MENTAL DEVELOPMENT

IN

THE CHILD AND THE RACE

METHODS AND PROCESSES

BY

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CHAPTER VI

SUGGESTION

§ 1. *General Definition*

THE rise of hypnotism in late years has opened the way to an entirely new method of mental study. The doctrine of reflexes was before largely physiological, and only pathological cases could be cited in evidence of a mechanism in certain forms of consciousness as well as out of it; and even pathological cases of extreme sensitiveness to casual suggestion from the environment or from other men did not receive the interpretation which the phenomena of hypnotic suggestion are now making possible, *i.e.* that suggestion by idea, or through consciousness, must be recognized to be as fundamental a kind of motor stimulus as the direct excitation of a sense organ. Nervous reflexes may work directly through states of consciousness, or be stimulated by them; these states of consciousness may be integral portions of such reflexes; and, further, a large part of our mental life is made up of a mass of such ideo-motor 'suggestions,' which are normally in a state of subconscious inhibition.

Without discussing the nature of the hypnotic state in the first instance, nor venturing to pass judgment in this connection upon the question whether the suggestion theory is sufficient to explain all the facts, we may yet isolate the aspect spoken of above, and discuss its general bearings in the normal life, especially of children. Of course, the question

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at once occurs, is the normal life a life to any degree of ideo-motor or suggestive reactions, or is the hypnotic sleep in this aspect of it, quite an artificial thing? Further, if such suggestion is normal or typical in the mental life, what is the nature of the inhibition by which it is ordinarily kept under — in other words, what is its relation to what we call will? Leaving this second question altogether unanswered for the present,[1] it has occurred to me to observe children, especially my own H. and E., during their first two years, to see if light could be thrown upon the first inquiry above. If it be true that ideo-motor suggestion is a normal thing, then early child life should present the most striking analogies to the hypnotic state in this essential respect. This is a field that has hitherto, as far as I know, been largely unexplored by workers in the psychology of suggestion.

It is not necessary, I think, to discuss in detail the meaning of this much-abused but, in the main, very well defined word, 'suggestion.' The general conception may be sufficiently well indicated for the present by the following quotations from authorities. They all agree on the main phenomenon, their definitions differing in the place of emphasis, according as one aspect rather than another supplies ground for a theory. I may gather them up in my own definition, which aims to describe the fundamental fact apart from theory, and is therefore better suited to our preliminary exposition. I have myself defined suggestion as "from the side of consciousness . . . the tendency of a sensory or an ideal state to be followed by a motor state,[2] in the manner typified by the abrupt entrance from without into consciousness of an idea or image, or a vaguely conscious stimu-

[1] See, however, Chap. XIII., below.

[2] *Science*, Feb. 27, 1891, where many of the observations given in this chapter were first recorded.

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lation, which tends to bring about the muscular or volitional effects which ordinarily follow upon its presence." [1]

Janet defines suggestion as "a motor reaction brought about by language or perception." [2] This narrows the field to certain classes of stimulations, well defined in consciousness, and overlooks the more subtle suggestive influences emphasized by the Nancy school of theorizers. Schmidkunz makes it: "die Herbeirufung eines Ereignisses durch die Erweckung seines psychischen Bildes." [3] This again makes a mental picture of the suggested 'event' in consciousness necessary, and, besides, does not rule out ordinary complex associations. It neglects the requirement insisted upon by Janet, *i.e.* that the stimulus be from without, as from hearing words, seeing actions, objects, etc. Wundt says: "Suggestion ist Association mit gleichzeitiger Verengerung des Bewusstseins auf die durch die Association angeregten Vorstellungen." [4] In this definition Wundt meets the objection urged against the definition of suggestion in terms of complex association, by holding down the association to a 'narrowed consciousness'; but he, again, neglects the outward nature of the stimulus, and does not give an adequate account of how this narrowing of consciousness upon one or two associated terms, usually a sensori-motor association, is brought about. Ziehen: "In der Beibringung der Vorstellung liegt das Wesen der Suggestion." [5] Here we have the sufficient recognition of the artificial and external source of the stimulation, but yet we surely cannot say that all such stimulations succeed in getting suggestive force. A thousand things suggested to us are rejected, scorned, laughed at. This is so marked a fact in current theory, especially on the pathological

[1] Cf. also *Handbook of Psychology*, II., 297.
[2] *Aut. Psych.*, p. 218.
[3] *Psych. der Suggestion.*
[4] *Hypnotismus u. Suggestion*, II. Abs.
[5] *Philos. Monatshefte*, XXIX., 1893, p. 489.

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side, that I have found it convenient to use a special phrase for consciousness when in the purely suggestible condition, *i.e.* 'reactive consciousness.'[1] The phrase 'conscious reflex' is sometimes used, but is not good as applied to these suggestive reactions; for they are cortical in their brain seat, and are not as definite as ordinary reflexes.

For our present purposes, the definition just given from my earlier work is sufficient, since it emphasizes the *movement side* of suggestion. The fundamental fact about all suggestion, — not hypnotic suggestion alone, which some of the definitions which I have cited have exclusive reference to,[2] — is, in my view, the removal of inhibitions to movement brought about by a certain condition of consciousness which may be called 'suggestibility.' The further question, what makes consciousness suggestible, is open to some debate. There are two general statements — not to elaborate a theory here, however — which are not done justice to by any of the current theories. We may say, first, that a suggestible consciousness is one in which the ordinary *criteria of belief* are in abeyance; the coefficients of reality, to use the terms of an earlier discussion of belief,[3] are no longer apprehended. Consciousness finds all presentations of equal value, in terms of uncritical reality-feeling. It accordingly responds to them all, each in turn, readily and equally. Second: this state of things is due primarily to a violent reaction or fixation of attention, resulting in its usual monoïdeism, or 'narrowing of consciousness.' For belief is a motor attitude resting upon complexity of presentation and representation. Just as soon as this mature complexity is destroyed, belief

[1] *Handbook of Psychology, Feeling and Will*, pp. 60 ff., and Chap. XII.

[2] See the section below in this chapter (§ 7) in which the main facts of hypnosis are briefly stated, and the further references to the theory of hypnotism in § 3 of the chapter on Volition, below.

[3] *Handbook*, II., Chap. VII.

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disappears, and all ideas 'become free and equal' in doing their executive work. Each presentation streams out in action by suggestion; and stands itself fully in the possession of consciousness, with none of the pros and cons of its usual claim to be accepted as real, gaining also the still greater establishment which comes from the return wave upon itself of its own motor discharge. The question of suggestion becomes then that of the mechanism of attention in working three results: (1) the narrowing of consciousness upon the suggested idea, (2) the consequent narrowing of the motor impulses to simpler lines of discharge, and (3) the consequent inhibition of the discriminating and selective attitude which constitutes belief in reality.

