

DISCUSSION AND REPORTS.

THE GROWTH OF VOLUNTARY CONTROL.

Some time ago a series of experiments was conducted by Professor Ladd connected with the voluntary control of the 'Eigenlicht.' Little attention was paid to the results, which were briefly embodied in an article published at the time in the *PSYCHOLOGICAL REVIEW*. This was somewhat surprising considering the importance of the general principles involved. There can be no doubt that the dominance of the physical explanation of phenomena has reacted to the detriment of our naïve faith in the all-powerfulness of the will. Mechanism has the floor just now. We should be entirely unwarranted, however, in drawing the conclusion that the will and its old-time spontaneity are 'for sale cheap.' The experiments conducted by Professor Ladd showed that the common conclusion is, to say the least, hasty. For the averages obtained, based on an extended series of experiments and conducted, under his direction, by some twenty special students of psychology, revealed the fact that voluntary control, though varying in degree in the particular function in question, as was to be expected, was nevertheless in every case more or less superior to the physical conditions which surrounded the experimenters. We are not, then (for I was one of the experimenters), wholly submerged in the meshes of mechanism.

I propose to trace, briefly, the growth of this fact of voluntary control, especially in connection with the function, illustrated in Professor Ladd's experiments, which the will serves as a mediating term between mechanism and so-called freedom. For I take it that the two statements, 'the will is limited' and 'the will is free,' cannot be reconciled except through the study of the evolution of the mind's progressive self-mastery. The real significance of the will, as an element of psychic life, is to be found, I think, in the way it is occupied in adjusting means and ends, mechanism to freedom. This aspect of volition has not, it seems to me, received the attention it deserves. To present some of the facts connected with this phase of mental life, taken from the psychology of volition, may serve the double purpose of calling attention again to the facts contended for by Professor Ladd

in the experiments above referred to; and also to suggest a new way of approaching the problem of freedom as a psychological factor of noetics and ethics. We may present the subject under the following heads: spontaneous control, or tact; immediate control, or conscious adjustment; teleological control, or self-control.

1. The subject of tact is one of the most mysterious in the whole range of psychology. Here we can only follow out the suggestions given by nature; for the key to the mystery lies in the organic and instinctive activities, the preëxistent factors of which may be taken as affording the clues to the various concrete types of spontaneous control. These are mainly three: (1) One kind of spontaneous control results from a peculiar facility of the will to isolate itself in the developing organism in certain directions to the neglect or indifference of others. We may call this the tact that isolates. Ultimately, this form of spontaneous control rests upon the relationship of the chemical and physiological elements of the vegetative life and the resultant differentiation of organ and function. The will, in some cases, and at some periods always, follows the index finger of nature, and the tact manifested, for example, in the control of the bodily functions, in the progress from infancy to youth, is a concrete illustration of this general fact. Where this species of tact is pronounced, the tendency to control by isolation is continued. The phenomena of genius, in all its forms, depend upon this fact of organic tactfulness for isolation; on this side of it, genius is merely the spontaneous ability to ignore certain directions of possible control for the sake of those which are more spontaneous. Isolation is the physiological condition of self-limitation and it is largely a matter of spontaneity, the will tactfully taking the line of least resistance as the 'rational' line of self-realization. In support of this, it is a fact, well vouched for by physiological students, that certain organs and functions develop more quickly than others and this fact has its corresponding feature in control. In abnormal cases, *e. g.*, abnormal and neurotic children, and children born of parents married late in life, it is frequently observed that the rudimentary organs of the mind, the head and brain in particular, attain to a quicker relative development and are thus isolated for spontaneous voluntary control for the rest of life. This fact, however, if associated with relative stability among the elements, leads to marked character and greatly increased facility of control. (2) The will spontaneously and instinctively controls the changes introduced by *growth* and *experience*. This is another species of tact, *viz.*, the tact for variation. The body, at first in absolute isolation from the world, always shows this tendency

