have to maintain even in the conclusions from our normal experience. The phenomena that even suggcst such a thing as a soul and its survival are so rare or sporadic that reservations are more obligatory here than in the more common of our experiences. But if illusion and hallucination are so frequent in normal experience, the duty of prudence and suspense of judgment are all the more imperative when that experience is abnormal or supernormal. The reason for this fact will be apparent in the examination briefly again of the limitations of knowledge in sensory phenomena.

The naïve mind — and this is often the concep-

tion or the implication of even scientific men who ought to know better — thinks its sensations represent things as they are. But we soon learn that our sensations may not even be simulacra of reality. We soon learn that the nature of things is not expressed by the way the organism is affected and that our sensations are subjective affairs, things of the mind's own making on the occasion of external stimuli or impressions on the sensorium. Sense-perception thus appears as non-representative of the external reality which is not expressible in terms of sensory experience. The naïve mind supposes that there is nothing more than what it sees. The sensible world is supposed to be the only world of knowledge. But the most superficial examination of sensations reveals the fact that sensations are subjective and that the world of their causes is not like them in kind, but must be conceived as more or less in antithesis to them. That is, they exist with a difference between them that necessitates regarding one of them as supersensible and non-representative in experience and the other as a mode of mental reaction distinct in kind from the thing which it implies externally. Consequently, right in normal experience we find the evidence of the supersensible. This conclusion would not appear to the naïve mind. It requires nothing beyond the sensible world, whether with the skeptic this be sensations alone (Idealism) or with the untutored subject it be the identity of sense and reality (Realism). The skeptic, however, must choose between Solipsism, that is, the entire limitation of knowledge to one's mental states, and the admission of something super-

sensible whether definable in terms of experience or not. The naïve mind is the only one that has no need for anything beyond what its senses reveal.

A critical examination of normal sense-perception or sensory experience thus shows the existence of a supersensible world, and owing to the fact that it has to be conceived more or less in negation of what the naïve mind at first takes it to be, we have considerable freedom in our interpretation of its nature, if that expression can be permitted. But we are not entitled to conceive or name it as we please. We have been accustomed to call it "matter," and though the new point of view, enforced by the idea that it is really supersensible, might seem to suggest the right to call it immaterial, and many have called it "spirit," yet this is not a legitimate conclusion. All that we are entitled to do in thus ascertaining that it is in some way opposed to the naïve conception is to say that it is not like our sensations; that it is a non-sensible or supersensible reality, whose existence we ascertain by an instinctive application of the principle of causality. We may not at first even be qualified to call it matter, as that conception might carry with it the old implication of the naïve view, and the facts show that it is not this. Much less are we entitled to call it "spirit," because this implies consciousness, and as sensation is a form of consciousness the antithesis to this, involved in the distinction between reality and sensation, between cause and effect, excludes "spirit" unless we can obtain other evidence of its "nature." In the first stage of knowledge it will be neither "matter" in

the sensational sense nor "spirit" in its true sense. If we call it "matter" in the supersensible import of the term, it will be for the reason that it denotes the idea of causality exclusive either of the fact or of the evidence of "spiritual" action. If the uniformity of the relation between this reality or cause and the sensation be unlike that of conscious agency, we may call it "matter" in the sense that it excludes intelligence from its conception, and that is precisely the scientific and philosophic conception of matter, and it is the result of the most critical investigation of the normal phenomena of experience.