The truth of these general statements is thoroughly confirmed by the observation of children, in whom the general system of adjustments, which constitute the 'worlds of reality' of us adults, are not yet effected. Little children are credulous, in an unreflective sense, even to illusion. Tastes, colours, sensations generally, pains, pleasures, may be suggested to them, as is shown by the instances given in later pages.

It is, however, to the truth of the fundamental fact of normal motor suggestion found in children, that I wish to devote a large part of this chapter; and observations of reactions clearly due to such suggestion, either under natural conditions or by experiment, lead me to distinguish the varying sorts of suggestion mentioned in the following paragraphs, in what I find to be about the order of their appearance in child-life.

§ 2. *Physiological Suggestion*

By 'suggestion' is understood ordinarily ideal or ideo-motor suggestion, — the origination from without of a motor

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reaction, by producing in consciousness the state which is ordinarily antecedent to that reaction; but observation of an infant for the first month or six weeks of its life leads to the conviction that its life is mainly physiological. The vacancy of consciousness as regards anything not immediately given as sensation, principally pleasure and pain, precludes the possibility of *ideal* suggestion as such. The infant at this age has no ideas in the sense of distinct memory images. Its conscious states are largely affective. Accordingly, when the reactions which are purely reflex, and certain random impulsive movements, are excluded, we seem to exhaust the contents of its motor consciousness.

Yet even at this remarkably early s age H. was found to be in a degree receptive of suggestion, — suggestion conveyed by repeated stimulation under uniform conditions. In the first place, the suggestions of sleep began to tell upon her before the end of the first month. Her nurse put her to sleep by laying her face down and patting gently upon the end of her spine. This position itself soon became not only suggestive to the child of sleep, but sometimes necessary to sleep, even when she was laid across the nurse's lap in what seemed to be an uncomfortable position.

This case illustrates what I mean by physiological suggestion. It shows the law of physiological habit as it borders on the conscious. No doubt some such effect would be produced by pure habit apart from consciousness; but, consciousness being present, its nascent indefinite states may be supposed to have a quality of suggestiveness, which works to increase the fixedness of the habit. Yet the fact of such a colouring of consciousness in connection with the growth of physiological habit is important rather as a transition to more evident suggestion.

The same kind of phenomena appear also in adult life.

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Positions given to the limbs of a sleeper lead to movements ordinarily associated with these positions. The sleeper defends himself, withdraws himself from cold, etc. Children learn gradually the reactions upon conditions of position, lack of support, etc., of the body, necessary to keep from falling out of bed, which adults have so perfectly. All secondary automatic reactions may be classed here, the sensations coming from one reaction, as in walking, being suggestions to the next movement, unconsciously acted upon. The state of consciousness at any stage in the chain of movements, if present at all, must be similar to the baby's in the case above, — a mere internal glimmering, whose reproduction, however brought about, reinforces its appropriate reaction.

The most we can say of such physiological suggestion is, that the conscious state is always present, and that the ordinary reflexes may be subsequently abbreviated and modified.

Professor Ribot says as much as this. "When a physiological state has become a state of consciousness, through this very fact it has acquired a particular character. . . . It has become a new factor in the psychic life of the individual — a result that can serve as a starting-point to some new (either conscious or unconscious) work." And again: "Volition is a state of consciousness . . . . it marks a series, *i.e.* the possibility of being recommenced, modified, prevented. Nothing similar exists in regard to automatic acts that are not accompanied by consciousness. . . . Each state of consciousness . . . in relation to the future development of the individual, is a factor of the first order." [1] Schneider,

[1] *Diseases of Personality*, pp. 15–16. Ribot in his text, however, notes mainly the phylogenetic advantage of consciousness as memory, on which see below, Chap. IX., § 3, and Chap. X., §§ 2, 4.

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also, writing from the phylogenetic point of view, says: "All purely physiological movements serve a single definite purpose, are always the same; psychological movements, on the contrary, have the peculiarity that they serve *different* purposes, follow upon quite different stimulations, and adapt themselves to circumstances by combination and modification. . . . Otherwise we would not have any consciousness, for there would be no use for it. . . . So in connection with every movement which is accompanied by a phenomenon of consciousness, we may hold, that this phenomenon of consciousness is really necessary (*wirklich nöthig ist*) for the determination of the movement."[1] A more positive pronouncement on the presence of consciousness in all reactions to which the term 'suggestion' may be applied is that of Moll. He says: "*There is no suggestion without consciousness.* It makes no difference whether the suggestion is made through imitation or by a command. . . . I must insist in opposition to Mendel that there is consciousness of what is suggested, and that this is the main point in the matter. A suggestion without consciousness is to me inconceivable."[2]

In hypnotic experimentation, the influence of such subconscious or physiological suggestions is now generally recognized under the general doctrine of hyperæsthesia of the senses. Ochorowicz calls the general phenomenon of suggestion *ideoplasty*,[3] and when no clear idea is necessary to the effect, as in my 'physiological' suggestion, he speaks of 'physical ideoplasty.' He says: "We have *ideoplasty* whenever the thought alone of any functional modification determines such functional modification . . . the thought of yawning itself produces yawning, etc."[4]

[1] *Der thierische Wille*, p. 53. [2] *Hypnotism*, p. 267 (italics his).
[3] Ochorowicz, *Mental Suggestion*, p. 25. (So the translator; 'idioplasy' is perhaps better.) [4] *Ibid.* 354–5.

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A particular observation made upon my child E. during her second year may serve to make clear this first stage of suggestion. She learned to go to sleep sucking her bottle, the rubber of which was left in her mouth while she slept. Now, at any sound, touch, or other sudden stimulation, such as the flaring up of the light, she began with more or less vigour to suck the bottle, giving no other sign of awaking whatever, and really not awaking, but only passing from a deeper sleep, or less consciousness, to a lighter sleep, or more consciousness. Now, as I interpret it, the stimulus, arousing more brain process, heightened the sleep or dream consciousness, brought out the sensations in the lips about the rubber, and these sensations by *physiological suggestion* set up the sucking movements. These movements in turn had their habitual influence in sending the child off into deep sleep again. Then, later, it is probable that even the lip sensations were not necessary; but the increased dynamogeny of the increased sensory consciousness simply poured itself into the lip-movement channels, since they were associated last and always with the conditions of sleep.

Liébault was brought to recognize this phenomenon by the possibility of suggesting purely physical functions successfully to very young children.[1]

We may adopt a diagrammatic representation of the elements of a motor reaction at this point for convenience, calling it the 'motor square.' Figure IX. presents a square of which each corner represents a physiological process, as it may occur with or without consciousness, as follows: —

Let *sg* = suggestion (sensory process); *mp* = seat of motor process; *mt* = movement of muscle; *mc* = consciousness of movement (kinæsthetic process). The sides of the square

[1] See illustrative cases given in earlier editions of the work, pp. 113 f., and also in Ochorowicz, *loc. cit.*, p. 247 (with his context).

