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*PSYCHOLOGY AND SOCIAL PRACTICE.**

IN coming before you I had hoped to deal with the problem of the relation of psychology to the social sciences—and through them to social practice, to life itself. Naturally, in anticipation, I had conceived a systematic exposition of fundamental principles covering the whole ground, and giving every factor its due rating and position. That discussion is not ready to-day. I am loath, however, completely to withdraw from the subject, especially as there happens to be a certain phase of it with which I have been more or less practically occupied within the last few years. I have in mind the relation of Psychology to Education. Since education is primarily a social affair, and since educational science is first of all a social science, we have here a section of the whole field. In some respects there may be an advantage in approaching the more comprehensive question through the medium of one of its special cases. The absence of elaborated and coherent views may be made up for by a background of experience, which shall check the projective power of reflective abstraction, and secure a translation of large words and ideas into specific images. This special territory, moreover, may be such as to afford both sign-posts and broad avenues to the larger

* Address of the President of the American Psychological Association, New Haven meeting, December, 1899.

sphere—the place of psychology among the social sciences. Because I anticipate such an outcome, and because I shall make a survey of the broad field from the special standpoint taken, I make no apology for presenting this discussion to an Association of Psychologists rather than to a gathering of educators.

In dealing with this particular question, it is impossible not to have in mind the brilliant and effective discourses recently published by my predecessor in this chair. I shall accordingly make free to refer to points, and at times to words, in his treatment of the matter. Yet, as perhaps I hardly need say, it is a problem of the most fundamental importance for both psychology and social theory that I wish to discuss, not any particular book or article. Indeed with much of what Dr. Münsterberg says about the uselessness and the danger for the teacher of miscellaneous scraps of child study, of unorganized information regarding the nervous system, and of crude and uninterpreted results of laboratory experiment, I am in full agreement. It is doubtless necessary to protest against a hasty and violent bolting of psychological facts and principles which, of necessity, destroys their scientific form. It is necessary to point out the need of a preliminary working over of psychological material adapting it to the needs of education. But these are minor points. The main point is whether the standpoint of psychological science, as a study of mechanism, is indifferent and opposed to the demands of education with its free interplay of personalities in their vital attitudes and aims.

I.

The school practice of to-day has a definite psychological basis. Teachers are already possessed by specific psychological assumptions which control their theory and their practice. The greatest obstacle to the introduction of certain educational reforms is precisely the permeating persistence of the underlying psychological creed. Traced back to its psychological ultimates, there are two controlling bases of existing methods of instruction. One is the assumption of a fundamental distinction between child psychology and the adult psychology where, in reality, identity reigns; viz.: in the region of the motives and conditions which make for mental power. The other is the assumption of likeness where marked difference is the feature most significant for educational purposes; I mean the specialization of aims and habits in the adult, compared with the absence of specialization in the child, and the connection of undifferentiated status with the full and free growth of the child.

The adult is primarily a person with a certain calling and position in life. These devolve upon him certain specific responsibilities which he has to meet, and call into play certain formed habits. The child is primarily one whose calling is growth. He is concerned with arriving at specific ends and purposes—instead of having a general framework already developed. He is engaged in forming habits rather than in definitely utilizing those already formed. Consequently he is absorbed in getting that all around contact with persons and things, that range of acquaintance with the physical and ideal factors of life, which shall afford the background and material for the specialized aims and pursuits of later life. He is, or should be, busy in the formation of a flexible variety of habits whose sole immediate criterion is their relation to full growth, rather than in acquiring certain skills whose value is measured by their reference to specialized technical accomplishments. This is the radical psychological and biological distinction, I take it, between the child and the adult. It is because of this distinction that children are neither physiologically nor mentally describable as 'little men and women.'

The full recognition of this distinction means of course the selection and arrangement of all school materials and methods for the facilitation of full normal growth, trusting to the result in growth to provide the instrumentalities of later specialized adaptation. If education means the period of prolonged infancy, it means nothing less than this. But look at our school system and ask whether the 3 R's are taught, either as to subject matter or as to method, with reference to growth, to its present demands and opportunities; or as technical acquisitions which are to be needed in the specialized life of the adult. Ask the same questions about geography, grammar and history. The gap between psychological theory and the existing school practice becomes painfully apparent. We readily realize the extent to which the present school system is dominated by carrying over into child life a standpoint and method which are significant in the psychology of the adult.

The narrow scope of the traditional elementary curriculum, the premature and excessive use of logical analytic methods, the assumption of ready-made faculties of observation, memory, attention, etc., which can be brought into play if only the child chooses to do so, the ideal of formal discipline—all these find a large measure of their explanation in neglect of just this psychological distinction between the child and the adult. The hold of these affairs upon the school is so fixed that it is impossible to shake it in any fundamental way, excepting by a thorough appreciation of the actual psychology of the case. This appreciation cannot be confined to the educational leaders and theorists. No individual instructor can be sincere and whole hearted, to say nothing of intelligent, in carrying into effect the needed reforms, save as he genuinely understands the scientific basis and necessity of the change.

But in another direction there is the assumption of a fundamental difference: Namely, as to the conditions which secure intellectual and moral progress and power.* No one seriously questions that, with an adult, power and control are obtained through realization of personal ends and problems, through personal selection of means and materials which are relevant, and through personal adaptation and application of what is thus selected, together with whatever of experimentation and of testing is involved in this effort. Practically every one of these three conditions of increase in power for the adult is denied for the child. For him problems and aims are determined by another mind. For him the material that is relevant and irrelevant is selected in advance by another mind. And, upon the whole, there is such an attempt to teach him a ready-made method for applying his material to the solution of his problems, or the reaching of his ends that the factor of experimentation is reduced to the minimum. With the adult we unquestioningly assume that an attitude of personal inquiry, based upon the possession of a problem which interests and absorbs, is a necessary precondition of mental growth. With the child we assume that the precondition is rather the willing disposition which makes him ready to submit to any problem and material presented from without. Alertness is our ideal in one case; docility in the other. With one, we assume that power of attention develops in dealing with problems which make a personal appeal, and through personal responsibility for determining what is relevant. With the other we provide next to no opportunities for the evolution of problems out of immediate experience, and allow next to no free mental play for selecting, assorting and adapting the ex-

*I owe this point specifically (as well as others more generally) to my friend and colleague, Mrs. Ella Flagg Young.

periences and ideas that make for their solution. How profound a revolution in the position and service of text-book and teacher, and in methods of instruction depending therefrom, would be effected by a sincere recognition of the psychological identity of child and adult in these respects can with difficulty be realized.

Here again it is not enough that the educational commanders should be aware of the correct educational psychology. The rank and file, just because they are persons dealing with persons, must have a sufficient grounding in the psychology of the matter to realize the necessity and the significance of what they are doing. Any reform instituted without such conviction on the part of those who have to carry it into effect would never be undertaken in good faith, nor in the spirit which its ideal inevitably demands; consequently it could lead only to disaster.

At this point, however, the issue defines itself, somewhat more narrowly. It may be true, it is true, we are told, that some should take hold of psychological methods and conclusions, and organize them with reference to the assistance which they may give to the cause of education. But this is not the work of the teacher. It belongs to the general educational theorist—the middleman between the psychologist and the educational practitioner. He should put the matter into such shape that the teacher may take the net results in the form of advice and rules for action; but the teacher who comes in contact with the living personalities must not assume the psychological attitude. If he does he reduces persons to objects, and thereby distorts, or rather destroys, the ethical relationship which is the vital nerve of instruction (*Psychology and Life*, p. 122, and pp. 136–138).

That there is some legitimate division o labor between the general educational theorist and the actual instructor, there is of course no doubt. As a rule, it will not be the one actively employed in instruction who will be most conscious of the psychological basis and equivalents of the educational work, nor most occupied in finding the pedagogical rendering of psychological facts and principles. Of necessity, the stress of interest will be elsewhere. But we have already found reason for questioning the possibility of making the somewhat different direction of interest into a rigid dualism of a legislative class on one side and an obedient subject class on the other. Can the teacher ever receive 'obligatory prescriptions'? Can he receive from another a statement of the means by which he is to reach his ends, and not become hopelessly servile in his attitude? Would not such a result be even worse than the existing mixture of empiricism and inspiration?—just because it would forever fossilize the empirical element and dispel the inspiration which now quickens routine. Can a passive, receptive attitude on the part of the instructor (suggesting the soldier awaiting orders from a commanding general) be avoided, unless the teacher, as a student of psychology, himself sees the reasons and import of the suggestions and rules that are proffered him?

I quote a passage that seems of significance: "Do we not lay a special linking science everywhere else between the theory and practical work? We have engineering between physics and the practical workingmen in the mills; we have a scientific medicine between the natural science and the physician" (p. 138). The sentences suggest in an almost startling way, that the real essence of the problem is found in an *organic* connection between the two extreme terms—between the theorist and the practical worker—through the medium of the linking science. The decisive matter is the extent to which the ideas of the theorist actually project themselves, through the

kind offices of the middle man, into the consciousness of the practitioner. It is the participation by the practical man in the theory, through the agency of the linking science, that determines at once the effectiveness of the work done, and the moral freedom and personal development of the one engaged in it. It is because the physician no longer follows rules, which, however rational in themselves, are yet arbitrary to him (because grounded in principles that he does not understand), that his work is becoming liberal, attaining the dignity of a profession, instead of remaining a mixture of empiricism and quackery. It is because, alas, engineering makes only a formal and not a real connection between physics and the practical workingmen in the mills, that our industrial problem is an ethical problem of the most serious kind. The question of the amount of wages the laborer receives, of the purchasing value of this wage, of the hours and conditions of labor, are, after all, secondary. The problem primarily roots in the fact that the mediating science does not connect with his consciousness, but merely with his outward actions. He does not appreciate the significance and bearing of what he does; and he does not perform his work because of sharing in a larger scientific and social consciousness. If he did, he would be free. All other proper accompaniments of wage, and hours, healthful and inspiring conditions would be added unto him, because he would have entered into the ethical kingdom. Shall we seek analogy with the teacher's calling in the workingmen in the mill, or in the scientific physician?

It is quite likely that I shall be reminded that I am overlooking an essential difference. The physician, it will be said, is dealing with a body which either is in itself a pure object, a causal interplay of anatomical elements, or is something which lends itself naturally and without essential loss to treatment from this point of view; while the case is quite different in the material with which the teacher deals. Here is personality, which is destroyed when regarded as an object. But the gap is not so pronounced nor so serious as this objection implies. The physician after all is not dealing with a lifeless body; with a simple anatomical structure, or interplay of mechanical elements. Life functions, active operations, are the reality which confront him. We do not have to go back many centuries in the history of medicine to find a time when the physician attempted to deal with these functions directly and immediately. They were so overpoweringly present, they forced themselves upon him so obviously and so constantly that he had no resource save a mixture of magic and empiricism: magic, so far as he followed methods derived from uncritical analogy, or from purely general speculation on the universe and life; empiricism, so long as he just followed procedures which had been found helpful before in cases which somewhat resembled the present. We have only to trace the intervening history of medicine to appreciate that it is precisely the ability to state function in terms of structure, to reduce life in its active operations to terms of a causal mechanism, which has taken the medical calling out of this dependence upon a vibration between superstition and routine. Progress has come by taking what is really an activity as if it were only an object. It is the capacity to effect this transformation of life activity which measures both the scientific character of the physician's procedure and his practical control, the certainty and efficacy of what he, as a living man, does in relation to some other living man.

It is an old story, however, that we must not content ourselves with analogies. We must find some specific reason in the principles of the teacher's own activities for

believing that psychology—the ability to transform a living personality into an objective mechanism for the time being—is not merely an incidental help, but an organic necessity. Upon the whole, the best efforts of teachers at present are partly paralyzed, partly distorted, and partly rendered futile precisely from the fact that they are in such immediate contact with sheer, unanalyzed personality. The relation is such a purely ethical and personal one that the teacher cannot get enough outside the situation to handle it intelligently and effectively. He is in precisely the condition in which the physician was when he had no recourse save to deal with health as entity or force on one side, and disease as opposing agency or invading influence upon the other. The teacher reacts *en bloc*, in a gross wholesale way, to something which he takes in an equally undefined and total way in the child. It is the inability to regard, upon occasion, both himself and the child as just objects working upon each other in specific ways that compels him to resort to purely arbitrary measures, to fall back upon mere routine traditions of school teaching, or to fly to the latest fad of pedagogical theorists—the latest panacea peddled out in school journals or teachers' institutes—just as the old physician relied upon his magic formula.

