

III.

IS THERE A SCIENCE OF EDUCATION? (I)

This opening number of a new review for the study of educational problems must naturally contain some article of a very general character, wherein the prospects and difficulties of the whole undertaking are discussed. That the editor should have intrusted to me the task of writing such a general survey of problems is not only an act of very kindly courtesy toward myself, but a sign of his own willingness to make the difficulties of the doctrine of education manifest from the outset. For the academic student of philosophy and of human nature loves the problems of his profession too much to regard or to depict them as easy; the university teacher is in general trained to reflect even more than to advise; and, for my own part, I have always felt unwilling to apply so pretentious and comforting a name as "Science" to any exposition of the laborious and problematic art of the educator. Yet if in this article I make doubts and difficulties prominent, as it is my office to do, I hope that before I am done it will be clear that my aim is as positive as my method is at times negative. A fragmentary, but still not wholly unsuggestive, program of investigations, such as may profitably be pursued by students of the art of education, an indication of certain significant needs of modern pedagogy, a warning against overhasty generalization, and still an encouragement to every loving observer of children to study the science of psychology without neglecting the intricacies of daily life, and to use wisely his own warm experience, rather than to trust to the mere letter of pedagogical dogmas—such are some of the things that I should like to furnish in my article. I have to make a number of critical and negative observations. I do not want to dishearten, rather do I long to strengthen the interest of teachers in the theoretical aspects of their profession.

I.

A natural text for an essay upon the question of our title is just at present furnished by a widely known and much-discussed paper, read before the Academy of Sciences at Berlin, in July, 1888, and published in the proceedings of that body.¹ The author, Wilhelm Dilthey, Professor of Philosophy in the University of Berlin, is known as a many-sided and cautious student, especially of the more historical and humane aspects of philosophy. His excursion into the field of pedagogy is marked by all his usual caution and learning. His question is essentially our present one: "The Possibility of an universally valid Pedagogical Science." His beginning is negative and critical in tone; his statement of the limitations of the "universally valid doctrine of pedagogy" is highly noteworthy; his skepticism is keen; and yet the outcome of his whole article is, after all, hopeful, and even inspiring. I cannot do better than to begin by summarizing his views. I wish that I could hope to supplement them by anything that approached their knowledge of the subject, and their constructive power.

Dilthey begins by observing that all the prominent pedagogical systems, such as those of Herbart, Schleiermacher, Spencer, Bain, Beneke, Waitz, agree in one respect, that they pretend "to define the end of education, the value of the various branches of study, and the methods of instruction, in an universally valid fashion, and consequently for wholly different times and peoples." And this pretense, says Dilthey, at the very outset of his argument,—this pretense is precisely parallel to that of the old-fashioned theories of the state,—theories which, disregarding history and the varieties of circumstance, undertook to fix for all humanity the absolute forms of political life; and, in consequence, drove men to a revolt against the whole historical social order. This sort of theorizing belonged to the seventeenth and eighteenth centuries, culminated in the French Revolution, and has been

¹ W. Dilthey, *Ueber die Möglichkeit einer allgemeingültigen pädagogischen Wissenschaft*, Sitzungsberichte der Berliner Akademie der Wissenschaften, 1888, pp. 807-832.

replaced in our day by the historical method in political science,—a method which ignores the theoretical “Constitutions” of the *doctrinaires*, and which knows that political organizations are far too vital in their individual traits to be subject to any abstract formulation of the details of the “universally valid” social order. Now pedagogy, as embodied in such “systems” as have just been mentioned, represents precisely this old fashion of theorizing. Pedagogy arose in the seventeenth century, developed farther in the eighteenth, with the “naturalistic” theories, assumed a “natural” universality of aim and method as present, under all human conditions, for the educator, and so became the “comrade of natural theology, of the philosophy of law, and of abstract political economy.” “Elsewhere,” continues Dilthey, “the historical school has replaced naturalism”; pedagogy alone has, in this respect, refused to progress. As a fact, however, human nature cannot be adequately described through any abstractly universal formulation of its traits. Human nature, as a product of evolution, differs from nation to nation, from century to century. Nor is even an abstractly universal formulation of the ethical end of life a useful undertaking. “No moral system has ever yet been able to win universal recognition” (p. 808). The ends of life can only be defined with constant reference to the vital and growing motives and impulses of concrete humanity; and as the latter change so do the ends themselves, with the ethical systems that embody them. Hence the educator cannot hope to have defined for him, with abstract universality, either the material upon which he must always work,—namely, human nature,—nor the end toward which he must always aim,—namely, the highest moral perfection of his pupil. Both these matters are modified for him by the course of evolution, and by the actual social environment.

And yet, with all this necessary limitation, does there not remain a field for pedagogical science? Yes, answers Dilthey, in case, not the abstract description of human nature, and of the ends of living, but the truly psychological study of the

typical forms of human evolution is pursued in the fashion which the historical and biological investigations of modern times have rendered possible. There are a few general laws that hold, not so much as to the content of human nature, but as to the fashion of its organic growth. These biological laws will turn out to have a practical significance. Human nature, namely, no matter how much it varies, in content or in ideals, is always in the first place a collection of impulses, of instincts, of feelings, and of tendencies (*Gefühle und Triebe*) which, from the outset of life, have a teleological character; that is, a character whereby they are adapted to the preservation of the individual in the environment in which the child is placed. These various reactions of feeling and impulse, however, these natural and teleological "reflexes," of each organism (such, for instance, as the reactions of hunger and of shyness, of curiosity and of friendliness), are at the outset, in the individual child, "not in organic connection with one another." No child begins with organized conduct. Its early impulses are as chaotic in their entirety as they are useful in their individual quality. "Observe the child; his desire for food, his avoidance of bodily injury, his social friendliness, appear all of them as isolated impulses, with no relation to the needs of his life as a whole, with no sense of their relative value. Like sunlight and shadow, one feeling chases another across his countenance" (p. 816). It is thus also with the savage. Usefulness of the single reaction, unteleological disorganization of the entirety of the reactions—such is the law of the early stages of human life. The growth, now, of mental life, "produces by continual adaptation those relations amongst" these elementary impulses, "whereby a teleological and complete unity of the character in the individual and in society" shall ideally come to pass. Such complete unity, to be sure, we none of us ever reach. No culture wins to the service of the organism and of the society the united and final co-operation of all human impulses. We all have our chaotic moments, and our anarchical desires. Nor has any form of civilization attained in its completeness the end of an entire organization of all the original impulses in

full and mutual adaptation. Nor yet, again, is an abstractly universal description of just what this unity of human life would be, accessible for us. And yet, thus, after all, is the general problem of education (not, to be sure, its general solution) to be defined for our "science." Not the one common end of life, in its precise content, but the type of human growth, in so far as it is growth, is after this fashion expressed. At the outset of life the human being is a chaos of impulses, each useful in itself, but all relatively independent. From the point of view of the highest ideal of growth, these impulses are to be brought from chaos to such complete order that not only in the individual, but in his relations to society, there shall be no chaos left, and only complete unity of life. And the educator is to do what he can to further such a growth in the child. Could we now describe in definite and material terms the content of this ideal of the perfect unity of character, could we tell what the man, and what the social order, would be like, in which the ideal were thus absolutely realized, then indeed we should have that "universal" theory of society and of education which the eighteenth century dreamed of. As a fact, however, we cannot describe the perfectly organized character because we have never seen it, and are subject in our judgment of what tends toward it to the vicissitudes and the accidents of our age and our nation. Any concrete account and picture of the ideal state that we may attempt will, therefore, have elements of chaos left in it. Any complete plan of education that we may devise will, furthermore, have defects, and only a transient significance. But there remains a sense in which the undertakings of pedagogy will be capable of scientific and general discussion. To the educator we in effect say: "Work against the chaos of impulses, by using the very impulses themselves as the material for good order. In a word, organize." Meanwhile, although the actual content of any attempted organization of life will be "historically determined," and so imperfect and transient, relatively general accounts can be given of processes that *do* increase the orderliness of the life of the child. Such accounts will take the form of "pedagogical rules," whose

number Dilthey, of course, leaves indefinite. In short, scientific pedagogy, far from telling the teacher finally and completely just what human nature is, and must be, and just what to do with it, will be limited to pointing out what does, on the whole, tend toward good order and toward the organization of impulses into character. "This is the whole province of pedagogy," as a general science. Its application to the conditions of a particular time, nation, family, and child, will be a matter of art, not of science. And "therefore, no concrete educational questions can be solved in terms of an universally valid science." Such questions will always contain elements of uncertainty, will always require the practical skill of the individual educator, and will always receive answers that will vary with time and occasion.

The concluding section of Dilthey's paper is devoted to the mapping out of the province of pedagogy as thus defined. After an historical study of the growth of education, of its social relations, and of the general ways in which the child may be considered as at all plastic to the educator's purposes, scientific pedagogy would study the typical growth of the orderly life of impulse as it is manifested (1) in the games of childhood (universally human devices these for organizing infantile impulses), (2) in the consciously intellectual growth, that is, in the perceptive, attentive, memorizing, and reflective life of childhood and youth, and (3) in the parallel processes of the organization of the will. Rules would here be suggested by the science at every point; yet they would never be rules that the educator could immediately apply, except with constant reference to the conditions of his own nation, age, and child. Universal these rules would be, yet never universal in so far as they were precise guides in the concrete case. Aids they would be, but never substitutes for personal insight. In short, pedagogy, as a "science," would be a good staff and a bad crutch.

II.

So far, in substance, Dilthey. As I summarize his discussion, I feel the necessary but disagreeable abstractness of my own

form of statement. Brevity such as this must needs do injustice to so finely conceived and thoughtfully elaborated a paper as Dilthey's. In one sense, indeed, Dilthey's essay may be said to contain little novelty. To the philosophical student its conclusions will be in some measure familiar. It is in their application to our present problem that these words are so wholesome. The lesson of the historical as well as of the biological sciences is that when you undertake to discuss the growth of a complex organism you must not expect to deduce all the wealth of the details of this life from your account of the general type of the growth itself. The practical application of this lesson is not far to seek; and yet immature theorists so often miss this application. 'Are you to interfere for a purpose with the growing organism, your knowledge of the type will be able to help you, and in so far there will be a possible science to guide your interference. If, then, you are an educator, and have to influence for a moral and social purpose the growth of a child, or of a youth, your knowledge, say of psychology, ought to aid you in your work; and in so far there will be a scientific element in education. Only there is all the while, the other, the more immediately practical side of your undertaking, namely, just the application of your insight into that typical growth as such, to the direction of your dealing with the individual living organism itself with the child, or with the youth. And just here it is the detail that will often concern you more than the type. Just what science abstracts from and ignores, just that you now most need to know. Your own surroundings, say as Frenchman or as American; your position as teacher of the sensitive child that needs tenderness, or of the rugged and sluggish child that needs awakening; your place as defender of this or of that worthy ideal, say of this religious creed, or of that, of this social tradition or of some other; your relation as private tutor to the individual child, or as public teacher to the larger class of many children; your experience of the accidental variations of just your own pupils' lives and destinies—all these things will properly interfere with anything like a truly

scientific application of your pedagogical principles. You will degrade science,—not help your children,—if you persist in seeing only the “scientific” aspects of your pedagogy. True pedagogy is an art. A noteworthy German text-book of psychiatry, now on my library shelves, observes that the alienist’s art, the care and cure of insanity, is one that “can indeed be learned, but that cannot be taught.” And yet this text-book is itself a fine little compendium of the principles of the scientific treatment of the insane. Well, if alienism can be learned but not taught, how much more shall this not be the case with pedagogy! Disease seems indeed endlessly wealthy; nervous patients furnish to the alienist a world of capricious problems. But, nevertheless, the riches of health are greater still than the riches of disease; and the art of the true pedagogue could still less be taught in its entirety than can the art of the alienist. It is abstraction that simplifies; and abstraction is invaluable to science. But he who returns from science to life is a poor pupil if he has not learned the art of forgetting his formulas at the right moment, and of loving the live thing more than the describable type.

All these observations of mine are so far mere common-places. I almost repent having written them down. And yet, from one point of view, how necessary they seem to be—necessary, alas! not only for the pedants who are continually pretending to have discovered this or that complete and scientific and final “system of pedagogy,” whereby alone all children may be saved,—but also for those unreflective lovers of child life who are indeed often so much better than the pedants, but who falsely imagine that because science cannot furnish a final “system” for all times, teachers, nations, and pupils, science is therefore worthless for the pedagogue. Both parties in such a controversy as that between these pedants and their unlearned opponents are in the wrong. There is no “science of education” that will not need constant and vast adaptation to the needs of this teacher or of that, constant modification in the presence of the live pupil, constant supplementing by the divine skill of the born teacher’s instincts.

This being true, there is, indeed, no "science of education" whose formulas will not need at the right moment to be forgotten. Yet, on the other hand, it makes great difference to you whether or no you do possess the science that you can be wise enough at the right moment to forget. Ignorance is one thing; the power voluntarily to ignore is quite another thing. The former is a weakness; the latter a high spiritual power. Universally valid your "system" never can be; therefore hold it not as system. But universally significant your scientific insight may become to you, if you once possess it, and can bear in mind that it is after all abstract, and yet noteworthy as an abstraction. Teachers then do need a scientific training for their calling. Instinct, unchastened by science, is blindly self-confident, and when it goes astray its fall from grace is irreparable; its very innocence then proves its doom. Teachers who know nothing of the reflective aspects of their calling, who do not try to comprehend as well as to love their pupils, who despise science because it cannot take the place of devotion and of instinct, may indeed be successful, and in any case, as I just said, their state, so long as by chance they do not go far astray, is vastly better than the present state of those pedants who have heard of modern science, of nerve-cells, and of apperception, and who forthwith have developed or copied some hundreds of systematic principles of "pedagogical method." The unreflective, I say, if the kindly light of nature leads them amid the encircling gloom of educational problems, are, indeed, so far, better than the pedants, who still think that God means to save his people by numbered or unnumbered paragraphs. But then, the pedants, after all, have been trying to learn, after their own fashion. They have formed a habit of learning. And if they are not already too old with their "science," they may perchance yet learn a little more, namely, that this, too, is vanity unless life supplements it. And whenever the pedants do learn this latter fact, they may take counsel of instinct and then become truly wise. For true wisdom is just reason set aglow by instinct. But the unlearned, on the other hand, are trusting only to the kindly

light of nature itself. Therefore, if by chance some will-o'-the-wisp lead them astray, they will soon be finally unable to distinguish true from false, and will perish miserably. Healthy instinct outdoes vainly abstract learning. But imperfect learning can be corrected by more instruction; while untutored instinct, once corrupted, is lost.

To both parties to the controversy, then, to the pedants with their systems and to the unlearned with their instincts, we must offer the same suggestion as to the place of science in education. On the whole, special points of difference aside, I should agree with Dilthey. There is no universally valid science of pedagogy that is capable of any complete formulation, and of direct application to individual pupils and teachers. Nor will there ever be one so long as human nature develops, through cross-breeding in each new generation, individual types that never were there before; so long as history furnishes, in every age, novel social environments, new forms of faith, new ideals, a new industrial organization, and thus new problems for the educator. So long as these things go on, the educator's calling will be an art to whose beauty and complexity no science will be adequate. But, on the other hand, it is in vain that the inadequacy of science is made a sufficient excuse for knowing nothing of it. The more inadequate science is when alone, the more need of using it as a beginning when we set about our task. For the inadequacy of beginnings is always an indication that if we are to go further we ought at least to comprehend these beginnings themselves. Instinct needs science, not as a substitute, but as a partial support. Or, as I said, when you teach, you must know when to forget formulas; but you must have learned them in order to be able to forget them.

Yet enough of these generalities. It remains, in this paper, to point out certain portions of modern scientific research that promise to be most useful to the educator, within the limits that have been set in the foregoing to all such usefulness. Of pedagogy as a single and determinate science, I have always had serious suspicions; and the reasons for these

I have now sufficiently formulated. That the teacher needs to know all that he can (1) of the subjects that he is to teach, and (2) of certain branches of science that promise to be of service to all teachers in general, whatever their special callings, I have never doubted. I reject the pedagogical system. I believe in the training of teachers. And this training, in so far as theoretical science can be of general service to its ends, I conceive to be determined by two considerations. The first is that the teacher should be, as I may word it, a naturalist, loving and, as far as may be, scientifically comprehending the life of childhood and youth, just as other naturalists try to comprehend the life of other organisms. The second is that the teacher should be a man of rational ideals, knowing what moral and social ends he wants to serve, and why he regards them as worthy. The second consideration, being, with all its importance, the one capable of the briefer treatment here, I shall put next in order. The first consideration will then be summarily dealt with as I close.

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