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are connections between the seats of these processes. The relation of the elements of the 'motor square' to other cere-

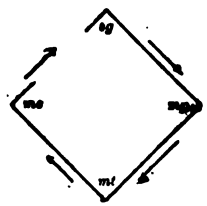

FIG. IX. — 'MOTOR SQUARE.'

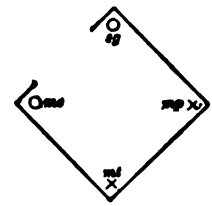

FIG. X. — PHYSIOLOGICAL SUGGESTION.

bral elements, and the relation of this scheme to others proposed by Lichtheim, Kussmaul, etc., are spoken of later.[1]

The stimulus *sg* (Fig. X., in which crosses at the corners indicate nervous processes only, and circles indicate vague states of consciousness) starts the motor process *mp;* it leads to movement, *mt*, which is reported to consciousness, *mc*. The line between *sg* and *mc* is broken, because at this stage in infancy, associations are only just beginning to be formed between a feeling of muscular movement and its stimulating sensation.

The cases of 'physiological suggestion,' as now described,[2] tend, inasmuch as they involve elements of consciousness, to take more definite form, as 'sensori-motor suggestions,' to which we may now turn.

§ 3. *Sensori-motor Suggestion*

These cases of suggestion may again be best illustrated from the phenomena of infancy, before a close definition is attempted. And first we may note some instances of what may be called *general suggestions* of this sort.

[1] Below, Chap. XIII., § 3.

[2] Among confirmatory observations sent me, those of A. G. Parrott, of Farmington, Conn., are varied and careful.

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I. *General. — Various Sleep Suggestions.* — From the first month on, there was a deepening of the hold upon the child H. of the early method of inducing sleep. The nurse, in the meantime, added two nursery rhymes. Thus position, pats, and rhyme sounds were the suggesting stimuli. Not until the third month, however, was there any difference noticed when the same suggestions came from other persons. I myself learned, during the fourth month, to put her to sleep, and learned with great difficulty, though pursuing the nurse's method as nearly as possible. Here, therefore, was a sleep suggestion from the *personality* of the nurse, — her peculiar voice, touch, etc., — of which mention is made more fully below. At this time I assumed exclusive charge of putting H. to sleep, in order to observe the phenomena more closely. For a month or six weeks I made regular improvement, reducing the time required from three-quarters of an hour to half an hour, finding it easier at night than at midday. This indicated that darkness had already become an additional sleep suggestion, probably because it shut out the whole class of sensations from sight, thus reducing the attention to stimulations which were monotonous.[1]

In the following month (sixth), I reduced the time required, day or night, to about a quarter of an hour, on an average. In this way I found it possible to send her off to sleep at any hour of the night that she might wake and cry out.

[1] I found by accident, in this connection, the curious fact that a single flash of bright light would often put H. immediately to sleep when all other processes were futile. In her fifth month I despaired one evening, after nearly an hour's vain effort, and lighted the gas at a brilliant flash unintentionally. She closed her eyes by the usual reflex, and did not open them again, sleeping soundly and long. I afterwards resorted to this method on several occasions, carefully shielding her eyes from the direct light rays, and it generally, but not always, succeeded. Shortly after reporting this in the columns of *Science* (Feb. 27, 1891), I heard from a prominent psychologist that his wife could confirm the observation from experience with her own children.

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I then determined to omit the patting, and endeavour to bring on sleep by singing only. The time was at first lengthened, then greatly shortened. I now found it possible (sixth to seventh month) to put her to sleep, when she waked in the dark, by a simple refrain repeated monotonously two or three times. In the meantime she was developing active attention, and resisted all endeavours of her nurse and mother, who had been separated from her through illness, very stubbornly for hours, while she would go to sleep for myself, even when most restless, in from fifteen to thirty minutes. This result required sometimes firm holding down of the infant and a determined expression of countenance.

At the end of the year, this treatment being regular, she would voluntarily throw herself in the old position at a single word from me, and go to sleep, if only patted uniformly, in from four to ten minutes. This continued through the second year; even when she was so restless that her nurse was unable to keep her from gaining her feet, and when she screamed if forced by her to lie down. The sight of myself was sufficient to make her quiet; and in five minutes, rarely more, she was sound asleep. I found it of service, when she was teething and in pain, to be able thus to give her quiet, healthful sleep.

This illustrates, I think, as conclusively as could be desired, the passage of purely physiological over into sensory suggestion; and this is all that I care, in this connection, to emphasize.

Food and Clothing Suggestion. — H. gave unmistakable signs of response to the sight of her food-bottle as early, at least, as the fourth month, probably a fortnight earlier. The reactions were a kind of general movement toward the bottle, especially with the hands, a brightening of the face, and crowing sounds. It is curious that the rubber on the bottle seemed

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to be the point of identification, the bottle being generally not responded to when the rubber was removed. This was also true of E., to whom the rubber alone without the bottle became a remarkable quieting agent, as I have already mentioned. The sight of the bottle, also, was suggestive much earlier than the touch of it with her hands.

H. began to show a vague sense of the use of her articles of clothing about the fifth month, responding at the proper time, when being clothed, by ducking her head, extending her hand or withdrawing it. About this time she also showed signs of joy at the appearance of her mittens, hood, and cloak, before going out.

II. *Suggestions of Personality.* — It was a poet, no doubt, who first informed us that the infant inherits a peculiar sensibility for its mother's face, — a readiness to answer it with a smile. This is all poetic fancy. It is true that the infant does smile very early; E. clearly smiled at me on her seventh day and at her mother on the ninth. But it is probably a purely reflex indication of agreeable organic sensation. When the child does begin to show partiality for mother or nurse, it is because the kind treatment it has already experienced in connection with the face has already brought out the same smile before in this organic way; the mother's face, that is, grows to suggest the smile. At first it is not the face alone, but the personality, the *presence*, to which the child responds; and of more special suggestion, the voice is first effectual, then touch, as in the case of sleep above, and then sight. Such suggestions are among the most important of infancy, serving as elements in the growth of the consciousness of self and of external reality, as we shall have occasion to see later on.