Two important truths are involved in this view of normal experience. (1) The existence of a supersensible world of reality evinced by normal phenomena and not requiring the evidence of either the abnormal or the supernormal to prove it. (2) The existence of certain limitations in the judgment of the "*nature*" of this reality, namely, in the description of it. The older naïve view would describe it in terms of sensations: the newer view must describe it, if description be the name of the act, in terms of the *uniformity of coexistence and sequence*, that is, in terms of its mere law of action, until we learn more about it, if that be possible. But we have in this situation a most important consideration enforced by the limitations indicated. The naïve and untrained mind is not qualified to deal with the problem, even of normal experience. It has to accept the results of science and philosophy, that is, the educated and expert mind. The interpretation of even normal experience is not on the surface. It

involves scientific and deep reflection, and especially an acquaintance with the laws of the human mind, and any neglect of these conditions only leads to illusion regarding the whole problem of reality. We may satisfy ourselves that there is something beyond the senses, but it will not be so easy to determine *what* it is, what its *nature* is. This must be the work of the qualified student, and whether the reality shall be termed "matter" or "spirit" will depend upon a most profound investigation not within the capacities of the ordinary mind. In this, as in all scientific and philosophic problems, the work should be left to the men whose business it is to investigate them. If the idea of "spirit" had not been introduced into human thought, the term "matter" would suffice to name this cause of sensation and other phenomena. It would be endowed with all the attributes or qualities of action that we now attribute to both "matter" and "mind." It would be "dead" and unintelligent in certain forms and conditions, and active and conscious in others. This was, in fact, the Greek conception in all its schools. Matter and mind were the same in kind, in so far as they were substances, as we have seen above. Only when Christianity came was the distinction made radical, and the one made to exclude the other. Matter stood for inert and unconscious substance, mind for conscious and self-active substance. The proof of the existence of mind is more difficult than that of matter. The reason for this will be apparent in the following.

The simplest experience we have of causal action is that of the external world on the senses. It is

the first plaee in which we become aequainted with the fact. It is the most frequent form in whieh our experienee oeeurs. All that we require for defining it, at least at first, is the uniformity of coexistence and sequence between sensations and a something giving rise to them. We do not discover any traces of intelligenee in its action on sense, and when intelligence seems to be associated with material aetion we find it an additional factor in the totality of our experience. It involves eomplexity where simple material causality is simple. Hence the existence of matter seems to be the nearest and simplest conviction that we can adopt to explain phenomena showing no indieations of accompanying intelligenee, and the conception stands for the exelusion of it.

When it comes to evidenee for the existenee of mind as something other than a bodily function, the problem is a very diffieult one. We are directly aware of our sensations and states of eonseiousness. We are absolutely assured of these beyond the assaults of skeptieism. But the eertitude that we are eonseious does not carry with it the same certitude that our minds are substanees other than the brain. We assume or know that we have bodies, material organisms, with whieh these mental states are asso-eiated, and we have no knowledge of ourselves apart from these bodies, so that the evidenee seems to favor the treatment of these states as function of the bodily organism. Henee we have no direet evidenee normally of anything but the assoeiation of eonsciousness with a material body, and assuming that matter can produce sensation in us and that it is the centre

of such functions as digestion, circulation, and secretion, we can very well imagine that consciousness is also a function of the same organism. If it be this we do not need normally to suppose that mind is a name for a substance other than the brain at all. It is only a synonym for mental states or inner phenomena, and these are not independent of matter, in so far as normal experience conceives it. The direct knowledge of mind or consciousness does not exclude the possibility that it is caused by matter alone and so dissolved with the bodily organism.

But how is it with the existence of other minds than our own? If immediate consciousness does not prove the independent existence of mind-substance and if the law of causality does not require us to go beyond matter or material organism to explain the phenomena of consciousness in the subject, may not the existence of other minds than our own lead to a different conclusion? The answer to this question is not so simple.

In the first place we must remember that we have no direct or immediate knowledge of any minds or states of consciousness but our own. I do not know directly that my friend or neighbor is conscious. I know more or less directly that his body is present, but I have to *infer* from his actions whether he is conscious or unconscious. As I know that I myself am conscious and that my actions are related in a certain way to my mental states, I may safely infer from like actions or movements in my friend or neighbor that he is conscious. But I never know it directly. It is only the difference between the uni-

formity of actions in inert matter and the adjusted actions in my friend or neighbor that suggests intelligence in the latter. The mind or substance supposed to be the basis of the intelligence is neither visible nor necessarily inferable from the consciousness. From my own experience again I infer that the association of this inferred consciousness is with the bodily organism, which I observe may imply nothing more than that the organism is its cause or subject, and I may not require to suppose that consciousness requires a subject or substance other than the brain to account for it.

The consequence of this position is that normal experience does not attest with any certitude of a scientific kind that mind is anything other than a function of the body. Philosophy generally relies upon the difference between mental and physical phenomena, that is, their real or alleged difference of kind, to support the doctrine that the mind is capable of being independent of bodily functions. But while I concede this difference in nature between mental and physical facts, I do not admit that the evidence is anything like scientific proof, and I reserve the right to demand evidence that they are as distinct in kind as they superficially seem to be. But whether radically distinguishable or not, there is no scientific or philosophic proof of the independent reality of mind but the fact of its isolation and the discovery of its identity, whatever the method be for deciding this.

Let me summarize the result again. We have found that normal experience, when properly interrogated in the light of the principle of causality,

assures us of the existence of the supersensible. A world beyond the senses is a settled fact, a fact certified by scientific investigation and without appeal to exceptional phenomena. This conclusion is reinforced by the phenomena of X-rays, wireless telegraphy, and radio-active substances. We do not require traditional beliefs or dogmas to assure us of these. The most general and common experiences of every man, when understood, point certainly to realities which the senses, though they are the medium for the revelation of their existence, do not represent as they are. Consequently, the very conditions which determine a transcendental or supersensible world establish reservations in our judgment of what this world is like. The same facts which prove its existence teach us to reserve our opinions about its nature. Belief and skepticism are thus inevitably associated, the one supplying a basis for our immediate behavior and the other a restraint against hasty assumptions about the meaning of things. And this latter field of the unknown — the unknown, however, in terms of *what* reality is, not the fact — is the wider one, and offers a large possible range of inquiry. But if normal experience shows how difficult it is to interpret the facts, in spite of their frequency, how much more is the duty to maintain reservations and caution in regard to phenomena that are less common. Here we find in our commonest life phenomena that admonish prudence in regard to our belief about their meaning, and that require the utmost knowledge of the trained mind to reduce to intelligible order. Yet we find untrained minds rush-

ing in where the wise fear to tread. The revelation of nature seems to stop short with the fact of its external existence and to leave every conclusion about its nature and meaning to the most patient toil of expert men. Nature keeps her secrets except in response to an inquisition that only a few of the best trained minds can institute, and the duty of caution and skepticism is quite as imperative as faith or hope.

This view of the matter is all the more evident when we notice the meaning of illusions and hallucinations. Here we have phenomena that impose decided limitations on our judgments about even the very existence of external reality. In the previous observations we have assumed that our natural judgments could be accepted without question in regard to the existence of an external world, even of the naïve type supposed to be actually represented in sensations. But illusions and hallucinations come in to disturb our equanimity in such matters. We find that we require a criterion to distinguish between experiences that surely attest objective reality and such as represent only subjective and abnormal states. We have even to assure ourselves that there is anything except our mental phenomena; and to be certain that there is a supersensible reality not represented in its nature in sensation is another conclusion which the utmost care only can attest. We have to run the gauntlet of skepticism in the very field of the most natural and frequent experiences.

If we have to be so skeptical and cautious in our normal experiences, what will be said of our duty

in regard to phenomena claiming to be supernormal, and that are so sporadic and rare as to require collection for centuries, perhaps, in order to assure us of their meaning? Every one knows how persistent doubt has been, right within the field of our most natural phenomena. What should it be when we are not assured of what the facts are in real or alleged supernormal phenomena? Sensations are so well defined and so universally recognized that we easily understand what we mean when we talk and think about them as actual occurrences. Phenomena purporting to be supernormal represent but a very small percentage of our experience. In some they never occur at all, and in those with whom they do occur they are so rare as to represent so small a part of their mental life as exposes them easily to the suspicion of being casual illusions and hallucinations, and unless they occur often enough and are collected in sufficient numbers, with credentials that give them scientific weight, they must be treated as the products of chance, that is, of causes which are not beyond normal interpretation. We cannot form hasty conclusions from occasional facts when they are undoubted exceptions to the ordinary course of things. They may be good reasons for instituting inquiry, but until they articulate with the order of our normal experiences they have to be received with caution. Facts have to be complex enough to escape the interpretation of chance before we can do more than suppose them indicative of *some* agency unusual. *What* that agency is, as in normal experience even, has to be the subject of much more prolonged inquiry.

I have made my observations general because I intend that they shall apply, not merely to the alleged phenomena of psychic research, but also to all unusual events in our experience. They apply to the belief in meteors, radium, unconscious mental states, evolution, or to any belief introducing new conceptions. The observations apply all the more to such claims as the existence of a soul after death. Not, however, because the idea is new, but because of the moral interests, present and future, involved in the belief, and because of the passions that are associated with it. If we have great difficulty in assuming a soul for normal experience, so much the greater will be this difficulty in the case of alleged supernormal phenomena, not because they are supernormal, but because of the obstacles in the way of proving them to be facts or to be what they apparently are. The settlement of such questions must be left to those who are properly qualified to distinguish between illusory and genuine phenomena and not left to every interested man who may decide to study them. In this, as in all other deeply scientific problems, the scientifically trained expert must be the judge. Any one may report his experiences, and possibly even the untrained man may report facts less clouded by theoretical influences, but he cannot be permitted to monopolize explanations. He must learn to defer to the impartial and judicious investigation of men who have dealt with large masses of associated phenomena. The layman is not the man to solve the largest and deepest problems of the universe, as his equipment of psychological

and other knowledge is not sufficient to justify his attempt. We must learn to trust the qualified man in this subject as we do in all other matters. We would not think of building our own houses, of investigating wireless telegrams for ourselves, of doing our own plumbing, of assaying our ores without a previous knowledge of the process, of pleading our law cases in the courts, or of doing anything that requires special and technical knowledge. But somehow we all think that any one can investigate and determine the immortality of the soul or dogmatically decide against it. We suppose that the physical problems of the universe require the best knowledge for their solution, but that the psychological problems, which are, in fact, far more abstruse and complicated, can be solved by any man whatever. The presumptiveness of this ought to be apparent to every intelligent man or to any that claim to be intelligent.

The layman would be under no temptation to dabble in these subjects if the scientific man performed his duties. Too often the professional man scoffs at all that he hears from others, and places himself where he has either to reverse his judgment when the case is proved against him or to remain in blissful ignorance of the truth. It is unfortunate for us to have to admit that in all history the great movements for man's intellectual and moral advancement have begun among the laity and not among the scholars. The latter are so identified with aristocratic tastes and beliefs that they are either blind to new ideas or they live in satisfied indifference to the rights of humanity. The scientific man takes the

place of the ancient priest, and inherits his duties to the public. He cannot expect the support of that public unless he takes an interest in its education and welfare. When the scientist takes to an aristocratic life and affects to despise those that have taken him for their prophet, he must not be surprised when this public resorts to its own investigations and throws out of authority him who ought to know more than the layman. The sure way to influence with the public is to inspire its confidence, and the only quality that will do this is that of respectful consideration of the great problems which humanity at large wishes solved. You will forfeit its respect and confidence if you do not, and, as in many other great movements, the layman will depend upon himself for the discovery of the truth, though it takes him ages to do what the scientific man might do in a few years. If there are facts upon which an opinion rests, and if those facts repeat themselves from age to age, no skepticism can prevent the necessity for their consideration, though it may prevent the investigation which they deserve. Science cannot imitate bigotry and dogmatism after protesting so long against them in religion, and hence it must either exercise patience and sympathy with what it regards as illusory in the public or undertake the inquiries that will guide the layman into the truth which he is seeking.

