PERSONALITY AND EPISTEMOLOGY: COGNITIVE SOCIAL LEARNING THEORY AS A PHILOSOPHY OF SCIENCE

by James W. Jones

Abstract. Implicit in the cognitive social learning model of personality as articulated by Walter Mischel, Albert Bandura, and others, is an epistemology which emphasizes the activity of the mind in the construction of knowledge. Using Mischel's five person variables as an outline, the epistemic implications of this model of personality are developed and then illustrated by application to William James's typology of the religious personality and to the current debate over hermeneutic and empirical approaches to studying human behavior. This approach explicates the connection between personality characteristics and epistemological approaches in terms of cognitive social learning theory.

Keywords: epistemology; hermeneutics; social learning theory.

In the course of the twentieth century, a shift within psychology towards a more environmentally focused approach to understanding behavior brought with it significant criticisms of the model of human nature as consisting of invariant traits and dispositions. Such a model was found to have little empirical support or predictive value: careful studies of individual behavior found little cross-situational consistency, and predicting behavior on the basis of hypothesized individual traits was no more accurate than predicting it on the basis of actuarial statistics (Mischel 1968). These criticisms provoked decades of vigorous debate between proponents of individual, trait-based models of personality and advocates of environmentally based theories. The debate has, in turn, spawned a host of new approaches to modeling personality, one of which is a cognitive social learning model. Drawing on the work of Albert Bandura (1982), Walter Mischel (1979), and others, this model currently is being exploited by researchers from a

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variety of psychological specialties (Cantor and Kihlstrom 1982; Mischel and Peake 1982).

This paper suggests that the implications of social learning theory extend beyond the domain of psychological research into that of the philosophy of science. The central theses of the paper are: first, that a cognitive social learning theory of personality implies a constructivist epistemology in which the mind is seen as an agent in the construction of knowledge; and second, that there is a connection between an individual's personality characteristics and his or her epistemological outlook, a connection which can be accounted for in terms of cognitive social learning theory. Put another way, the social learning model of personality is also an implicit philosophy of knowledge, and the research behind social learning theory offers some empirical support for a constructivist view of knowledge as found in many schools of contemporary philosophy of science (Goodman 1984; Jones 1981). In the following pages this thesis will be spelled out by elaboration of the cognitive social learning model of personality and then illustrated by application to William James's model of once- and twice-born religious types and to the current controversy between hermeneutical and empirical methodologies.

Cognitive Social Learning Model of Personality

Starting with his 1969 book, Mischel's focus has been on models of personality, culminating in the development of what he has called "a cognitive, social learning" model of personality. Such a model moves away from concern with global and enduring personality traits (in keeping with the argument of his 1968 book) and focuses instead on the specific cognitive variables which "mediate the manner in which new experiences affect" the individual (Mischel 1973, 265). He describes five such cognitive mediators.

First are the individual's *cognitive and behavioral construction competencies* (Mischel 1973, 265). Implicit in the title itself is the image of the mind as an agent whose activity is crucial for understanding personality and behavior. In this vein, Mischel writes of "the person's cognitive activities—the operations and transformations he performs on information.... Rather than mimicking observed responses or returning memory traces from undisturbed storage vaults, the observer selectively *constructs* (generates his renditions of 'reality'" (Mischel 1973, 266, italics in the original).

In his work on children's strategies for self-control, Mischel has discovered that the cognitive transformations which children make on a tempting stimulus in front of them govern how long they can delay consuming it (Mischel 1979). Mischel summarizes: "We found that the

effects of the actual rewards physically present or absent in the situation would be completely overcome and even totally reversed by changing how the child represented those rewards mentally during the delay period" (Mischel 1979, 750). It was not the naked stimulus but rather the cognitive representation of it to which the child responded and which therefore influenced his or her behavior.

Along this same line, Bandura's work has demonstrated that the individual's appraisal of his or her performance may have more impact on subsequent accomplishments than the actual performance itself. From a series of studies of fear and avoidance behavior Bandura concludes, "the notion that fear regulates avoidance behavior has been extensively tested and found seriously wanting. . . . Self-efficacy theory posits that it is mainly perceived inefficacy in coping with potentially aversive events that makes them fearsome" (Bandura 1983, 464). According to Bandura it is not the situation or even the emotional reaction to it that affects how one will act but rather whether or not one perceives oneself as able to handle it competently.

In a series of studies based on a graduated treatment of phobics, in which subjects were asked to rate their perceptions of how they would do on a task before undertaking it, Bandura found that "people are influenced more by how they read their performance successes than by the successes per se[; thus] perceived self-efficacy was a better predictor of subsequent behavior than was performance . . ." (Bandura 1982, 125). Not simply the situation but rather one's perception of oneself in relation to the situation governs one's behavior in it.

The reality to which we respond is the reality created by our cognitive construction competencies. Our environment can no longer be seen as simply a set of raw stimuli. Rather, it is a context of information created by the activity of our mind.

The second cognitive variable Mischel calls *encoding strategies and personal constructs* (Mischel 1973, 267). Encoding strategies refer primarily to the selectivity which the cognitive processing system exerts on incoming stimuli. Different people may thus respond to the same stimulus situation very differently, in part because as Mischel says, they "readily perform *cognitive transformations* on stimuli" (Mischel 1973, 267, italics in the original). People encode information in ways that fit with their already existing cognitive structures (see, for example, Goldfried & Robins 1983) and make decisions about it on the basis of various heuristic processes (Taversky & Kahnaman 1974). Thus, not only is the world to which a person responds constituted by the activity of the mind creating information out of stimuli; in addition that world of information may be relatively idiosyncratic due to the variety of encoding strategies and cognitive constructs upon which people draw (Cantor & Kilhstrom 1982).