Delaying for the moment the further analysis of this remarkable class of suggestions, the question occurs, are not

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these so-called 'suggestions' simply cases of the association of ideas? I think we are warranted in answering, 'No'; for the reason that it is not an associated idea that is brought up; unless we are prepared to enlarge the ordinary conception of association to include phenomena of the vaguest psychological meaning. The muscular movement is produced without the production of an idea of that movement, largely through native pathways of discharge, or by the production of organic conditions, such as sleep, which involve muscular conditions. Can we say that the sleep suggestions first bring up an idea or image of the sleep condition, or that the bottle brings up an idea of the movements of grasping, or even of the sweet taste? I think the case is more direct. The energy of stimulation passes over into the motor reaction through the medium of the conscious state; although the conscious state is undoubtedly enveloped in an envelope or fringe of organic and muscular sensation which is of marked hedonic quality. Further, as will appear clearer below, it is not an association plus a suggestion, or an association plus an association, as current atomistic doctrines of association would lead us to expect. We cannot say that pleasure or pain always intervenes between the present state of consciousness and the motor reaction, *i.e.* mother's face, pleasure recalled, expression of pleasure, or present bottle, sweet taste, movements to reach. I believe all this is quite artificial and unnatural. The most that can be said is that the conscious state as a whole, with its hedonic colouring, serves to bring about a modification of the reaction, whether it be a native one, or one established by association or habit.[1]

The elements are as before for physiological suggestion, except that the reaction begins with a clearly conscious

[1] Ochorowicz describes the same class of phenomena as 'ideorganic associations based on habitude,' *Mental Suggestion*, p. 232.

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process at *sg* (Fig. XI.), and the child is getting associations between *sg* and *mc*.

The phenomenon of 'personality-suggestion,' to which we may now return, is so important in the growth of the child's consciousness of himself, of his belief in realities about him, and of his social life, that it should be closely scrutinized. This is the more important because such an analysis has never been made upon the basis of actual observation of children. The treatment which follows is based upon most

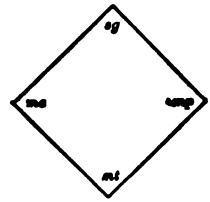

FIG. XI. — SENSORI-MOTOR SUGGESTION

detailed and watchful inspection of H. and E., together with careful but less intimate observation of two other young children, one of them a boy, with especial reference to the development of the sense of their own relation to the persons who moved about them.[1]

As outcome of this kind of observation, and with no intermixture of interpretation, which may be now left over, I find no less than four phases of attitude involved in what afterwards becomes the so-called 'social sense' in the child. I say 'afterwards becomes,' because all of them belong in the 'projective'[2] stage of the child's sense of self, *i.e.* they all go to furnish data which he afterwards appropriates to himself as 'subject.' These four phases are indescribably subtle

[1] Some observations on the presence of something similar to this class of suggestions in animals have already been given above, Chap. I., § 3.

[2] See above, Chap. I., § 3.

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and indescribably intermixed in the subjective *ensemble* of the growing child. So much so that I shall not attempt in all cases to cite actual situations to justify each point: rather, the view I take rests upon innumerable situations, and their differences from one another. Just as one is utterly unable to give examples of his own phases of attitude expressive of the *nuances* of meaning which the actions of others bring out of him, so entirely a matter of insight and intuition must his sense be of what is in the child's mind in the various social situations which confront him from day to day. Nevertheless, the drift of the infant's development is very clear to the sympathetic observer; and I think the instances which I cite will be sufficient to excite in all those familiar with little children a sense of the truth of the general portrayal.

1. The first thing in the environment of the infant which it notes — apart from the ordinary fixed and static stimulations, such as sounds, lights, etc. — are *movements*. The first attempts of the infant at anything like steady attention are directed to moving things — a swaying curtain, a moving light, a stroking touch, etc. And further than this, the moving things soon become more than objects of curiosity; these things are just the things that affect him for pleasure or pain. It is movement that brings him his food, movement that regulates the stages of his bath, movement that dresses him comfortably, movement that sings to him and rocks him to sleep. In that complex of sensations, the nurse, the feature of moment to him, of immediate satisfaction, or redemption from pain, is this: movements come to succour him. Change in his bodily feeling is the vital requirement of his life, for by it the rhythm of his vegetative existence is secured; and these changes are accompanied and secured always in the moving presence of the one he sees and feels about him. This, I take it, is the first and great association

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of the infant with other persons, the earliest reflection in his consciousness of the world of personalities about him. At this stage his 'personality-suggestion' is this *pain-movement-pleasure* psychosis: to this he reacts with a smile, and a crow, and a kick.[1]

Many facts tend to bear us out in this position. My child cried when I handled her in the dark, although I imitated the nurse's movements as closely as possible. She tolerated a strange presence as long as it remained quietly in its place: but let it move, and especially let it usurp any of the pieces of movement-business of the nurse or mother, and her protests were emphatic. The movements tended to bring the strange elements of a new face into the vital association, pain-movement-pleasure, and so to disturb its familiar course: this constituted it a strange 'personality.'

It is astonishing, also, what new accidental elements may become parts of this association. Part of a movement, a gesture, a peculiar habit of the nurse, may become sufficient to give assurance of the welcome presence and the pleasures which the presence brings. Two notes of my song in the night stood for my presence to H., and no song from any one else could replace it. A lighted match stopped the crying of E. for food,[2] although it was but a signal for a process of food-preparation lasting several minutes: and a simple light never stopped her crying under any other circumstances. So with this first start in the sense of personality we find also reasons for the differences of different personalities; but this constitutes the next phase.

2. It is evident that the sense of another's presence thus

[1] Undoubtedly this association gets some of its value from the other similar one in which the movements are the infant's own. It is by movement that he gets rid of pain and secures pleasure.

[2] Observations made in her fourteenth week.

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felt in the infant's consciousness rests, as all associations rest, upon *regularity* or repetition: his sense of expectancy is aroused whenever the chain of events is started. And this is embodied at this stage largely in two indications: the face and the voice.[1] But it is easy to see that this is a very meagre sense of personality; a moving machine which brought pain and alleviated suffering would serve as well. So the child begins to learn in addition the fact that persons are in a measure individual in their treatment of him, and hence that personality has elements of uncertainty or *irregularity* about it. This growing sense is very clear to one who watches an infant in its second half-year. Sometimes its mother gives a biscuit, but sometimes she does not. Sometimes the father smiles and tosses the child; sometimes he does not. And the child looks for signs of these varying moods and methods of treatment. Its new pains of disappointment arise directly on the basis of that former sense of regular personal presence upon which its expectancy went forth.

This new element of the child's 'social sense' becomes, at one period of its development, quite the controlling element. Its action in the presence of the persons of the household becomes hesitating and watchful. Especially does it watch the face for any expressive indications of what treatment is to be expected; for facial expression is now the most regular as well as the most delicate indication. It is unable to anticipate the treatment in detail, and it has not of course learned any principles of interpretation of the conduct of mother or father lying deeper than the details. It is just here, I think, that imitation arises, as will appear later,[2] and becomes so

[1] I have special observations on H.'s responses to changes in facial expression up to the age of twenty months. Her changes of attitude indicated most subtle sensibility to these differences — and normal children all do, I think. Animals show the same remarkable 'projective intuition,' if the expression be allowed.

[2] Below, Chap. XI., § 3.

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important in the child's life. This is imitation's opportunity. The infant waits to see how others act, because its own weal and woe depends upon this 'how'; and inasmuch as it knows not what to anticipate, its mind is open to every suggestion of movement. Its attention dwells upon details, and by the regular principle of motor reaction which imitation expresses, it acts these suggestions out.

All through the child's second year, and longer, his sense of the persons around him is in this stage. The incessant 'why?' with which he greets any action affecting him, or any information given him, is witness to the simple puzzle of the apparent capriciousness of persons. Of course he cannot understand 'why': so the simple fact to him is that mamma will or won't, he knows not beforehand which.

But in all this period there is germinating in his consciousness — and this very uncertainty is an important element of it — the seed of a far-reaching thought. His sense of persons — moving, pleasure-or-pain-giving, uncertain but self-directing, persons — is now to become a sense of *agency*, of power, which is yet not the power of the regular-moving door on its hinges or the rhythmic swinging of the pendulum of the clock. The sense of personal actuation, 'projective agency,' is now forming, and it again is potent for still further development of the social consciousness. For he begins to grow capricious himself, and to feel that he can be so whenever he likes. Suggestion begins to lose the regularity of its working; or to become negative and 'contrary' in its effects. At this period it is that obedience begins to grow hard, and its meaning begins to dawn upon the child as the great reality. It means the subjection of his own agency, his own liberty to be capricious, to the agency and liberty of some one else.

3. With all this, the child's distinction between and among

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the persons who constantly come into contact with him grows on apace, in spite of the element of irregularity of the general fact of personality. As before he learned the difference between one presence and another, — a difference which was overcome in the discovery that every presence is of irregular value; so now he learns the difference between one *character* and another — the regularity of personal agency, as opposed to the regularity of mere associations of movement and to the irregularity of the apparently capricious. Every character is more or less regular in its irregularity. It has its tastes and modes of action, its temperament and type of command. This the child learns late in the second year and thereafter. He behaves differently when the father is in the room. He is quick to obey one person, slow to obey another. He cries aloud, pulls his companions, and behaves reprehensibly generally, when no adult is present but his nurse, who has no authority to punish him. This stage in his 'knowledge of man' leads to those active differences of conduct on his part which make imitation, and the discipline of obedience, a sword with two edges, one for good and one for evil. This general appreciation of character, together with the full-blown social feeling, which constitutes the fourth phase in my division, may be left for later discussion, as well as the part played by this kind of suggestion in the genesis of the moral sense.[1]

To sum up: 'personality-suggestion' is the general term for the stimulations to activity which the child gets from persons. It develops through three or four roughly distinguished 'stages,' all of which illustrate what I have called his 'projective' sense of personality; namely, 1. a bare distinction, on the ground of peculiar pain-movement-pleasure complexes, *of persons from things;* 2. a sense of the irregu-

[1] Below, Chap. XI., § 3.

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larity or capriciousness of the behaviour of these persons, which is the germ of his *sense of agency*, as opposed to the regular causal series of conditions which things go through; 3. his distinction, vaguely felt but reacted to with great exactness, between the characteristic modes of behaviour or *personal character* of different persons; 4. after his sense of his own subject-agency arises by a process of imitation, he gets what is really *social feeling:* the sense of others as 'ejective,' that is, as like and equal to himself.[1]

III. *Deliberative Suggestion.* — By 'deliberative suggestion' I mean a state of mind in which co-ordinate sense-stimuli meet, confront, oppose, further, one another. Yet I do not mean 'deliberation' in the full-blown volitional sense, but *suggestion* that appears deliberative, while still inside the reactive consciousness and still representing a single reaction upon a single state of consciousness. In real deliberation, as appears below, there are two or more pictured alternatives, upon the conscious co-ordination of which action follows. But here the different elements are ingredients in a single sensory complex, — one suggestion, — and the motor reaction waits upon the issue of the whole. The competition of processes is probably in large measure subcortical. So the state is still to be classed as sensori-motor, not ideo-motor, since it does not require intelligent memory and representation. The last three months of the child's first year are, I

[1] The reader may notice in this connection the section below on 'bashfulness,' which is found to be a native organic response to the presence of persons, considered as 'projects' of a personal kind. It is curious to note that besides general gregariousness which many animals show in common, they have in many instances special sense indications of the presence of creatures of their own kind or of other kinds. Dogs and cats each recognize both dogs and cats by *smell*. Horses seem to be guided by *sight*. Fowls are notoriously blind to shapes of fowls, but depend on the cries which they *hear* of their kind or their young. Experiments seem to show that many of these responses are probably not congenital. (See Morgan, *Habit and Instinct*.)

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think, clearly given over to this kind of consciousness. Motor stimulations have multiplied, the emotional life is budding forth in a variety of promising traits, the material of conscious character is present; but the 'ribs' of mental structure may still be seen through, response answering to appeal in a complex but yet mechanical way. The child lacks self-consciousness, self-decision, self in any developed form.

As an illustration of what I mean, I may record the following case of deliberative suggestion from H.'s thirteenth month: it was more instructive to me than whole books would be on the theory of the conflict of impulses. When about eight months old, H. formed the peculiar habit of suddenly scratching the face of her nurse or mother with her nails. It became fixed in her memory, probably because of the unusual facial expression of pain, reproof, etc., which followed it, until the close proximity of any one's face was sufficient suggestion to her to give it a violent scratch. In order to break up this habit, I began to punish her by taking at once the hand with which she scratched and 'snapping' her fingers with my own first finger hard enough to be painful. For about four weeks this seemed to have no effect, probably because I only saw her a small part of the time, and only then did she suffer the punishment. But I then observed, and those who were with her most reported, that she only scratched once at a time, and grew very solemn and quiet for some moments afterwards, as if thinking deeply; and soon after this climax was reached she would scratch once impulsively, be punished, and weep profusely, then become as grave as a deacon, looking me in the face. I would then deliberately put my cheek very close to her, and she would sit gazing at it in 'deep thought' for two or even three minutes, hardly moving a muscle the whole time, and then either suddenly scratch my face and be

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punished again, or turn to something (noise, object, watch-chain, etc.) which I was careful enough to provide in order to aid her by drawing off the attention. Having scratched, she began to cry, in anticipation of the punishment. Gradually the scratching became more rare. She seldom yielded to the temptation after being punished, and so the habit entirely disappeared. I may add that her mother and myself endeavoured to induce a different reaction by taking the child's other hand and with it stroking the face which she had scratched. This movement in time replaced the other completely, and the soft stroking became one of her most spontaneous expressions of affection.[1]

Now the first act of scratching was probably accidental, one of the spontaneous reactions or physiological suggestions so common with an infant's hands; it passed, by reason of its peculiar associations, into a sensori-motor reaction whenever the presence of a face acted as suggestion, — so far a strong direct stimulus to the motor centres. Then came the pain of punishment, — a stimulus to the inhibition on the next occasion, not by exciting a clear memory, but by working itself directly into the suggesting psychosis, and thus reducing the motor tendency. For a time the tendency remained strong enough, however, to cause the reaction; then there followed an apparent balance between the two, and finally the pain element predominated in the suggestion, and the reaction was permanently inhibited. The stroking reaction gained all the strength of violent and repeated association with the elements of this mental conflict, and was thus soon fixed and permanent.