when introduced into its larger environment. But it may also become a specialized form of activity, just as the tendency to isolation does; both isolation and variation are organic; but either may, under appropriate and opportune influences, become voluntary and automatic. In early life, we have doubtless noticed the tendency of the will to make departures in the matter of control. Abnormal and criminal children are cases when this tendency has run to excess. It rests upon the relative instability of the elements of organic life, as well as upon the failure of training. Tact for change, for variation, is a positive gift of the normal individual, however, as these abnormal cases show. The control is spontaneous in this case. No teaching or training seems to be necessary. The child suckles the breast without any previous education and this is a type of the tactful control of variation in all its phases. Further illustrations occur in the voluntary control of the *means* of conscious and teleological control. (3) Isolation and variation are conditions of natural selection; natural selection itself, however, is conditioned on the law of heredity. It is matter of general observation that many of the spontaneous acts of the will are hereditary, *i. e.*, reproduce the features of tact based on preëxistent determination: *e. g.*, the kind of spontaneous control shown by the children of musicians, artists, etc., resembles in kind, though not in degree, the peculiarities of their originals. For all species of tact, and therefore all kinds of spontaneous control, depend on conscious and teleological control, subject to the laws whereby acts are mechanized in habits and temperaments. The notion that the voluntary control itself is a matter of heredity is still unproved. Reflex movements are partially determined by heredity; but tact is more than reflex movement plus heredity: there is a residuum not contained in the chain of organic conditions which is the self-activity of the will itself. Thus, in certain of the arts and crafts, aptitude for the control of tools has become considerably facilitated by the operation of heredity laws. In the Middle Ages, the guilds of workmen exhibited this fact in a very concrete way: generations of the same families continued in the line of service marked out by their ancestry. So to-day in older countries, where the tendency to variation has not entirely overcome the other tendencies, a great part of domestic and industrial life rests upon the spontaneous control of hereditary instincts.

These three kinds of spontaneous control condition all other kinds of voluntary control. Tact constantly broadens as life unfolds; but the development of individuality and character is unfailingly faithful to the type discovered in the earliest spontaneous reactions of the will.

In other words, voluntary control, in its spontaneous form has a modicum of "freedom," and a maximum of "mechanism." The point we make is that freedom and mechanism could not be mediated in any case, not even in the form of tact, without the control of the will, at least in the assenting and instinctive manner peculiar to it. Tact itself is the result of contact, *i. e.*, of the intercourse and inter-play of spontaneity and mechanism. It is, in short, the will that gives to our earliest exertions at control the aspect of experience.

2. There is no marked line between spontaneous and conscious control; the one develops out of the other; the latter bears all the characters of the former. The new factor introduced is the influence of training; for as soon as we leave the phenomena of instinctive and tactful control, we see the necessity of the will 'to take a hand' in all its experience. Now this conscious exertion of will is the main characteristic of the mind of the child. Dim and inchoate are its ideas and but for a rough-and-ready equipment of bodily organs and functions, together with tact in the progressive control of them, everything has to be learned. But a great deal of this conscious control rests upon tact: *e. g.*, the formation of the various areas of reaction in the brain rests upon an organic adaptation in the organs concerned for their particular functions. Take the visual area. This is, mechanically, easily explained; but from the standpoint of voluntary control it is a very complex process, involving adjustment of eye balls, control of muscles and the unique fact of development in the visual area. The same is true of the other so-called 'ideal' sense, hearing. Mechanically organ and function are beautifully adapted; but the will, only after long processes, learns to control this source of perceptions and sensations. To a large extent, tact again explains the difference, *e. g.*, between the organic response of a child to sound stimulation and that of a trained musician. The large interpretative factor in the 'ear' of a Beethoven points to the relatively larger control of the sound impressions. The ear of both, other things being equal and presupposing a normal organ and auditory area, records equally well the stimuli; but only conscious and immediate voluntary control can explain the fact that Beethoven wrote his grandest music after losing control of the mechanism of hearing altogether. But the conscious and progressive control of our organs of sensation is, nevertheless, largely a matter of spontaneity, of tact, dependent upon the large amount of mechanical process involved. And facts go to show that our conscious efforts follow the features of tact already mentioned.