What I have said in regard to morbid psychology ought to reinforce these observations beyond measure. It is to be regarded as more than a warning against inexpert dabbling with the problem, and also

as containing another set of facts which are extremely important in both the solution of the issue and in limiting the knowledge which we shall have after the solution is effected. Every one will admit that precautions must be against accepting as evidence of a soul and its survival the phenomena which can be referred to secondary personality. But it does not so often occur to many to remark that these phenomena may be treated as initial stages of mental conditions which may actually lead to the manifestation of the supernormal. I shall not here enter into any elaborate proof of this possibility or of the explanation of it. There is no space for this. I can only suggest this possible view of these mental conditions and proceed to indicate how it determines the limitations of human knowledge concerning the transcendental. The reader must be supposed to have been sufficiently acquainted with abnormal psychology and with the phenomena of subliminal mental states to see and appreciate the point without elaboration, and if he does not see and appreciate it, so much the worse for his disposition to reject the consideration of the matter.

If modern psychology has shown us anything, it has shown us the function of the mind to modify whatever passes through its alembic. It is not a wholly passive transmitter of impressions, but takes them up and moulds them into its own forms and meaning. Now as secondary personality is often accompanied by hyperæsthesia, or extremely acute sensibility, it may be the initial stage of that condition which leads to rapport with a spiritual world.

This view of it was actually taken by Immanuel Kant, though secondary personality as a systematic mental process was not known in his time. He called it abnormal mental conditions. If rapport with a spiritual world be established in this way, communication with it would be affected by the medium through which it passed, and limited to the same extent. This is one of the most important facts for the layman and public generally to master. The tendency is to assume that, if communication with the discarnate be possible at all, it will guarantee the most free and remarkable revelations. There is no excuse whatever for this except the expectations which traditional theology has created and which our poor newspaper editors in their omniscience like to indulge. It is not a revelation of wonders that man needs. This demand and faith were the characteristics of imperialistic ages when he was governed, not educated. Self-reliance does not flourish in an environment of dependence on a revelation that is not the product of man's own activity. If he is to retain his individuality he must expect his knowledge to express his own mental action, and any access to the outside world, material or spiritual, must reflect the influence of the medium through which its agency passes. When that medium is abnormal, he must expect it to color the revelation which it transmits. A sane man would not be troubled by its triviality and confusion. On the contrary, he ought to welcome them as indicating the limitations which nature places upon curiosity, while it establishes the possibility of invoking hope, as personal experience invokes history in the regula-

tion of conduct. The abnormal medium through which knowledge of another world comes may not exclude the fact of such a life, but it teaches us caution about hasty conclusions in regard to its nature, and we may rely upon the law of evolution as the expression of progress to expect that continued existence will open the way to the realization of a spiritual ideal. To make the revelation intelligible in terms of our usual sensory notions of things would only be to divert human aspirations toward ideals too material for another form of existence; while its passage through the colored medium of conditions not adjusted to the normal character of both worlds reveals all we need and conceals what we do not need.

In previous volumes I have emphasized the importance of a belief in a future life. I qualified this view of it, but did not discuss the limitations of its usefulness at any length. I wanted to place in clear light its function in social and ethical progress. But the belief in a future life is not the only agency that has acted on the moral and political life of the ages in the direction of progress. There have been accompanying influences which have been quite as effective, though they were not always rightly applied. Every one who has read history with an impartial judgment will recognize that the immortality of the soul was a powerful influence in moulding all Occidental life wherever it became a recognized belief. But it was not the mere belief in survival after death that determined the moral and social ideals of these centuries. The accompaniments of that belief did as much or more than the belief itself

