

tion to the concept of evolution: "When the whole universe seems only to be making itself valid and to be still incomplete (else why its ceaseless changing?) why, of all things, should knowing be exempt? Why should it not be making itself valid like everything else?"²² John Dewey says "that there is change going on all the time, that there is movement within each thing in seeming repose; and that since the process is veiled from perception the way to know it is to bring the thing into novel circumstances until change becomes evident. In short, the thing which is to be accepted and paid heed to is not what is originally given but that which emerges. . . ."²³

To the pragmatists, then, the universe was open. Reality was not something given, something to be discovered, something with fixed feature; it was open, alterable, and changing. For Peirce, according to one interpreter, "laws, like habits, are 'emergent' principles which characterize only certain limited phases of the evolutionary process. In this sense, laws themselves are mutable. . . . There is, however, no universal law of development. . . . The universe as a whole is fundamentally open-ended. . . ."²⁴ Ac-

²² William James, "A World of Pure Experience," *ibid.*, p. 235.

²³ Dewey, *op. cit.*, p. 114.

²⁴ Aiken, *op. cit.*, p. 62.

ording to Dewey, fixity, where it apparently existed, was not something to be observed, recorded, and admired. "Rather, the experimental method tries to break down apparent fixities and to induce changes. The form that remains unchanged to sense, the form of seed or tree, is regarded not as the key to knowledge of the thing, but as a wall, an obstruction to be broken down."²⁵ What were once conceived as enduring realities Dewey would have us view as temporary obstacles.

Primarily a Method

Pragmatists agreed with one another that theirs was primarily a method. In terms of the above elucidation, it should be clear that it was a method for operating in a world of flux and change. Change and development do not adequately describe the world view of these pragmatists. The universe must also be described as in a state of flux, for there is no necessary direction to its development. Men located in a world where things are forever fluctuating may be likened to someone embarked on a voyage into perpetually uncharted seas. There would be great need, in these circumstances, for something by which to steer. Peirce, James, and Dewey proposed that pragmatism should be that guide.

²⁵ Dewey, *op. cit.*, p. 113.

They accepted a method, then, to replace the knowledge they had repudiated. The model for that method, or so they believed, was the scientific method. Someone has observed that pragmatism is not so much a philosophy as a way of doing without a philosophy. With equal justice, it should be observed that pragmatism is not so much a method for acquiring knowledge as a means of operating in lieu of knowledge and certainty. At any rate, pragmatism resulted from the efforts of the founders to render the scientific method, as they understood it, into a philosophy. These men were conscious that this latter was what they were doing. Peirce declared that after the "gibberish" of metaphysics had been swept away, "what will remain of philosophy will be a series of problems capable of investigation by the observational methods of the true sciences. . . ."²⁶

Confusion of the Scientific Method with Technology

It should be made clear, though, that the scientific method James and Dewey, at least, had in mind was not the method as it received its classic formulation in the seventeenth century. That was a method designed for and aimed at *discovering* and *describing* the

²⁶ Peirce, *op. cit.*, p. 144.

laws in the universe — what is today vestigially referred to as "pure" science. Rather, the conceptions of the pragmatists were based on the technological applications of science. The scientist, as technologist, is concerned with ways to reshape, reform, and reorder natural things. Such technologists have had (and are having) remarkable successes. It has been stated so often that it is now a cliché — but it will bear repeating in this context — that these technological achievements rest upon prior achievements in "basic" science. The meaning is, or should be, that technologists achieve their effects because of a knowledge of underlying laws which preceded their labors. Their work rests upon a foundation of laws, regularities, and established connections.

This is precisely the point which James and Dewey, particularly Dewey, missed. They apparently thought that the technologist was doing what he appeared to be doing — experimenting at random until he came up with something, then going on to other modifications and experiments. Dewey conceived of the scientist not as discoverer but as innovator. Scientific knowledge is obtained, he declared, by the "deliberate institution of a definite and specified course of change. *The method of*