The control of the senses *in combination* is a matter of conscious

voluntary effort, *i. e.*, it is the result of immediate forth-putting of conation. Indeed, when sufficient strength has been obtained, the voluntary control becomes competent to inhibit and even suspend the activities of the bodily mechanism. It is now generally understood that the feelings and the will are intimately related, and that the feelings are closely allied to certain visceral and sympathetic nervous centers. These are under the control of the will, so that, in states of fear, anger, or remorse, or similar more or less complex affective states, the constitutional arrangements of the body may be interfered with. Functional activity, indeed, we regard as subject not only to immediate control, but to teleological also. We train children upon this assumption at any rate: that the spontaneous will to indulge these functions *must* give place to a higher and immediate control. Dirtiness is not only a matter of functional defect; it is a moral affair.

The control of intellection shows, in like manner, a growth of voluntary activity. Language is the greatest achievement of man and to a large extent language is a matter of tact in the form of the so-called imitative will. The conquest of vocabulary, beginning as it does in single words, and extending as intelligence extends, to verbs and relative parts of speech, is based upon experience of the self in its action on the environment. No emergence of intelligence is easy, still less necessary, when the motor centers are undeveloped. Activity again expresses the normal feature of the formation of speech. 'Willie *do* this,' 'Willie *do* that,' shows the mode of self-activity. Always 'do' something. The will must be appealed to and aroused. No word is truer of children and grown men than that they learn by doing. The *order* of volitional control in speech is first the noun. 'Willie' stands for certain associated images of actions; and this is based on previous experience with other concrete objects. Next verbs: 'do' implies the impulsive and imitative will; and this is securely founded upon experience with self in the past and instinctive tactfulness. 'This' and 'that' show the related yet the discriminated thought of purposive action. The complicated phenomena of speech are often amusingly illustrated in the voluntary control of the aspirate. The 'h' is a very active part of speech, and failure to control it is an evidence of failure in motor control, as connected with the imitative use of the will. This is a serious matter in self-consciousness; for it points to volitional instability in muscular and functional reaction. No one can doubt the volitional effort required to control this refractory member, involving breathing, muscular contraction, intellection and conscious and immediate will-power. Some children never control the aspirate. Some nations make havoc of it even.

The control of thought is another and higher step in voluntary activity. Through speech thought is coördinated and knowledge extended. Whether thought exists apart from speech cannot be determined from the introspective standpoint. What we know is that thought develops and comes under the control of the will as speech is mastered; thinking and speaking are the same things on different sides, speech being the volitional expression of thought. *Now no thought bears the aspect of reality which lacks will.* Even the comparatively passive process of sense-perception would be blind without the active presence of the laws of thought; for an object, thoroughly perceived, observed in all its elements, is a thought-object; even the infant's perceptions are, potentially, of this nature. Strictly speaking, of course, thought cannot be controlled, but only followed; but thought is not a matter of experience and knowledge without will, and in so far as the nature of thought becomes a matter for speech, it is entirely under voluntary control, *i. e.*, it is an adaptation of mechanism and spontaneity.

In both these processes, speech and thought, the tact of spontaneous control betrays itself. Generically, this fact may be expressed by the manifestation of peculiar combinations of instincts, feelings and motions in the back ground of thought so to speak. These subjective aspects of consciousness are, however, forms of willing and involve intellection. For we are never *merely* receptive. A feeling, even an organic impulse, is an active state, whether viewed from the aspect of pleasure or pain. The volitional control of feeling is therefore obviously possible, either through the spontaneous activities, or through intellection. There is no affective state which cannot be, to some extent, controlled through these channels. We may thus summon the intellect and emotions to support the will against any attack upon 'freedom.' It is true the intensity of the stimulus, say an intense feeling of pain, cannot be controlled by the will, *i. e.*, cannot be got rid of, or displaced by indifferent mental contents, since the relation of stimulus and reaction is permanent; but all our higher life, all teleological control, rests upon the assumption that the will is not bound by this mechanical relation. For the will's significance in mental life is just this: it is endowed with the function of standing between the mechanical relation of stimulus and reaction and the ends involved in consciousness as a progressive and self-conscious reality.