to fix and protect certain ethical conceptions which now characterize our life and did not characterize Greco-Roman civilization. Along with the brotherhood of man, which was in a measure at least instigated by the belief in a future life, and the sanctity of woman and motherhood, which was directly produced by the belief, came the doctrine of limited probation, which was the most important and the most powerful influence of all these centuries in developing certain habits of mind and will in men. This probation, which was limited to this life, was associated with a system of rewards and punishments that was attractive or frightful enough to make men pause in their conduct if bad, and to invite them onward if good. The Greek and Roman mind had not worked out its system of rewards and punishments as clearly as did Christianity. Or if it had recognized the system, as it did in such productions as Plato and Vergil, it did not limit the probation so definitely to the present life as did one branch of Christian belief. This, with the feeling that the next life was inferior in character to the present, as reflected in the messages of the oracles and similar phenomena, prevented the belief from being as useful and as powerful an incentive to affect conduct as in Christian ages. The idealizing of the next life by Christianity, if we were righteous, and the terrible consequences in the next of sin in this life, brought the problem of conduct so clearly before the conscience that the moral law had a rigidity that no ethics of Greco-Roman civilization ever possessed, except as political laws. These were earthly affairs.

There was no connection between the morality due the state and that due to one's future life. In Christianity social and religious duties were the same, and a man's salvation was gained or lost by the character of his relation to his fellow man, as well as by that of his relation to God. When this morality was enforced by an elaborate system of rewards and punishments and the limitation of probation to this life, with added political power of great extent and strength, we can imagine that the belief in a future life, merely as a belief, was not the only influence that gave unanimity to modern social and political ethics. We must not forget, therefore, that there are other influences than a belief in a life after death that are quite as effective in moulding character, and that we must be as careful as Christianity was in its association of social ideals with its doctrine to see that the purely personal element of the belief does not absorb our interest and enthusiasm. It should be nothing more than a means for fixing a basis for that view of human life which protects ideals that materialism cannot protect with all its importance for man's present conditions.

The great abuse to which the belief in a future life was so long addicted was a morbid interest in another life than the present. This interest, however, and its consequences were modified by emphasizing social and individual duties in the present affecting the life of the next state. But with all this, the conceptions which absorbed attention were not of the kind to keep a healthy attitude toward the present life and its more immediate duties. This may

have been due to the abandonment of the original social and ethical ideals of the Church. But whatever the cause, and it did involve the properly altruistic and human ethics of the early movement, the otherworldliness of so many centuries was such an abuse of the belief in a future life that the reaction has carried with it as fatal an indifference to its possible importance as the previous ages had maintained an exaggerated estimate of it. All the more danger must attend the establishment of communication with another world of this kind. All the past has been free from any admission of communication, human hopes not resting on this fact, but upon faith. But the present has abandoned its faith and seeks knowledge, and this can be obtained only through communication with a spiritual world. To be convinced of this tends to create a morbid interest much worse than the mediæval one in another life. It lets loose all the passions of human nature to explore that aspect of another life which it does not need and to ignore the true aspect of the belief for its illusory one. It is not communication with another and spiritual world at pleasure that we want, but reasons to believe that there is another. Nothing is more unhealthy morally than a morbid interest in communicating with our deceased friends. No doubt it has been this, however, that has kept alive the practice, and with it the phenomena which attract scientific attention. But nevertheless it is the duty of scientific men, while they recognize the importance of the subject, to discourage the emotional passion to communicate for its consolations and to attack the

problem from its higher level of indicating the meaning of the universe. I have no doubt that many people imagine that it was a personal interest that attracted my own efforts to experiments of the kind. Nothing can be more mistaken. I have no personal interest in the matter. I would not waste my time and energy in communicating with my deceased friends if I did not believe that the results threw light upon the fundamental problems of science and philosophy. I do not care a penny what the other life is like, nor for the pleasure of communicating with friends there. But I do care for the question whether my duties are commensurate with the possibilities of realizing their ideals. Nor is this view of the matter a reflection on the lack of human interest in one's friends. That may be as strong without as with communication with them. But no one should be dependent on the meagre relations which are exhibited in all alleged communications for his happiness. He only unfits himself for the actual life in which he must pass his days and years. It is only the scientific aspect of the matter that should appeal to our minds, with the ethical reflexes which it brings to our views of the world.

The value of the belief in a future life is in what it indicates about the importance of personality. It implies that nature is quite as careful of personal consciousness as it is of matter and energy. This influence of the doctrine would not have been so clearly felt or seen in the middle ages as in the present age. Antiquity felt it because, with its association of human brotherhood, the logical effect of the

belief, the doctrine was a direct assault upon the political institutions of Greece and Rome. But the middle ages had abandoned the eternity of matter and made it a contemptible thing because it was created and ephemeral. Morality and religious aspirations were associated with the eternal and permanent. But the indestructibility of matter and the conservation of energy came in to restore material things to dignity and respect, and consciousness became, with the revival of materialism, the subordinate fact of existence and value. No wonder that materialistic ethics come in to threaten civilization with the same consequences that carried Greece and Rome to their graves. Personality has no permanent value in the materialistic scheme, whether political or ethical, and it needs the belief in a future life to establish at least an equal relative value for consciousness with dead matter and its phenomena. We have been taught so long to respect personality and what is permanent that we cannot expect to retain the modern conception of ethics as based upon it, if we are to suppose that nature cares less for consciousness than it does for matter, especially when our recognized ideals place personality above impersonal phenomena. The doctrine, therefore, of a future life needs recognition, not for the possibilities of communication with a spiritual world, but for the protection of ideals that will not live without it, ideals whose value no one dare question without forfeiting the right to direct men's conduct.

It is no use to say that our duties lie right in the present and that any discussion of a future life, with

emphasis of its importance, only distorts the vision. For I am quite willing to admit the truth of the one and the liability of the other. I should agree as emphatically as any one may wish to urge it that our duties pertain directly to this life. I have discussed this in my other allusions to the subject. But we cannot forget the source to civilization of these very duties and the influences which gave them currency and effectiveness. Our morals, when they have once been instigated, partake of the nature of habit, and more especially of the influence of environment. These morals have been the product of Christian thought and teaching with the idea of a future life in view. The decline in that belief in the individual is not followed necessarily and immediately by the same decline in the community, and hence morality survives long in the social environment after it has passed in the individual, and his conduct will often reflect adaptation to it when it does not arise from an inner principle. A change in this environment invariably follows the extension of a change in fundamental beliefs. Hence we cannot expect the ideals based upon the value of personality to long survive its passage. The fact that civilization does not go to the devil on the conversion of one man to materialism is no indication that the belief in a future life has no effect in the world. We simply, as individuals, retain what our environment represents until that environment changes, when we follow it. Let the social order once accept the view that moral personality has no more permanence or value in the world than organic life, and we shall soon see whither

things will drift. In fact, some of us see very clearly tendencies which our cultured and independent neighbors do not see at all. The materialistic standard of life has so infected even those who still have an interest in a spiritual order that they do not see the fateful progress of those morals which are moving straight to social perdition.

All this, however, is no reason why we should rush pell-mell into the follies of modern spiritualism. It should only teach us frankness and honesty with regard to the real issues of all reflections on the comprehensive meaning which such an outlook for personality would offer man's hopes and efforts, and the morbid side of those interests could be rationally held in check by sober scientific investigation. It is unfortunate that even Christianity has so emphasized the personal and selfish side of salvation as to forget the social aspect of its original founder's teachings. The effect of it has been to see in it nothing but a personal boon to be sought for ourselves instead of using it merely as a means of protecting the highest ideals of social and ethical life. Until this is done the doctrine will have all the objectionable features which any selfish passion has, and nothing has brought spiritualism into more contempt than the insane passion to be always communicating with deceased friends, and asking their advice in the direction of our affairs, or consulting mediums about the stock market and our love-affairs. When it comes to this I think I could justify Providence if he bottled the human race up in Dante's *Inferno*. We need to keep such possibilities under purely scientific su-