I repeat, it is the fundamental weakness of our teaching force to-day (putting aside teachers who are actually incompetent by reason either of wrong motives or inadequate preparation), that they react in gross to the child's exhibitions in gross without analyzing them into their detailed and constituent elements. If the child is angry, he is dealt with simply as an angry being; anger is an entity, a force, not a symptom. If a child is inattentive, this again is treated as a mere case of refusal to use the faculty or function of attention, of sheer unwillingness to act. Teachers tell you that a child is careless or inattentive in the same final way in which they would tell you that a piece of paper is white. It is just a fact, and that is all there is of it. Now it is only through some recognition of attention as a mechanism, some awareness of the interplay of sensations, images and motor impulses which constitute it as an objective fact that the teacher can deal effectively with attention as a function. And, of course, the same is true of memory, quick and useful observation, good judgment and all the other practical powers the teacher is attempting to cultivate.

Consideration of the abstract concepts of mechanism and personality is important. Too much preoccupation with them in a general fashion, however, without translation into relevant imagery of actual conditions is likely to give rise to unreal difficulties. The ethical personality does not go to school naked, it takes with it the body as the instrument through which all influences reach it, and through control of which its ideas are both elaborated and expressed. The teacher does not deal with personality at large, but as expressed in intellectual and practical impulses and habits. The ethical personality is not formed—it is forming. The teacher must provide stimuli leading to the equipment of personality with active habits and interests. When we consider the problem of forming habits and interests we find ourselves at once confronted with matters of this sort: What stimuli shall be presented to the sense organs and how? What stable complexes of associations shall be organized? What motor impulses shall be evoked, and to what extent? How shall they be induced in such a way as to bring favorable stimuli under greater control, and to lessen the danger of excitation from undesirable stimuli? In a word, the teacher is dealing with the psychical factors that are concerned with furtherance of certain habits, and the in-

hibition of others—habits intellectual, habits emotional, habits in overt action.

Moreover, all the instruments and materials with which the teacher deals must be considered as psychical stimuli. Such consideration involves of necessity, a knowledge of their reciprocal reactions—of what goes by the name of causal mechanism. The introduction of certain changes into a net-work of associations, the reinforcement of certain sensori-motor connections, the weakening or displacing of others—this is the psychological rendering of the greater part of the teacher's actual business. It is not that one teacher employs mechanical considerations, and that the other does not, appealing to higher ends; it is that one does not know his mechanism, and consequently acts servilely, superstitiously and blindly, while the other, knowing what he is about, acts freely, clearly and effectively.*

The same thing is true on the side of materials of instruction—the school studies. No amount of exaltation of teleological personality (however true, and however necessary the emphasis), can disguise from us the fact that instruction is an affair of bringing a child into intimate relations with concrete objects, positive facts, definite ideas and specific symbols. The symbols are objective things in arithmetic, reading and writing. The ideas are truths of history and of science. The facts are derived from such specific disciplines as geography and language, botany and astronomy. To suppose that by some influence of pure personality upon pure personality, conjoined with a knowledge of rules formulated by an educational theorist, an effective interplay of this body of physical and ideal objects with the life of the child can be effective, is, I submit, nothing but an appeal to magic, plus dependence upon servile routine. Symbols in reading and writing and number, are both in themselves, and in the way in which they stand for ideas, elements in a mechanism which has to be rendered operative within the child. To bring about this influence in the most helpful and economical way, in the most fruitful and liberating way, is absolutely impossible save as the teacher has some power to transmute symbols and contents into their working psychical equivalents: and save as he also has the power to see what it is in the child, as a psychical mechanism, that affords maximum leverage.