Taking this as a typical case of 'deliberative suggestion,' — and I could instance many others from H.'s life history

[1] A somewhat similar action by a boy of nine months has been reported to me by Rev. C. H. Huestis of Barrington, Nova Scotia.

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and from E.'s, — two inferences may be brought out in passing: *there is nothing here that requires volition*, meaning by 'volition' a new influence of any kind, — active consciousness; if we do call it so, we simply apply a different term to phenomena which in their simplicity we call by other names. And, second, *suggestion is as original a motor stimulus as pleasure and pain.* Here they are in direct conflict. Can we say that H. balanced the pleasure of scratching and the pain of punishment, and decided the case on this egoistic basis? What pleasure did the scratching have more than any other muscular exercise? It was simply a sensori-motor habit which the pain inhibition tended to break up.

So also, apart from pathological *aboulia*, which is described later on, we find a corresponding condition in adult life. As I have said elsewhere, "there is a state of conflict and hindrance among presentations which is mechanical in its issue, . . . so states of vexation, divided counsel, conflicting impulse, and hasty decision against one's desire for deliberate choice. We often find ourselves drawn violently apart, precipitated through a whirl of suggested courses into a course which we feel unwilling to acknowledge as our own." [1] Many of the conditions of deliberation are there, but not the fact of it.

§ 4. *Ideo-motor Suggestion*

By ideo-motor suggestion I mean the condition in which the stimulus is a clearly pictured idea, a presentation or object with all its 'meaning,' or a revived image of memory or imagination.

[1] *Handbook*, II., p. 299. This kind of complex suggestion, however, undoubtedly serves to give a ready organic basis for the earlier and more obscure acts of volition, which are described later on (Chap. XIII., § 4).

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Imitation.[1] — For a long period after the child has learned to use all his senses, and after his memory is well developed, he lacks conscious imitation entirely. I have been quite unable with my children to confirm the results of Preyer, who attributes imitation to his child at the age of three to four months.

In support of the assertion that imitation is rather late in its rise, the following experiences may be reported. As a necessary caution, the rule was made that no single performance should be considered real imitation unless it could be brought out again under similar circumstances. This rule is necessary, I think, merely for caution, since the 'copy' set for imitation is likely to be some simple movement of lips, hands, etc., which the child has made himself before, and is likely to make again. It is possible also from the mere fact of dynamogeny that the motor discharge in shedding itself outward would tend in a general way to find its most permeable native pathway toward the muscles which repeat the copy, since the movements are natural and easy. At any rate, such cases, if they exist, shade up gradually into conscious imitations.[2]

It is probable, therefore, that cases of imitation recorded as happening as early as the third month are merely coincidences. For example, I recorded an apparent imitation by H., of closing the hand, as late as May 22 (beginning of the ninth month), but afterwards I wrote, "experiment not confirmed with repeated trials running through four succeeding days." H.'s first clear imitation was on May 24, in knocking a bunch of keys against a vase, as she saw me do

[1] In this chapter the word 'imitation' is used to denote 'conscious' social imitation — its usual popular sense.

[2] See the remarks on the question of 'instinctive imitation,' below, Chap. XII., § 2.

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it, in order to produce the bell-like sound. This she repeated over and over again, and tried to reproduce it a week later, when, from lapse of time, she had partly forgotten how to use the keys. But on the same day, May 24, other efforts to bring out imitation failed signally, *i.e.* with more or less articulate sounds, movements of the lips (Preyer's experiments), and opening and closing of the hands. Ten days later, however, she imitated closing the hand on three different occasions. And a week afterward she imitated movements of the lips and certain sounds, as *pa*, *ma*, etc.[1] From this time forward the phenomenon seemed extended to a very wide range of activities, and began to assume the immense importance which it always comes to have in the life of the young child.

When the imitative impulse does come, it comes in earnest. For many months after its rise it may be called, perhaps, the controlling impulse, apart from the ordinary life processes. As a phenomenon, it is too familiar to need description. Its importance in the growth of the child's mind is largely in connection with the development of language and of voluntary movement generally.

The phenomena may be divided into two general classes, called *simple imitation* and *persistent imitation*.[2] By 'sim-

[1] The majority of recorded observations agree in making vocal imitations later than visual-movement imitations. Egger, *loc. cit.*, p. 8; Tracy, *Psychology of Childhood*, p. 57 (for citations); Stevenson, *Science*, March 3, 1893. The first vocal imitation of my other child, E., was observed in her eleventh month, when she tried to say 'tick,' in reference to the clock, after her mother, together with '*ps*' for 'pussy,' and '*pŏ*' for 'pop.'

[2] This is akin to Preyer's distinction between 'spontaneous' and 'deliberate' imitation. He is wrong in making both classes voluntary. The contrary is proved for spontaneous imitation by the fact that many elements of facial expression are never acquired by blind children. We could hardly say that facial expression was a voluntary acquisition, however gradually it may have been acquired. See Preyer, *Senses and Will*, p. 293.

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ple' imitations reactions are characterized, in which the movement does not imitate well, but is the best the child can do. He does not try to improve by making a second attempt. This is evidently a case of simple sensori-motor suggestion, and is peculiar psychologically only because of the more or less remote approximation the reaction has to the model that the child copies.

The reaction at which imitative suggestion aims is one which will *reproduce the stimulating impression*, and so tend to perpetuate itself. When a child strikes the combination required, he is never tired working it. H. found endless delight in putting the rubber on a pencil and off again, each act being a new stimulus to the eye. This is specially noticeable in children's early efforts at speech. They react all wrong when they first attack a new word, but gradually get it moderately well, and then sound it over and over in endless monotony. The essential thing, then, in imitation, over and above simple ideo-motor suggestion, is that *the stimulus starts a motor process which tends to reproduce the stimulus and, through it, the motor process again.* From the physiological side we have a *circular activity* — sensor, motor; sensor, motor: and from the psychological side we have a similar circle — reality, image, movement; reality, image, movement, etc.

The square to the left (Fig. XII.) is the first act of imitation; the movement (*mt*) now stimulates (dotted line *a*) the eye again (*sg'*), giving the second square, which by its movement (*mt'*) furnishes yet another stimulus (dotted line *a'*); and so on.