pervision, and utilize the results of it in the same way that we utilize those of physical science. We adapt the results of physical science to our daily wants, but we do not go about investigating their mysteries for ourselves. We have no more business to make a passion of this interest in a future life than we have to make one of inquiry into radium when we are not equipped for the study of it. What we believe and know should be definitely articulated with our normal experience and made assimilable with it. We should improve the opportunities which occasion may offer to scientifically inquire into facts and make records of them, but that duty or privilege should not be interpreted as a license to live in the "supernatural." There is always a middle course in the presence of important facts, and there is no more reason for the extreme of skepticism and contempt than there is for credulity and worship. The one is as reprehensible as the other, and the scientific man who indulges in his extreme only deprives himself of the influence which he might have to direct human interest in better channels.

But if the belief in a future life has any dangers attending its maintenance, and if the habit or interest in trying indiscriminate communication with a spiritual world has any abuses to which it is exposed, these will not be prevented by laughing at the attempts to treat the matter scientifically. Such attempts, if the facts prove it or appear to prove it, will only react on the man who sneers, and result only in the forfeiture of his influence on the community. It is the duty of the qualified man to lead the

public, not to let it seek its own information in illegitimate ways. There is no excuse whatever for an aristocratic retirement from these questions simply because they happen to interest the plebs. In a democracy, where we cannot govern, we have to educate and persuade. The failure rightly to do this latter means that we shall have to adopt the political institutions of the ages which we pretend to despise. In our present social institutions the scientific man must choose between the functions of an educator and a tyrant, if he expects to have his own ideas realized. Otherwise he only obtains, but perhaps does not earn, his bread. If it be true that there is a future life, the intelligent man is the one to reveal it to us under the limitations with which it is to be accepted. It it be a question which we cannot solve, this must be as intelligently disseminated. We cannot rest in the mere *ipse dixit* of any man in regard to it. Whether true or not, the human sympathy of the scholar is the proper inheritance of the world from the scientific man, and any failure to bequeath this property will only insure the loss of one's usefulness.

We are passing through the reactionary period against the exclusive otherworldliness of the past centuries, and as it has become a mark of intelligence to disbelieve all that the religious ages held sacred, we must expect scientific Philistines to parade their peculiar wisdom as the last word of omniscience. When the materialistic cycle has run its course and civilization has ended in repeating the experience of Sodom and Gomorrah, we shall expect sober thinking

to begin again. We shall then learn what the larger view of the universe for a spiritual life means, and listen to the advice which experience has always shown us in regard to the value of the belief which may even reconcile men to a life of pain and suffering. The minister and the moralist have to meet situations in the lives of individuals which no skeptic can soothe. Stoicism is a very good thing for the man who has a healthy digestion and all the worldly goods to make him independent of nature and his fellows. But economic success is neither a security for the truth of skepticism nor a substitute for the finer moral qualities which keep the less successful from a policy of confiscation. We shall find as time passes that the social and political movements of the present age are the logical consequence of its materialism, and that the correction of them must come with that larger view of the meaning of man and his duties, which make sacrifice a virtue as well as an interest. I believe that the evidence for a future life is sufficient to make it the only rational hypothesis to account for the facts, but I do not believe that we have reached that amount of scientific proof which is necessary to make the belief general in the minds of the intellectual classes. The duty lies in further investigation, until its perplexities, which are many, have been removed. This is the necessary step in the establishment of a conviction that carries in its flux the destinies of the coming ages in their resurrection from the materialism of all our present life.

THE END.

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