Probably I shall now hear that at present the danger is not of dealing with acts and persons in a gross, arbitrary way, but (so far as what is called new education is concerned) in treating the children too much as mechanism, and consequently seeking for all kinds of stimuli to stir and attract—that, in a word, the tendency to reduce instruction to a merely agreeable thing, weakening the child's personality and indulging his mere love of excitement and pleasure, is precisely the result of taking the psycho-mechanical point of view. I welcome the objection for it serves to clear up the precise point. It is through a partial and defective psychology that the teacher, in his reaction from dead routine and arbitrary moral and intellectual discipline, has substituted an appeal to the satisfaction of momentary impulse. It is not because the teacher has a knowledge of the psycho-physical mechanism, but because he has a partial knowledge of it. He has come to consciousness of certain sensations, and certain impulses, and of the ways in which these may be stimulated and directed, but he is in ignorance of the larger mechanism (just as a mechanism), and of the causal relations which subsist between the un-

* That some teachers get their psychology by instinct more effectively than others by any amount of reflective study may be unreservedly stated. It is not a question of manufacturing teachers, but of reinforcing and enlightening those who have a right to teach.

known part and the elements upon which he is playing. What is needed to correct his errors is not to inform him that he gets only misleading from taking the psychical point of view; but to reveal to him the scope and intricate interactions of the mechanism as a whole. Then he will realize that while he is gaining apparent efficacy in some superficial part of the mechanism, he is disarranging, dislocating and disintegrating much more fundamental factors in it. In a word he is operating not as a psychologist, but as a poor psychologist, and the only cure for a partial psychology is a fuller one. He is gaining the momentary attention of the child through an appeal to pleasant color, or exciting tone, or agreeable association, but at the expense of isolating one cog and ratchet in the machinery, and making it operate independently of the rest. In theory, it is as possible to demonstrate this to a teacher, showing how the faulty method reacts unhappily into the personality, as it is to locate the points of wrong construction, and of ineffective transfer of energy in a physical apparatus.

This suggests the admission made by writers in many respects as far apart as Dr. Harris and Dr. Münsterberg—that scientific psychology is of use on the pathological side—where questions of 'physical and mental health' are concerned. But is there anything with which the teacher has concern that is not included in the ideal of physical and mental health? Does health define to us anything less than the teacher's whole end and aim? Where does pathology leave off in the scale and series of vicious aims and defective means? I see no line between the more obvious methods and materials which result in nervous irritation and fatigue; in weakening the power of vision, in establishing spinal curvatures; and others which, in more remote and subtle, but equally real ways, leave the child with, say, a muscular system which is only partially at the service of his ideas, with blocked and inert brain paths between eye and ear, and with a partial and disconnected development of the cerebral paths of visual imagery. What error in instruction is there which could not, with proper psychological theory, be stated in just such terms as these? A wrong method of teaching reading, wrong I mean in the full educational and ethical sense, is also a case of pathological use of the psycho-physical mechanism. A method is ethically defective that, while giving the child a glibness in the mechanical facility of reading, leaves him at the mercy of suggestion and chance environment to decide whether he reads the 'yellow journal,' the trashy novel, or the literture which inspires and makes more valid his whole life. Is it any less certain that this failure on the ethical side is repeated in some lack of adequate growth and connection in the psychical and physiological factors involved? If a knowledge of psychology is important to the teacher in the grosser and more overt cases of mental pathology is it not even more important in these hidden and indirect matters—just because they are less evident and more circuitous in their operation and manifestation?

The argument may be summarized by saying that there is controversy neither as to the ethical character of education, nor as to the abstraction which psychology performs in reducing personality to an object. The teacher is, indeed, a person occupied with other persons. He lives in a social sphere—he is a member and an organ of a social life. His aims are social aims; the development of individuals taking ever more responsible positions in a circle of social activities continually increasing in radius and complexity. Whatever he as a teacher effectively does, he does as a person; and he does with and towards persons. His methods, like his aims, when

actively in operation, are practical, are social, are ethical, are anything you please —save merely psychical. In comparison with this, the material and the data, the standpoint and the methods of psychology, are abstract. They transform specific acts and relations of individuals into a flow of processes in consciousness; and these processes can be adequately identified and related only through reference to a biological organism. I do not think there is danger of going too far in asserting the social and teleological nature of the work of the teacher; or in asserting the abstract and partial character of the mechanism into which the psychologist, as a psychologist, transmutes the play of vital values.