By 'persistent imitation' is meant the child's effort, by repetition, to improve his imitations. Its extreme importance justifies its separate discussion in a later place.[1]

[1] Chap. XIII., § 2. The general discussion of the position of imitation in the mental life, especially its phylogenetic value, is reserved for later chapters (Chaps. IX.–XIII.).

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Surveying the ground that we have gone over so far in this chapter, the progress of suggestion may be seen by the following brief definitions: —

1. *Physiological suggestion* is the tendency of a reflex or secondary automatic process to get itself associated with and influenced by stimulating processes of a physiological

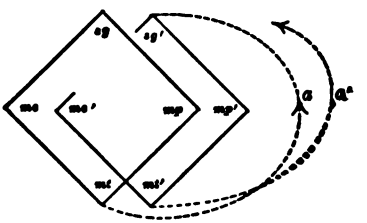

FIG. XII. — IMITATION

and vaguely sensory sort. Perhaps the plainest case of it, on a large scale in animal life, is seen in the decay of instincts when no longer suited to the creature's needs and environment.

2. *Sensori-motor and ideo-motor suggestion* is the tendency of all nervous reactions to adapt themselves to new stimulations, both sensory and ideal, in such a way as to be more ready for the repetition or continuance of these stimulations.

3. *Deliberative suggestion* is the tendency of different competing sensory processes to merge in a single conscious state with a single motor reaction, illustrating the principles of nervous summation and arrest.

4. *Imitative suggestion* is the tendency of a sensory or ideal process to maintain itself by such an adaptation of its discharges that they reinstate in turn new stimulations of the same kind.

Whether any simpler formulation of these partial statements may be reached, is a question which may be delayed

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CHAPTER XII

Conscious Imitation (concluded)

§ 1. *Classification*

It is possible, on the basis of the preceding developments, to lay out a scheme of notions and terms to govern the discussion of the whole matter of imitation. This has been the 'loose joint' in many discussions; the utter lack of any well-defined limits set to the phenomena in question. Tarde practically claims all cases of organic or social resemblance as instances of imitation, overlooking the truth, as one of his critics takes pains to point out, that two things which resemble each other may be common effects of the same cause! Others are disposed to consider the voluntary imitation of an action as the only legitimate case of imitation. This, we have seen, has given rise to great confusion among psychologists. We have reason to think that volition requires a finely complex system of copy elements, whose very presence can be accounted for only on the basis of earlier organic, or certainly ideo-motor, imitations. Further, it is the lower, less volitional types of mind that simple imitation characterizes, the undeveloped child, the parrot, the idiot, the hypnotic, the hysterical. If again we say, with yet others, that imitation always involves a presentation or image of the situation or object imitated, — a position very near the popular use of the term, — then we have great difficulty in accounting for the absorption and reproduction of subconscious, vaguely present

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stimulations; as, for example, the acquisition of facial expression, the contagion of emotion, the growth of style in dress and institutions — what may be called the influence of the 'psychic atmosphere.'

I think we have found reason from the analysis above, to hold that our provisional definition of imitation is just; an imitative reaction is one which tends normally to maintain or repeat its own stimulating process. This is what we find the nervous and muscular mechanism suited to, and this is what we find the organism doing in a progressive way in all the types of function which we have passed in review. If this is too broad a definition, then what we have traced must be given some other name, and imitation applied to any more restricted function that can be clearly and finally marked out. But let us give no rein to the fanciful and strained analogies which have exercised the minds of certain writers on imitation.

Adhering, then, to the definition which makes of imitation a 'circular' process, we may point out its various 'kinds,' according to the degree in which a reaction of the general type has, by complication, abbreviation, substitution, inhibition, or what not, departed in the development of consciousness from its typical simplicity. We find, in fact, three great instances of function, all of which conform to the imitative type. Two of these have already been put in evidence in detail; the third I am going on to characterize briefly in the following section under the phrase 'plastic imitation.'

First: the organic reaction which tends to maintain, repeat, reproduce, its own stimulation, be it simple contractility, muscular contraction, or selected reactions which have become habitual. This may be called *biological* or *organic imitation*. Under this head fall all cases lower down than the conscious picturing of copies; lower down in the sense of not

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involving, and never having involved, for their execution, a conscious sensory or intellectual suggesting stimulus, with the possibility of its revival as a memory. On the nervous side, such imitations may be called *subcortical;* and in view of another class mentioned below, they may be further qualified as *primarily subcortical.*

These 'biological' imitations are evidently first in order of development, and represent the gains or accommodations of the organism made independently of the conscious picturing of stimulations and adaptation to them. They serve for the accumulation of material for conscious and voluntary actions. In the young of the animals, their scope is very limited, because of the complete instinctive equipment which young animals bring into the world; but in human infants they play an important part, as the means of the gradual reduction to order and utility of the diffused motor discharges of the new-born. I have noted its presence under the phrase 'physiological' suggestion[1] in another place. It is under this head that the so-called 'selective' function of the nervous system finds its first illustration.

Second: we pass to *psychological, conscious,* or *cortical* imitations. The criterion of imitation — the presence of a copy to be aimed at — is here fulfilled in the form of conscious presentations and images. The copy becomes consciously available in two ways: first, as presentation, which the imitative reaction seeks to continue or reproduce (as the imitation of words heard, movements seen, etc.); and second, as memory. In this latter case there arises complexity in the 'copy system,' with desire, in which there is consciousness of the imitative tendency as respects an agreeable memory copy; and with the persistence of such a copy, and its partial repression by other elements of memory, comes

[1] Above, Chap. VI., § 2.

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volition. We find, accordingly, two kinds of psychological or cortical imitation, which I have called respectively 'simple' and 'persistent' imitation. Simple imitation is the sensori-motor or ideo-motor suggestion which tends to keep itself going by reinstating its own stimulation; and persistent imitation is the 'try-try-again,' experience of early volition, to be taken up in more detail below.[1]

Third: a great class of facts which we may well designate by the term 'plastic' or 'secondarily subcortical' imitations, to which more particular attention may now be given.

§ 2. *Plastic Imitation*

This phrase is used to cover all the cases of reaction or attitude, toward the doings, customs, opinions of others, which once represented more or less conscious adaptations either in race or in personal history, but which have become what is ordinarily called 'secondary automatic' and subconscious. With them are all the less well-defined kinds of response which we make to the actions, suggestions, etc., of others, simply from the habit we are in, by heredity and experience, or conforming to social 'copy.' Plastic imitation represents the general fact of that normal *suggestibility* which is, as regards personal *rapport*, the very soul of our social relationships with one another.