This voluntary control of intellection can be illustrated in the activity of attention. Attention is a complex operation involving both voluntary and involuntary elements. In a loose sense, primary intel-

lection is a species of spontaneous voluntary control based on reflex-activity; in the simplest act of attention, however, there is involved, something more than reflex-activity, though it is difficult to draw the line between what is mechanical and what is 'free.' The bridge over the chasm between mechanism and freedom is again to be found in the phenomena of progressive control. This control proceeds along two lines. Along one of these we observe a growing power of the will to subordinate the character, intensity, and duration of the sensuous content, upon which so much of what requires attention depends, to ends. This power, primarily, rests, as all else in voluntary control, upon the organic and affective life. We adjust ourselves easily to what greatly excites us. The clearness and degree of absorption in our attentive states, in other words, depend on motor control of the sub-conscious sort. What is called mind wandering is simply the inability of the will to control the motor side of our mental associations in an immediate and conscious manner: the will flows spontaneously along the stream of suggestion. But training, *i. e.*, the practice to which our organic powers are submitted in contact with suitable environments, soon gives the cure for this state. That cure consists, essentially, in introducing into the stream of sensuous and mental stimulation, the deeper principles of suggestibility involved in control of the teleological sort. Along another line, control is secured in attention through interest. A certain school of thinking to-day, following the isolated suggestions of thinkers as far back as Comenius, says that interest is the alpha and omega of attention. We think not. It is undoubtedly a strong influence: we easily attend to what interests us; but the 'prick' of *sensuous*, organic, excitement is just as strong. The strength of interest lies in the large amount of the self-referring activity involved. We are concerned when 'our interests' appeal to our wills. The ego, in the form of feeling, is what we mean by interest; but, for the reason that the ego *is* involved, interest expresses the complex unity of thoughts and volitions which go to make up the total man considered as a person. Interest is thus the total man 'bulging' in the curve of feeling; it is self in the intensest form, self-interest. As such it is almost entirely under the voluntary control of the will. Attention, at any rate, either as sensuously determined or as determined by self-interest, is a growth in which we discover a progressive adjustment of reflex-action to higher and higher modes of self-activity. The phenomena of religious experience, in conviction of sin, repentance and new life, show, as Höfding says, a relative failure of control; but he is entirely wrong in his analysis of humility.¹ The interests which

¹ Outlines of Psychology, p. 244.

we may deem at any time desirable as favoring our private ends are not so high and noble as those which may be contrary to our personal prospects. Egoistic influences, exclusively followed, do not make the demand on voluntary control that those of the more sympathetic type make. So far as attention is concerned, the voluntary control grows, in very few cases, normally, and the types of tact maintain themselves in their concreteness, just as the forms of feeling and temperament remain relatively permanent. The point we make is this: the attempt to resolve interest into exclusive states of feeling, purely self-regarding, and to maintain that it is interest, in this sense, that determines attention, is not a complete analysis of the phenomena of attention. Interest involves a certain instinctive and conscious exertion of the will and so far is not merely a state of feeling. That it also involves representation, in intellection and thought, is obvious when the object of attention is considered. It is nothing against the will that in any particular act of attention it adjusts itself to the prevailing forms of feeling at hand; this is no disgrace, no compromise of freedom; it is the type of all forms of voluntary control. At any rate, the whole of the religious and ethical life proceeds upon the assumption that the will is responsible and free, and what this can mean, if attention is absolutely conditioned on the affective experiences involved in interest, is more than can be understood, at any rate, by the writer.

Immediate and conscious control, then, is a belief which is supported by a considerable array of facts. It will be observed that it starts and abides in instinctive control, or tact; but presents this marked character: the gradual subordination of the mechanism of mental life to its ends. Step by step, the will assumes the power as it is disclosed, and maintains its self-activity by practice until the authority of reason has become possible. In short, we meet with the same phenomenon here as we meet in spontaneous volition, viz., the constant mediating of reflex action and 'freedom.'