Does it follow from this that any attempt on the part of the teacher to perform this abstraction, to see the pupil as a mechanism, to define his own relations and that of the study taught in terms of causal influences acting upon this mechanism, are useless and harmful? On the face of it, I cannot understand the logic which says that because mechanism is mechanism, and because acts, aims, values are vital, therefore a statement in terms of one is alien to the comprehension and proper management of the other. Ends are not compromised when referred to the means necessary to realize them. Values do not cease to be values when they are minutely and accurately measured. Acts are not destroyed when their operative machinery is made manifest. The statement of the disparity of mechanism and actual life, be it never so true, solves no problem. It is no distinction that may be used off-hand to decide the question of the relation of psychology to any form of practice. It is a valuable and necessary distinction; but it is only preliminary. The purport of our discussion has, indeed, led us strongly to suspect any ideal which exists purely at large, out of relation to machinery of execution, and equally a machinery that operates in no particular direction.

The proposition that a description and explanation of stones, iron and mortar, as an absolutely necessary causal nexus of mechanical conditions, makes the results of physical science unavailable for purposes of practical life, would hardly receive attention to-day. Every sky-scraper, every railway bridge is a refutation, compared with which oceans of talk are futile. One would not find it easy to stir up a problem even if he went on to include, in this same mechanical system, the steam derricks that hoist the stones and iron, and the muscles and nerves of architect, mason and steel worker. The simple fact is still too obvious; the more thorough-going and complete the mechanical and causal statement, the more controlled, the more economical is the discovery and realization of human aims. It is not in spite of nor in neglect of, but because of the mechanical statement that human activity has been freed, and made effective in thousands of new practical directions, upon a scale and with a certainty hitherto undreamed of. Our discussion tends to suggest that we entertain a similar question regarding psychology only because we have as yet made so little headway—just because there is so little scientific control of our practice in these directions; that at bottom our difficulty is local and circumstantial, not intrinsic and doctrinal. If our teachers were trained as architects are trained, if our schools were actually managed on a psychological basis as great factories are run on the basis of chemical and physical science; if our psychology were sufficiently organized and coherent to give as adequate a mechanical statement of human nature as physics does of its material, we should never dream of discussing this question.

I cannot pass on from this phase of the discussion without at least incidental re-

mark of the obverse side of the situation. The difficulties of psychological observation and interpretation are great enough in any case. We cannot afford to neglect any possible auxiliary. The great advantage of the psychological laboratory is paid for by certain obvious defects. The completer control of conditions, with resulting greater accuracy of determination, demands an isolation, a ruling out of the usual media of thought and action, which leads to a certain remoteness, and easily to a certain artificiality. When the result of laboratory experiment informs us, for example, that repetition is the chief factor influencing recall, we must bear in mind that the result is obtained with nonsense material—*i. e.*, by excluding the conditions of ordinary memory. The result is pertinent if we state it thus: The more we exclude the usual environmental adaptations of memory the greater importance attaches to sheer repetition. It is dubious (and probably perverse) if we say: Repetition is the prime influence in memory.

Now this illustrates a general principle. Unless our laboratory results are to give us artificialities, mere scientific curiosities, they must be subjected to interpretation by gradual reapproximation to conditions of life. The results may be very accurate, very definitive in form; but the task of reviewing them so as to see their actual import is clearly one of great delicacy and liability to error. The laboratory, in a word, affords no final refuge that enables us to avoid the ordinary scientific difficulties of forming hypotheses, interpreting results, etc. In some sense (from the very accuracy and limitations of its results) it adds to our responsibilities in this direction. Now the school, for psychological purposes, stands in many respects midway between the extreme simplifications of the laboratory and the confused complexities of ordinary life. Its conditions are those of life at large; they are social and practical. But it approaches the laboratory in so far as the ends aimed at are reduced in number, are definite, and thus simplify the conditions; and their psychological phase is uppermost—the formation of habits of attention, observation, memory, etc.—while in ordinary life these are secondary and swallowed up.

If the biological and evolutionary attitude is right in looking at mind as fundamentally an instrument of adaptation, there are certainly advantages in any mode of approach which brings us near to its various adaptations while they are still forming, and under conditions selected with special reference to promoting these adaptations (or faculties). And this is precisely the situation we should have in a properly organized system of education. While the psychological theory would guide and illuminate the practice, acting upon the theory would immediately test it, and thus criticise it, bringing about its revision and growth. In the large and open sense of the words psychology becomes a working hypothesis, instruction is the experimental test and demonstration of the hypothesis; the result is both greater practical control and continued growth in theory.

II.