These cases come up for detailed discussion in the later volume. They serve to put in evidence the foundation facts of a possible psychology of masses, crowds, organized bodies generally. They may be readily explained by one or both of two principles — both really one, that of Habit. The principle of 'lapsed links,' already explained, applies to cases of conventional conformity, or custom, which is but an

[1] Cf. Chap. XIII.

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expression for abbreviated processes of social imitation. This accounts for the influence of the old, the venerated, the antique, upon mankind. The other principle is the application of habit itself to imitation, whereby absorption by imitation has become the great means, the first resort of consciousness, in the presence of new kinds of experience. We have become used to getting new accommodations, fine outlets for action and avenues of happiness, by taking up new thoughts, beliefs, fashions, etc. This accounts for the tyranny of novelty in all social affairs. So in these two principles, both exhibitions of the one law of imitation, we reach the two great forces of social life, conservatism and liberalism. So we find under this heading such fundamental facts as the social phenomena of contagion, fashion, mob-law, which Tarde and Sighele so well emphasize, the imitation of facial and emotional expression, moral influence, organic sympathy, personal *rapport*, etc., all matters set aside for later treatment. The term 'plastic' serves to point out the rather helpless condition of the person who imitates, and so interprets in his own action the more intangible influences of his estate in life.

The general character of plastic imitation may be made clearer if we give attention to some of its more obscure instances, and assign them places in the general scheme of development.

The social instances noticed at length by Tarde, and summarized under so-called 'laws,' are easily reduced to the more general principles now stated. Tarde enunciated a law based on the fact that people imitate one another in thoughts and opinions before they do so in dress and customs, his inference being that 'imitation proceeds from the internal to the external.' So far as this is true it is only partially imitation. Thoughts and opinions are imitated because they

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are most important, and most difficult to maintain for oneself. And it is only a result of similar thought that action should be similar, without in all cases resorting to imitation to account for this last similarity. But the so-called facts are not true. The relatively trivial and external things are most liable to be seized upon. A child imitates persons, and what he copies most largely are the personal points of evidence, so to speak; the boldest, most external manifestations, the things that he with his capacity is most likely to see, not the inner essential mental things. It is only as he grows to make a conscious distinction between thought and action that he gets to giving the former a higher valuation. And so it is in the different strata of society. The relative force of convention, imitation of externals, worship of custom, seems to have an inverse relation to the degree of development of a people.

Again, Tarde's laws relative to *imitation mode* and *imitation coutume* — the former having in its eye the new, fashionable, popular, the fad; the latter, the old, venerable, customary — are so clearly partial statements of the principles of accommodation and habit, as they get application in the broader genetic ways already briefly pointed out, that it is not necessary to dwell further upon them.[1]

The phenomena of hypnotism illustrate most strikingly the reality of this kind of imitation at a certain stage of mental life. Delbœuf makes it probable[2] that the characteristic peculiarities of the 'stages' of the Paris school are due to this influence; and the wider question may well be opened, whether suggestion generally, as understood in hypnotic

[1] Tarde's other principle, that 'inferiors imitate superiors,' is clearly a corollary from the view that the progressive sense of personality arises through social suggestion.

[2] *Revue Philosophique*, XXII., pp. 146 ff.

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work, might not be better expressed by some formula which recognizes the fundamental sameness of all reactions — normal, pathological, hypnotic, degenerative — which exhibit the form of stimulus-repeating or 'circular' process characteristic of simple imitation. In normal, personal, and social suggestion the copy elements are, in part, unrecognized; and their reactions are subject to inhibition and blocking-off by the various voluntary and complicated tendencies which have the floor. In sleep, on the other hand, the copy elements are largely spontaneous images, thrown up by the play of association, or stimulated by outside trivialities, and all so weak that while action follows in the dream persons, it does not generally follow in the dreamer's own muscles. But in hypnotic somnambulism, the copy elements are from the outside, thrown in; the inner fountains are blocked; action tends to follow upon idea, whatever it is. Even the idea of no action is acted out by the lethargic, and the idea of fixed self-sustaining action by the cataleptic.[1]

Further, in certain cases of madness (*folie à deux*, etc.) the patient responds to the copy which has been learned from a single person only, and which has aided in the production of the disease.[2] In all these cases, the peculiar character of which is the performance, under conditions commonly called those of aboulia,[3] of reactions which require the muscular

[1] It may be well to quote Janet's summary of his determinations of the characteristic features of general catalepsy, all of which indicate a purely imitative condition of consciousness, *Aut. Psych.*, p. 55: "The different phenomena which we have described are these; *i.e.* the continuation of an attitude or a movement, the repetition of movements which have been seen and of sounds which have been heard, the harmonious association of the members and of their movements." Cf. Janet on hysteria, *Arch. de Neurologie*, June, July, 1893.

[2] Cf. Falret, *Études cliniques sur les maladies mentales et nerveuses*, p. 547.

[3] This would involve, as I have intimated on an earlier page, a doctrine which holds that in the hypnotic state, there is inhibition of the cortical asso-

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co-ordinations usually employed by voluntary action, we have illustrations of 'plastic' imitation. On the pathological side, we find, in aphasic patients who cannot write or speak spontaneously, but who still can copy handwriting and speak after another, cases which illustrate the same kind of defect, yet in which the defect is not general, but rather confined to a particular group of reactions, by reason of a circumscribed lesion.

In this form of imitative suggestion, it is now clear, we have a second kind of subcortical reaction. It is 'secondarily subcortical,' in contrast with the organic or 'primarily subcortical' imitations. When looked at from the point of view of race history, it gives us further reason for finding in imitation a native impulse.[1]

§ 3. *How to Observe Children's Imitations*[2]

There are one or two considerations of such practical importance to all those who wish to observe cases of imitation by children, that I venture to throw them together, only

ciative or synthetic function, but not of the simple cortical sense function. Cf. Gurney's remarks on Heidenhain's explanation of 'hypnotic mimicry,' in *Mind*, 1884, p. 493.

[1] In the earlier publication of some of the positions of this chapter (*Mind*, January, 1894, p. 52), I argued against Bain's view, in his *Senses and Intellect*, pp. 413 ff. (3d ed.), of imitation as in all cases acquired. In his fourth edition, while repeating his former arguments, he nevertheless so weakens them by a supplementary note that I find his concessions practically bringing him into accord with our own views. The note is as follows (*loc. cit.*, p. 441): "As in other connections, I have to qualify the foregoing explanation by admitting the possibility and the fact of hereditary transmission in at least preparing the way or giving facilities for the operation now described. . . . The inheritance of tendencies favouring acquisition may decisively contribute to the advancement of our early powers of imitation. The term 'instinct' would thus have a certain fitness. . . ."

[2] See the *Century Magazine* for December, 1894, and cf. Royce's article on 'The Imitative Functions' in the same magazine for May, 1894.

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