3. The same fact is presented in what I have described as teleological control, or self-control in the ultimate sense. The life of man, says Hartley, is a journey from self-interest to self-annihilation. This thought, which is sadly neglected in both psychology and pedagogy, owing to the dominion of physical theories of conduct, plainly implies a progress from a certain aspect of the self to another, with the full consciousness of ends. Not to wrangle on the meaning of the terms, 'self-interest,' and 'self-annihilation,' all will finally admit that the most distinctive characteristic of mind is *activity directed towards ends*. The will, in other words, is teleological. In the first place, it

is so, spontaneously. Tact is a species of semi-conscious adaptation of means to ends. Mechanism is not opposed to purposive selection; it is itself an example of selection, and therefore rests finally on voluntary control. In the case of spontaneous control, the end sought is so largely involved in the operation of the reflex-activities, that the apparent automatic response given bears the outward marks of being purely involuntary. But in so far as ends are proposed will is involved. If the phenomena of tact be resolved entirely into mechanism, it ceases to be a state of the finite consciousness except as re-presented.

The presence of ends in immediate voluntary activity is more readily verified. Synthetic activity is now denied by none but materialists, and so far, therefore, the will in seeking the control of the operations of consciousness is teleological. In specific cases, multitudes of which can be gathered in the class room of any school in the land, the conscious adjustment involved in this fact can be seen. The presence of ends is the light of all mind.

But it is more particularly when the ideals of reason are considered that the full swing of voluntary activity is made known. The will is never 'freer' than when it brings itself under the laws immanent in reason. A lawless will is an abnormality: spiritual principles lie back of all mechanism, and it is one of the glories of man that he can be appealed to on grounds higher than those of self-interest. Now the stable condition of voluntary control which is reached as a result of 'self-denial' for the sake of higher objects and ideals, is the result of conscious adjustment: 'The self' as an immediate object of direct cultivation is brought under higher rational ideals, through the unifying activity involved in all our teleological self-activity. What we call self-control, which expresses both spontaneity and final purpose, is thus the most concrete case of voluntary control. It includes the so-called bodily self, with its mechanical arrangement of organs and functions; it includes the empirical self, and developing intellection; it includes the ideal self, that is, the spiritual self which furthers or hinders all the other processes. In the construction of this self, it is will that plays the controlling part. The feeling about the neck and head, into which some¹ would resolve the consciousness of self, is purely an organic matter, not directly connected with self-consciousness. But 'nature' could appear a unity only for the reason that the will teleologically synthesizes the complex activities of the self; nature has no meaning apart from unifying intelligence, and therefore knowledge would be impossible, even knowledge of the neck- and

¹ Cf. Professor James' *Principles of Psychology*, Vol. I., 300 p. ff.

head-feelings, apart from voluntary control. The essence of selfhood is this voluntary activity directed by ideals.

In ethics and religion these phenomena are matters of obvious experience.¹ The point we make is that the phenomena of voluntary control are obedient to a general relation, which obtains between reflex-activity and *all* the forms of 'freedom'; that the real question involved is this mystery of control, and not freedom *or* mechanism, as the alternative is usually put.

The relation of these facts to the problem of noetics and ethics is obvious, but too large to be explained in this connection. It is plain, however, that the claim for free intelligence as a constitutive element of knowledge and conduct; the claim that knowledge is impossible without synthetic activity, turns on the implicit acknowledgment or denial of the phenomena briefly presented above. In the experiments conducted by Professor Ladd, briefly referred to, the claim made was that the will not only can, but does, control the physical conditions of intellection. It is true the isolation involved in all experimentation required special conditions, and the purposive choice of means and ends, in the class of facts brought out by him; but the general result was to establish a far greater degree of control than was commonly, or academically, supposed possible. Even making all due allowance for the influence a distinguished teacher is almost always able to exert on the pupils he teaches; making all allowance for the fact that we are liable to see what we *want* to see; the simple fact is (and it is borne out by the psychology of suggestion),² that the will has more control and is a more prominent factor in our life-history than current psychology is in the habit of admitting. Whether we look at the spontaneous, the conscious, or the teleological form, we make our own character and destiny; I would go further and say, in the light of the few facts we know, that unknown possibilities of voluntary control are the necessary corollary of the known, and that the future life and human immortality are (in any worthy sense), dependent upon the 'free' adjustment of our souls, in the society of being (the ultimate nature of which cannot exclude intelligent purpose) to God, freedom and immortality.

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¹ Cf. Bosanquet, *Psychology of the Moral Self*.

² Cf. Sidis, *Psychology of Suggestion*.