I must remind myself that my purpose does not conclude with a statement of the auxiliary relation of psychology to education; but that we are concerned with this as a type case of a wider problem—the relation of psychology to social practice in general. So far I have tried to show that it is not in spite of its statement of personal aims and social relations in terms of mechanism that psychology is useful, but because of this transformation and abstraction. Through reduction of ethical relations to presented objects, we are enabled to get outside of the existing situation; to

see it objectively, not merely in relation to our traditional habits, vague aspirations and capricious desires. We are able to see clearly the factors which shape it, and therefore to get an idea of how it may be modified. The assumption of an identical relationship of physics and psychology to practical life is justified. Our freedom of action comes through its statement in terms of necessity. By this translation our control is enlarged, our powers are directed, our energy conserved, our aims illuminated.

The school is an especially favorable place in which to study the availability of psychology for social practice, because in the school the formation of a certain type of social personality, with a certain attitude and equipment of working powers, is the express aim. In idea at least no other purpose restricts or compromises the dominance of the single purpose. Such is not the case in business, politics and the professions. All these have upon their surface, taken directly, other ends to serve. In many instances these other aims are of far greater immediate importance; the ethical result is subordinate or even incidental. Yet as it profiteth a man nothing to gain the whole world and lose his own self, so indirectly and ultimately all these other social institutions must be judged by the contribution which they make to the value of human life. Other ends may be immediately uppermost, but these ends must in turn be means; they must subserve the interests of conscious life or else stand condemned.

In other words, the moment we apply an ethical standard to the consideration of social institutions, that moment they stand on exactly the same level as does the school, viz.: as organs for the increase in depth and area of the realized values of life. In both cases the statement of the mechanism, through which the ethical ends are realized, is not only permissible, but absolutely required. It is not merely incidentally, as a grateful addition to its normal task, that psychology serves us. The essential nature of the standpoint which calls it into existence, and of abstraction which it performs, is to put in our possession the method by which values are introduced and effected in life. The statement of personality as an object; of social relations as a mechanism of stimuli and inhibitions, is precisely the statement of ends in terms of the method of their realization.

It is remarkable that men are so blind to the futility of a morality which merely blazons ideals, erects standards, asserts law without finding in them any organic provision for their own realization. For ideals are held up to follow; standards are given to work by; laws are provided to guide action. The sole and only reason for their conscious moral statement is, in a word, that they may influence and direct conduct. If they cannot do this, not merely by accident, but of their own intrinsic nature, they are worse than inert. They are impudent impostors and logical self-contradictions.

When men derive their moral ideas and laws from custom, they also realize them through custom; but when they are in any way divorced from habit and tradition, when they are consciously proclaimed, there must be some substitute for custom as an organ of execution. We must know the method of their operation and know it in detail. Otherwise the more earnestly we insist upon our categorial imperatives, and upon their supreme right of control, the more flagrantly helpless we are as to their actual domination. The fact that conscious, as distinct from customary, morality and psychology have had a historic parallel march, is just the concrete recognition of the necessary equivalence between ends consciously conceived, and interest in the means upon which the ends depend. We have the same reality stated twice

over: once as value to be realized, and once as mechanism of realization. So long as custom reigns, as tradition prevails, so long as social values are determined by instinct and habit, there is no conscious question as to the method of their achievement, and hence no need of psychology. Social institutions work of their own inertia, they take the individual up into themselves and carry him along in their own sweep. The individual is dominated by the mass life of his group. Institutions and the customs attaching to them take care of society both as to its ideals and its methods. But when once the values come to consciousness, when once a Socrates insists upon the organic relation of a reflective life and morality, then the means, the machinery by which ethical ideas are projected and manifested, comes to consciousness also. Psychology must needs be born as soon as morality becomes reflective.