Crucial to all information processing theories is the term *schema* (see, for example, Cantor & Kihlstrom 1982; Goldfried & Robins 1983). Schemata are those cognitive structures that allow us to organize incoming information and bring it to bear on new situations. If I hear that Sam is a student, that allows me to understand the sentence "Sam is preparing for class" because I have some framework that tells me about students and what they do. I would understand the sentence differently if I had just heard that Sam is a professor or the janitor responsible for setting up chairs in the classrooms.

A critical function of schemata is to select the information we attend to and therefore learn; they govern what is remembered and how it is encoded in memory and thus how it can be retrieved later. Thus schemata tend to limit the information that gets into the cognitive system and the ways it can become available later on. Such restrictiveness is inevitable; to organize necessarily means to limit and select. Such primary cognitive structures are also highly resistant to change. Again, such cognitive intransigence is both inevitable and adaptive: inevitable because schemata control the information that gets into the system and thus tend to exclude any potentially disconfirming, contra-schematic data; adaptive because only chaos would result if people easily and frequently changed their fundamental perceptions of the world. Mischel (1973) suggests that the sense of stability that is usually associated with the term *personality* may be a function of the stability of these schemata.

There is an obvious similarity between this notion of schemata and Thomas Kuhn's notion of paradigm (Mahoney 1980; Meichenbaum & Gilmore 1984). What a paradigm is to a community, a schema is to an individual; or a schema is an individual's paradigm. Both terms refer to the most fundamental epistemic category which governs the way in which information is attended to (or not) and processed (or not). Being so fundamental, they are very difficult to discover (since any investigation of a schema is a cognitive process taking place in the context of some schema) and to change (since they regulate the flow of information into the system). The way information is encoded and retrieved creates the cognitive world in which we live and act—a world largely shaped by the schematic processes at work within our mind.

Mischel's third cognitive variable involves *expectancies* (Mischel 1973, 269). He reviews a variety of studies which demonstrate that people make choices and act on the basis of their perception of the outcome of these choices. Expectancies "guide the person's selection (choice) of behaviors from among the enormous number which he is capable of constructing within any situation" (Mischel 1973, 269). There is evidence that conditioning works in human beings by creating sets of

expectations and that accurate information about these contingencies has a more powerful effect on behavior than the reinforcements themselves (studies reviewed in Mischel 1973 and Brewer 1974). Often what appears like conditioning in human beings, and perhaps in lower animals as well, is rather learning sets of expectancies (Bolles 1972; Brewer 1974). What appears as maladaptive behavior may often be the result of mistaken expectancies—that I'll be rejected if I assert myself or will fail if I try an ordinary task. Frequently when expectancies change, behavior changes as well (relevant studies reviewed in Mischel 1973, 269-272). Crucial, then, to understanding people's actions is understanding what they expect will follow from those actions.

The image here is of an individual actively seeking to make sense of the world of experience by cognitively transforming that kaleidoscope of stimuli into a coherent form. A crucial element in making sense of the world is the construction of expectancies by which events are linked together.

The fourth person variable is *subjective stimulus values* (Mischel 1973, 272). It is a common perception that people behave differently in the same situation. One reason for this, Mischel suggests, is that they value contingencies differently. Again, he reviews a series of studies that show that assessing people's subjective preferences and aversions is an accurate way of predicting what they will do in a given situation (Mischel 1973). Such personal evaluations can be powerful influences on behavior. Not only do people differ in what outcomes they expect from the same situation, they also differ in the extent to which they value those various outcomes. To tell a child that he will get a chocolate ice cream cone if he does his homework will only motivate him if he likes chocolate ice cream; one person may ask for more time with his or her spouse as a way to improve their marriage while another may seek more time alone. There are no such things as objective stimulus situations because different people will value the same stimuli differently and respond accordingly.

The fifth person variable involves *self-regulatory systems and plans* (Mischel 1973, 273). The strict behaviorist model (Skinner 1953) stressed the way in which behavior is determined by external contingencies. A great deal of research has recently been devoted to the process of self-regulation, all of which demonstrates that rather than simply being pulled about by external contingencies, people do impose on themselves patterns of self-control (Meichenbaum 1977) and regulate their own behavior through a variety of cognitive maneuvers. They set goals, establish priorities, and cognitively transform those contingencies in a variety of ways. Even children, Mischel (1973) notes, do not simply respond to stimuli but rather impose on themselves plans and

procedures which govern their behavior. Mischel's work on delay of gratification demonstrates that even very young people can choose to forgo very enticing rewards by cognitively revisioning the rewards from something attractive to something relatively unappealing (Mischel 1974). The whole process by which people learn to control their behavior is increasingly seen as one in which cognitions play a crucial role. Images of agency like *choice*, *self-regulation*, and *reciprocal determinism* are a part of the vocabulary of cognitive social learning theory, balancing the focus on the external environment with concern for the person's initiative in regulating his or her own actions.

Historically, science begins in Cartesian fashion, doubting the existence of a phenomenon, then struggling to consider whether such a phenomenon might be "real," and finally trying to describe the regularities and structures which the previously denied phenomenon in fact exhibits. