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JOHN DEWEY

1859—1952

A Biographical Memoir by

W. B. PILLSBURY

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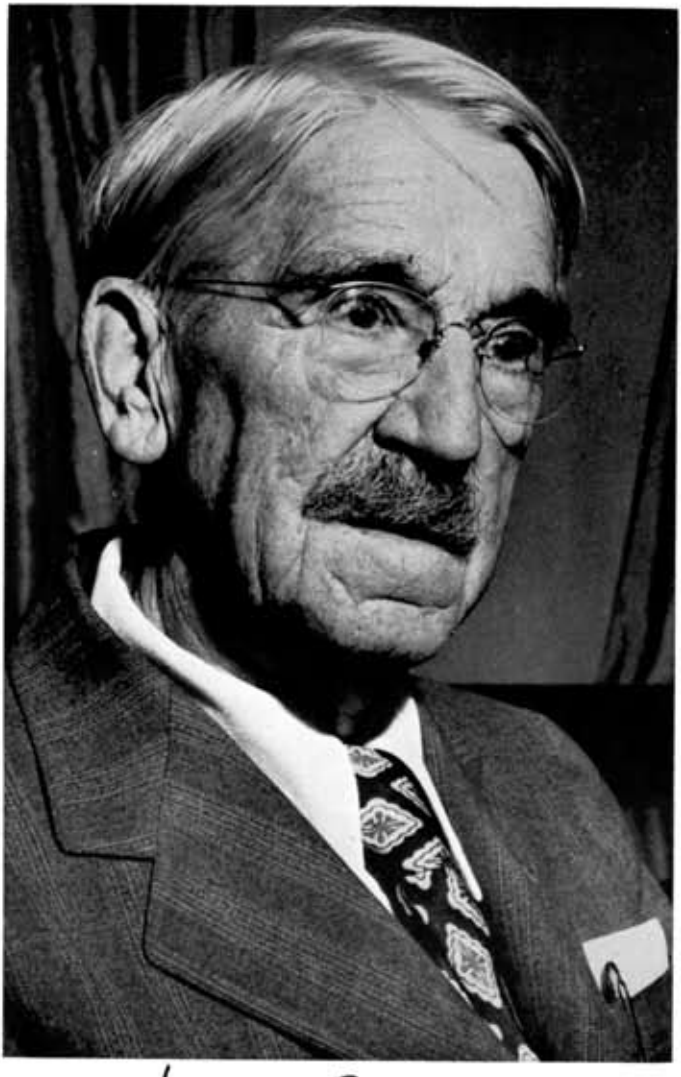

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BY W. B. PILLSBURY

JOHN DEWEY is known as a philosopher, but in his early years he wrote about as much on psychology as on philosophy. He was president of the American Psychological Association in 1899, and he was a member of the first board of editors of the *Psychological Review*. He worked in many fields and attained eminence in several of them. Dewey was elected to the National Academy of Sciences as a psychologist in 1910.

John Dewey was born in Burlington, Vermont, October 20, 1859. His ancestors on both sides were of English stock who settled in Massachusetts in the early 1630's. John's father, Archibald, proprietor of a grocery store in Burlington, married Lucinda Rich whose grandfather had been a Congressman. They had three sons. The mother was rather strict with the boys but encouraged their ambitions. All went to the public schools and John and his oldest brother, Davis Rich, graduated in 1879 from the University of Vermont. Davis Dewey was a Professor of Statistics and Economics at Massachusetts Institute of Technology during his active life. John Dewey was most influenced in college by his courses in geology and by his study of Huxley's text in physiology. In these evolution was emphasized and Huxley made much of the unity of the organism and the interactions between the organism and the environment. Philosophy was taught by H. A. P. Torrey, a man influenced by the Scotch school, but an evolutionist as well.

After graduation, Dewey taught for one year in Oil City, Pennsyl-

vania, and for another at Charlotte, near Burlington. That year he read much and enjoyed long walks and discussions on philosophy with Professor Torrey. During this year he became interested in the *Journal of Speculative Philosophy,* edited by W. T. Harris. He had been considering philosophy as a career and at the time he submitted his article "The Metaphysical Assumptions of Materialism" for publication in that journal he asked Harris about the possibilities of philosophy as a profession and of his own qualifications for work in that field. Harris accepted the article and said it showed a philosophical mind of high rank. This encouraged Dewey to write two more papers, both of which were accepted. Bolstered by Harris's opinion and the moral support of Professor Torrey, Dewey borrowed five hundred dollars from an aunt and in the fall of 1882 enrolled in Johns Hopkins University where he studied philosophy under George S. Morris. Morris had studied at Berlin and Lausanne and had won recognition by his translation of Ueberweg's *History of Philosophy,* which critics said had improved upon the original. Morris was Professor of Modern Languages at Michigan but hoped to transfer to philosophy. As the chair at Michigan was filled he temporized by teaching philosophy for one semester a year at Johns Hopkins. Morris won Dewey to Hegel's system. Stanley Hall, then editor of the *American Journal of Psychology* and later president of Clark University and distinguished in psychology and education, taught Dewey in psychology.

Dewey met an interesting group of students at Hopkins including James McK. Cattell, who was on a fellowship after studying with Wundt at Leipzig, and was later to found laboratories at Pennsylvania and Columbia; and Joseph Jastrow, who founded the laboratory at Wisconsin. During Dewey's second year he was joined by his brother Davis, who had been teaching at secondary schools. Dewey soon won the esteem of Morris and replaced him in teaching the history of philosophy during the second semester when Morris returned to Michigan. Morris also secured a fellowship for him the next year so that he did not need to borrow more money. Dewey's

thesis, on Kant's psychology, apparently was never published.

President Daniel Coit Gilman had a low opinion of philosophy, because of the undergraduate course he had taken, and had early advised Dewey to change to one of the sciences. He felt, too, that Dewey lacked social effectiveness and advised him to spend more time with men and less with books. After Dewey received his doctorate degree, Gilman renewed the advice and coupled it with an offer of a loan to permit study abroad. Before the end of the summer the problem was solved by Morris who had been appointed to the chair of philosophy at Michigan and selected Dewey as an instructor.

Dewey found a congenial atmosphere in Ann Arbor and took a prominent place in the affairs of the University and of the town. He saw much of the Morrises, who were delightful hosts. He lived in a boardinghouse where there were also two women students. In 1886, he married one of them, Miss Alice Chipman. Miss Chipman had been orphaned early and had been reared by an uncle, Frederick Riggs, who while young had come to the northern part of Michigan as an agent of the Hudson Bay Company. The marriage was eminently successful and his wife was credited with increasing Dewey's interest in social and economic problems.

He taught a course in psychology as an introduction to the course in philosophy. He became interested in the problems of education from the standpoint of psychology, and lectured frequently throughout the state on problems of attention and of learning. He also gave widely attended courses in ethics, and published two texts in the field. He was soon advanced to an assistant professorship. It is interesting to note in the light of the indifference to religion that was sometimes ascribed to him that for a time he taught a class in the Sunday School of the Congregational church.

In 1888 Dewey accepted a call as professor at the University of Minnesota. The following spring Morris died and Dewey was asked to succeed him as chairman of the department. Hough, who had been at Michigan, replaced him at Minnesota and James H. Tufts was appointed to the vacancy at Michigan. Tufts under Dewey's en-

couragement organized a psychological laboratory at Michigan, one of the first to be established in America. Tufts was called to Chicago when the University opened in 1891 and George Mead and Alfred H. Lloyd were appointed in his place. Dewey credited Tufts and Mead with an important influence on his later thinking.

With J. A. McLellan of the University of Toronto, Dewey published *Applied Psychology: an Introduction to the Principles and Practice of Education,* in 1889.

In 1894, probably at the suggestion of Tufts, Dewey was invited to Chicago as chairman of the Department of Philosophy, Psychology, and Education. His interest in education had been growing and the fact that he was to be in charge of that work at the University was an important factor in his accepting the new post. He took Mead with him and called James Rowland Angell, son of Michigan's president, and his student at Michigan, to take charge of the psychological laboratory.

The change for Dewey was great. At Michigan he had dealt largely with undergraduates in large classes, while at Chicago his work was mostly with graduate students in seminars. He continued to give courses in ethics and in logic. Methods of thinking and investigation had long been central in his work and continued to be. While at Michigan he had promised to write an "Instrumental Logic" for Muirhead's Philosophical Library, published in London. Early volumes of the Library for several years listed it among the coming works, but it was never written. In the decennial series published to celebrate the anniversary of the founding of the University of Chicago, Dewey edited a volume from his students called *Studies in Logical Theory*. He contributed a study of Lotze's logic. The volume was welcomed heartily by William James for the similarity of its principles with his own pragmatism. That undoubtedly contributed to its comparatively wide recognition.

Dewey's work at Chicago is best known for his Laboratory School. This he developed on the theory that teachers could best be trained by actual practice, just as a science must be taught by actual labora-

tory work. He raised the funds for the school from the parents of students and by lecturing publicly on educational subjects. The University did not subsidize it except by giving free tuition to its teachers. Dewey included these lectures in his famous book, *School and Society*. The book had a very wide influence and was translated into many languages. The school flourished under the direct guidance of Dr. Ella Flagg Young along the lines of Dewey's theories. Dr. Young was later Superintendent of Schools in Chicago.

The school was also the cause of Dewey's leaving Chicago. Friction over the school had developed within the administration of the University and came to a crisis in the early years of the century. Dr. Francis W. Parker, who was head of a Chicago Normal School, had developed a practice school to be free from the political influence of the Chicago schools. This school was taken under the wing of the University during Professor Parker's prolonged illness and the two practice schools worked side by side without common connection. Then, while Dewey was away on a brief lecture tour, the two schools were merged without making any provision for the salaries of teachers in the Dewey School. A compromise was worked out for a time and both schools were brought under the Department of Education of which Dewey was chairman, but Dewey felt more and more that the administration did not sympathize with his theories of education and that he would continue to be hampered in his work, so he resigned in 1904 without knowing what he was to do next.

He wrote of his predicament to several friends in other schools, among them Professor Cattell who was then chairman of the Department of Psychology at Columbia. Cattell secured him a professorship of philosophy at Columbia with the condition that he should give some courses at Teachers College. Dewey and his family had decided to spend the interval between employments in Europe and so sailed for England where Dewey spent the summer. One child, Gordon, contracted typhoid on the ship from Montreal and died. Mrs. Dewey took the other children to the Continent to study lan-

guages and Dewey joined them in Venice in the following spring.

Dewey's work at Columbia followed about the same pattern as at Chicago. He continued to deal mainly with graduate students, but lectured to large classes at Teachers College. These, too, were mostly graduate students but were treated in the mass. Practice teaching was taken care of by others, without direct control by Dewey. Dewey found a congenial group of colleagues at Columbia, although they represented many schools of thought. An influence was a club of philosophers from colleges in New York and vicinity that met to discuss various professional and related problems.

In addition to teaching and research at Columbia, Dewey was active in all sorts of social and political movements. He was always a liberal and much interested in all measures for the advancement of the economic and political position of mankind. He took an active part in the votes-for-women movement, even to marching in suffrage parades. He was a charter member of the Teachers Union in New York and was also active in the formation of the Association of College Professors, of which he was the first president. He supported Theodore Roosevelt in 1912 and La Follette in 1924. His family had been devoted Republicans in Vermont, but Dewey was an independent, much to the concern of his father who lived with him for a time in Ann Arbor.

Dewey traveled extensively in middle life. He lectured at the University of Tokyo the second semester of 1918-1919. The following year he accepted an invitation to teach in China at Peking and Nanking. He departed from his subject to advocate democracy in Japan and China and was greeted with acclaim in both countries. More directly effective was Dewey's visit to Russia in 1928. It was at a time when there was a movement toward liberalizing education and adopting a cooperative attitude between student and professor. He came into contact with a number of the more liberal men in education and was so favorably impressed that he wrote some articles suggesting a promise of political advance in Russia.

From this work in Russia he became involved in the dispute

between Stalin and Trotsky and was asked to head an unofficial commission to report on the issues between the two. The commission made a review of the published reports and also went to Mexico City, where Trotsky was living, to interview him. The testimony in detail was published in a large volume compiled directly by Susan La Follette under the title *Not Guilty*. The conclusion reached was that Trotsky had not indulged in any treasonable acts nor in any of the other disloyal behavior that had been attributed to him. Dewey remarked after that case was finished that the only difference between fascism and communism was of the Gestapo and the GPU. Dewey's early, somewhat favorable report on Russian education led to his being classed by the more conservative as communistically inclined, while the report of his commission brought criticism from the left wing that he was ultraconservative or even a Nazi. Dewey's opinion was that recent political moves showed that reform is not to be had by revolution, but by gradual education.

In 1927, after a long illness caused by arteriosclerosis and heart disease, Mrs. Alice Dewey died. In 1946 he married Mrs. Roberta Grant of New York City. They adopted two children.

Dewey published frequent contributions on philosophy and on more popular topics until the end of his life. Many of the books of his later years were written on invitation. *The Quest for Certainty* consisted of the Gifford Lectures delivered at the University of Edinburgh in 1929. *Art as Experience* was the first William James Lecture at Harvard in 1930 and was published in 1934 in New York and London. He wrote separate chapters in books by friends or students and introductions to books on many topics. He wrote articles and book reviews for the *New Republic* several times a year, as well as for special philosophical periodicals, such as the *Journal of Philosophy* and the *Philosophical Review*.

Dewey's eightieth birthday was celebrated by the publication of *The Philosophy of John Dewey*, the first of "The Library of Living Philosophers," edited by Dr. Paul Schlipp of Northwestern University. It consisted of a series of statements by students or colleagues

on Dewey's contributions to different phases of psychology, philosophy, and education, together with appreciation and criticisms of his system by Russell, Santayana, and Whitehead. In connection with these, Dewey wrote a ninety-page discussion acknowledging points of agreement, indicating sources of error in interpretation, and replying to those who differed with him. This is one of the most comprehensive statements of his whole system. On the occasion of his ninetieth birthday, the *New Republic* published a commemorative number with appreciations of his work in various fields of activities by authorities of distinction in each. On his actual birthday anniversary his friends and admirers gave a banquet in his honor at which messages were read from eminent men in this country and from men high in the governments of many foreign countries.

Dewey died in New York, June 1, 1952.

Dewey's publications were numerous and covered a wide range of topics, professional and popular. During the seventy years he worked he markedly changed his point of view several times. To the scientist two phases are important: his early contributions to psychology and recognition as a psychologist, and his thoroughgoing adoption of scientific ideals. The latter is shown by his dislike of dogmatic statement and his reliance upon fact above system. The second assertion seems inconsistent with his early acceptance of Hegelianism, which in statement at least is almost thorough dogmatism. Dewey came to Hegel after some conflicts in early life between religious and other ideals. In an article in *Contemporary American Philosophy* he writes of the inconsistencies as producing an "inner laceration." "My earlier philosophic studies had been an intellectual gymnastic. Hegel's synthesis of subject and object, matter and spirit, the divine and human, was, however, no mere intellectual formula; it operated as an immense release, a liberation. Hegel's treatment of human culture, of institutions and the arts, involved the same dissolution of hard-and-fast dividing walls and had a special attraction for me." He admits that his critics who find a trace of Hegel in his later writings are probably right. He even adds:

"Were it possible for me to be a devotee of any system, I should still believe that there is greater richness and greater variety of insight in Hegel than in any other philosopher. That in spite of the fact his schematism seems to me artificial to the last degree." [1]

In the same article he traces his development from Hegel. "Hegel's idea of cultural institutions as an 'objective mind' on which individuals were dependent in the formation of their mental life fell in with the influence of Comte, of Condorcet and of Bacon. The metaphysical idea that an absolute mind is manifested in social institutions dropped; the idea, upon the empirical basis, of the power represented by a cultural environment in shaping the ideas, beliefs and intellectual attitudes of individuals, remained. It was a factor in producing my belief that the not uncommon assumption in both psychology and philosophy of a ready-made mind over against a physical world as an object has no empirical support. It was a factor in producing my belief that the only possible psychology apart from a biological account of behavior is a social psychology. With respect to more philosophical matters, the Hegelian insistance upon continuity and conflict persisted on empirical grounds after my earlier confidence in dialectic had given way to scepticism. There was a period in my earlier years in Chicago, in connection with a seminar on Hegel's Logic, I tried reinterpreting his categories in terms of readjustment and reconstruction. Gradually I came to realize that what the principles actually stood for could be better understood and stated when completely emancipated from the Hegelian garb." [2]

Dewey's first book was *Psychology,* published in 1886. It appeared four years before James's *Principles of Psychology* and before many laboratories had been established in America. The approach is empirical and uses many results of the works of Wundt and other German experimentalists. Brett, the historian of psychology, says, "It is the proclamation of a new era. . . . The work was not pretentious, but it had great significance." The work scrupulously

[1] *Contemporary American Philosophy,* New York, 1930, p. 19.
[2] *Ibid.,* p. 21.

avoids all use of faculties as causes, even if there are occasional slips into forms of speech of older schools and of popular usage. Mind, for example, is denied existence as an entity, but is once mentioned as causing attention. He asserts that recognition of the self is only the acceptance of what is involved in every act of knowledge. He has chapters on sensations, followed by discussions of the relations, such as association. Apperception is introduced as the highest form of connection, in the sense that relations give meanings to mental processes. He has a chapter on intuition in Hegel's sense of giving unity to the diversity of separate states, constituting the last state of the ideal mind. He has other chapters on feeling and will that aid in organizing cognitive and affective experiences into a distinctive personality.

As a member of the first board of the *Psychological Review* he published articles in several of the earlier volumes. The most empirical of these was a note on the relative number of nouns and verbs in the young child's speech. In the second and third volumes of that journal he criticizes the famous James theory that emotion is merely an awareness of expressive movements on the ground that James does not go far enough, in so far as he assumes that there is some mental process before the bodily reactions are evoked. He also argues that James does not make enough of the setting in which the stimulus acts and of the goal of the individual before stimulation.

Possibly the most important of Dewey's contributions to early psychology was the "Reflex Arc Concept," in the *Review* for 1896. In this he insists that in the past the reflex had been considered too much in isolation from its setting, as the mere response of a muscle to its stimulus. He argued that the reflex was always to be considered in connection with the external situation and the mental context. Applying James's instance of the child reaching for a candle, one must consider the directing influence of the eye and the purpose for which it is a part. In this not only the stimulus or the movement, or the sensation of the candle or movement as elements, but the function of the whole and the sequences in the total

act must be taken into account. He also asserts that the effects of the response are seen in the future life of the child. Immediately the movement increases the knowledge of the stimulus as well as being the outcome of the stimulus. In this sense Dewey insists that reflex is a circle, not merely an arc. Factors in the whole work forward and backward. He reiterates, in his explanations of mental life, the interrelations on all parts of the whole. This article was an important factor in the development of the functional school, in which Angell opposed mental acts or functions to the sensory structures that Titchener made the content of psychology.

Another important contribution to psychology and a step in the formulation of his philosophy was *How We Think,* published in 1910, revised in 1933. The book stated specifically Dewey's formulation of methods of investigation that he had developed gradually in his earlier work and probably best characterizes his system. Dewey had little faith in the formal logic of Aristotle and his followers down to most recent times and both reformulates the problems and changes the application of many terms. Dewey believed that men think only because they must. As long as habit and old routine give satisfaction one goes along with little thought. When these fail or give unpleasant results, reasoning begins. He gives five steps or stages in the process. "(1) First is the presence of an obstacle to progress, a felt difficulty; (2) location and appreciation of the difficulty; (3) suggestion of a possible solution; (4) development by reasoning of the bearing of the suggestion; (5) further observation and experiment leading to its acceptance or rejection; that is the conclusion of belief or disbelief." These sometimes coalesce in experience, especially (2) and (3). Dewey always objected to stereotyping of statements, even in his own theories. Activities all take many forms, but one can distinguish these five steps in most concrete thinking. He makes little distinction between solving the minor problems of everyday life and the reasoning of the scientist or philosopher. The book was written in the Columbia period of his life and has many

references to training in the schools, but Dewey applies it to the most advanced and abstract thinking as well.

The first step needs no comment. It merely states the occasion or thought. The second step is the reference of the difficulty to some familiar class or to some remembered similar situation. For the driver of a car that has stopped suddenly, it may mean asking how much gasoline is in the tank or the recognition of some strange sound in the mechanism. For the physician it is the reference of symptoms to some known disease. Appreciating the source is the first approach to removing the difficulty. The third step is the active one—suggesting a cure or an improvement. Even here no rules can be given that will surely supply a cure. The suggestions that arise vary with the knowledge of the thinker and his attitude at the moment. Two general rules are not to accept a suggestion too readily and on the other hand to be confident that a solution can be found and persist in seeking a remedy. For any difficult problem many suggestions will arise and be rejected before one is accepted. Versatility in suggestion and accuracy in distinguishing the satisfactory from the false are characteristic of the good thinker.

The fifth stage, confirmation, takes many forms. If some construction is involved the final test is to build the apparatus and see if it works. Many scientific experiments consist in developing instruments that will measure the cause and the effects, and noting the relations between them. In cases that cannot be controlled at will, as in astronomy and geology, observation and the correlation of all appropriate facts offer a test of the degree of harmony between hypothesis and fact. This test may take a long time and be open to much controversy before agreement is reached. But test and confirmation is always needed. Belief or disbelief is the final result.

Dewey insisted on the need for developing a consistent vocabulary for logic, psychology, and philosophy in general. He asserted that many difficulties arise from the use of words that have meanings in older systems inconsistent with recent beliefs. He insisted that words should not be mistaken for ideas nor should words be used that

imply entities that do not exist. With Arthur F. Bentley[3] in one of his last books he suggested a list of words that might be used by philosophers to avoid vagueness. The list is valuable and if adopted would reduce the ambiguities in the field. One would still have to take account of the context that is as important in determining the meaning of the word as is the word itself. That language, even technical language, at present fails in exactness, and in consistency, the authors make very evident. Of course any new set of terms will be accepted with difficulty. The suggestions are certainly worth while, but Dewey's fifth stage in thinking, confirmation, is still to come.

Dewey's contributions to education are most widely known. His program of education developed from his theory of thinking on the one side and from his recognition of the importance of interest that is aroused by problem solving on the other. Dewey asserted that all teaching should consist of presenting problems and permitting the child to solve them for himself. Success in education depends upon selecting problems that cover the facts essential to life. He believed traditional education suffers from giving the child facts out of context and with no incentive except praise for success and punishment for failure. Even manual training was used by him to increase special skills, and not as an occasion for developing problems. In his Laboratory School real problems were set and the child left free to solve them in his own way. Some arose from the environment in home or school, others were devised by the teacher. The problems changed with age. Children up to eight dealt with the problems of personal family life. Between eight and twelve the range widened to the problems of society and involved the use of books as well as of things. Dewey believed that all knowledge could be presented in solving suitably chosen problems.

Dewey early justified his method by a modification of Herbart's notion that mental operations are determined by what is already

[3] Dewey and Bentley, *Knowing and the Known,* Boston, Beacon Press, 1949.

known. The gaps and apparent inconsistencies give rise to curiosity and solving the problems gives pleasure in the form of interest. Learning under compulsion involves effort and is on the whole ineffective. Dewey's methods have been applied throughout the world. Some opposition has developed on the ground that the method is too soft and emphasizes method at the expense of essential content. Supporters reply that this is due to insufficient skill on the part of teachers who use it. It is probably still the dominant method in America.

Dewey touched on almost all fields of philosophy in the course of his career, and affected many other fields. In all of his work he emphasizes method rather than content. He was much more concerned to remove prejudices and limitations to free inquiry than to establish doctrines. A brief summary of some of the fields may indicate the extent of his contributions and the common spirit in all of them.

Dewey wrote on ethical problems soon after publishing his work on psychology. Beginning at Michigan with two books for his students, he then collaborated with Tufts in a more comprehensive work after going to Chicago. His ethics illuminated his general principles. The measure of a good man is the degree of his adaptation to his environment and to society. Ethical values differ from scientific ones. They cannot be definitely measured, as can scientific forces or objects. They can only be estimated. Dewey accepted none of the traditional criteria of the older theories. Good is not of itself pleasant, as the hedonist argues. It is not intuitive, as the conscience theories assert, and it is not directly religious, as the theologian teaches. A good man is the man who is thoroughly adjusted to his environment and to society in that environment. How one is to know when an individual is adjusted is not said. On this theory adjustment could be determined only by trial, so the measure of a formula for conduct could be known only by earlier tests, and then by the opinion of fellow men.

The same criteria apply in aesthetics. The beautiful object is a

complete whole that expresses unity, possibly after diversity. At the extreme it may give order after chaos. The aesthetic object shows balance and good proportion and is suited to attain a purpose. In this sense aesthetic appreciation is an awareness that an object or experience fits well into the environment, is a unit in itself, and harmonizes with the wider unity of the whole.

Dewey is reserved in his discussion of religion. He seldom deals with the subject and then commits himself only in the most general terms. He would define religion as acceptance of ideals of conduct that are to be realized in actual life. Acceptance of these ideals and then striving to have them accepted by society is the important aim of all forms of religion. Dewey is of the opinion that they may be realized more fully if divorced from the diverse rituals and special dogmas of different cults. He nowhere questions the importance of religion in human society, but objects to the attachment of the ideals to what is ordinarily accepted as supernatural. He would keep the essentials of religious belief and use them to unite all men to strive for good ends, but reserves opinion on many of the forms that traditional religions have taken.

Dewey was essentially scientific in his approach to all problems. His attitude is altogether empirical. He rejects all dogmatic preconceptions of ultimate entities and forces and tests all assertions by his pragmatic principle that anything that works is true. This eliminates many asserted ultimates of the nature of mind and matter and of their interrelations, and substitutes observations of experience for deductions. All his life Dewey was more interested in the methods that may be used to discover truths than in the conclusions that are obtained by them. He is concerned to consider all possible views and obtain from them the best conclusions possible with the knowledge available at the titme. Differences of opinion are to be welcomed as a promise of future progress.

Dewey's attitude toward science is possibly best expressed by the Gifford Lectures, published under the title *The Quest for Certainty*. He mentions therein the work of Eddington and Einstein as typical

of scientific investigation. He asserts that these men remade science by developing new concepts and by testing them showed that they harmonized with the experimental results of themselves and others. He asserts that complete scepticism is the attitude of scientists, a scepticism that they hope to overcome by more experiments or observations. The conclusion of *The Quest for Certainty* is that certainty can never be attained. This theory has the advantage that it always calls for new work—work that opens new vistas and gives new incentives to progress. Not to attain certainty but to be ever in search of it is the goal, or at least the fate, of the scientist.

The quantity of Dewey's contributions is impressive. In seventy years he produced about a thousand articles and books. Few men have contributed to so many fields and exerted so great an influence for so long. He modified the ideas of education in many countries. Psychology profited by the contributions of his early years and the psychological turn that he gave to many philosophical problems. His ever open mind was distinctive of the scientist.

Dewey received many honors at home and abroad. He was a correspondent of *L'Institut de France,* president in 1905 of the American Philosophical Society, and recipient of honorary degrees from many universities.

I desire to thank Professor James Gutman of Columbia University for the use of material bearing on the later years of Dewey's work.

KEY TO ABBREVIATIONS

Journ. Phil. = Journal of Philosophy
Phil. Rev. = Philosophical Review
Psych. Rev. = Psychological Review

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