Moreover, psychology, as an account of the mechanism of workings of personality, is the only alternative to an arbitrary and class view of society, to an aristocratic view in the sense of restricting the realization of the full worth of life to a section of society. The growth of a psychology that, as applied to history and sociology, tries to state the interactions of groups of men in familiar psychical categories of stimulus and inhibition, is evidence that we are ceasing to take existing social forms as final and unquestioned. The application of psychology to social institutions is the only scientific way of dealing with their ethical values in their present unequal distribution, their haphazard execution and their thwarted development. It marks just the recognition of the principle of sufficient reason in the large matters of social life. It is the recognition that the existing order is determined neither by fate nor by chance, but is based on law and order, on a system of existing stimuli and modes of reaction, through knowledge of which we can modify the practical outcome. There is no logical alternative save either to recognize and search for the mechanism of the interplay of personalities that controls the existing distributions of values, or to accept as final a fixed hierarchy of persons in which the leaders assert, on no basis save their own supposed superior personality, certain ends and laws which the mass of men passively receive and imitate. The effort to apply psychology to social affairs means that the determination of ethical values lies not in any set or class, however superior, but in the workings of the social whole; that the explanation is found in the complex interactions and interrelations which constitute this whole. To save personality in all, we must serve all alike—state the achievements of all in terms of mechanism, that is, of the exercise of reciprocal influence. To affirm personality independent of mechanism is to restrict its full meaning to a few, and to make its expression in the few irregular and arbitrary.

The anomaly in our present social life is obvious enough. With tremendous increase in control of nature, in ability to utilize nature for the indefinite extension and multiplication of commodities for human use and satisfaction, we find the actual realization of ends, the enjoyment of values growing unassured and precarious. At times it seems as if we were caught in a contradiction; the more we multiply means, the less certain and general is the use we are able to make of them. No wonder a Carlyle or a Ruskin puts our whole industrial civilization under a ban, while a Tolstoi proclaims a return to the desert. But the only way to see the situation steadily, and to see it as a whole, is to keep in mind that the entire problem is one of the development of science, and of its application to life. Our control of nature with the accompanying output of material commodities

is the necessary result of the growth of physical science—of our ability to state things as interconnected parts of a mechanism. Physical science has for the time being far outrun psychical. We have mastered the physical mechanism sufficiently to turn out possible goods; we have not gained a knowledge of the conditions through which possible values become actual in life, and so are still at the mercy of habit, of haphazard, and hence of force.

Psychology, after all, simply states the mechanism through which conscious value and meaning are introduced into human experience. As it makes its way, and is progressively applied to history and all the social sciences, we can anticipate no other outcome than increasing control in the ethical sphere—the nature and extent of which can be best judged by considering the revolution that has taken place in the control of physical nature through a knowledge of her order. Psychology will never provide ready-made materials and prescriptions for the ethical life, any more than physics dictates off-hand the steam engine and the dynamo. But science, both physical and psychological, makes known the conditions upon which certain results depend, and therefore puts at the disposal of life a method for controlling them. Psychology will never tell us just what to do ethically, nor just how to do it. But it will afford us insight into the conditions which control the formation and execution of aims, and thus enable human effort to expend itself sanely, rationally and with assurance. We are not called upon to be either boasters or sentimentalists regarding the possibilities of our science. It is best, for the most part, that we should stick to our particular jobs of investigation and reflection as they come to us. But we certainly are entitled in this daily work to be sustained by the conviction that we are not working in indifference to or at cross-purposes with the practical strivings of our common humanity. The psychologist, in his most remote and technical occupation with mechanism, is contributing his bit to that ordered knowledge which alone enables mankind to secure a larger and to direct a more equal flow of values in life.

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THE MARINE BIOLOGICAL LABORATORY.

THE twelfth annual session of the Marine Biological Laboratory at Woods Holl, Mass., which was held during the past summer, was lacking in none of the elements of interest and success which have made former sessions notable, while several new and valuable features were added last year for the first time. In addition to the regular courses of instruction in Zoology, Embryology and Botany, there was given last year, under the direction of Professor Loeb, a course on Comparative Physiology. Such a course can be given advantageously only at the seashore where living animals of all classes may be had in abundance. In the organization of this course the Woods Holl Laboratory has taken a unique and advanced position which cannot fail to yield valuable results not only to research but also to physiological instruction throughout the country. Another notable feature was the course of lectures and demonstrations in Comparative Psychology given by Dr. Thorndike. This course was followed with the keenest interest by a large number of persons at Woods Holl. The general lectures, a volume of which is published annually, were unusually numerous and valuable. The facilities for dredging in deep water and for making extensive collecting trips were never before so good, thanks to the courtesies of the Fish Commission Station. The United States Fish Commission steamer, *Fishhawk* and schooner *Grampus*, were sta-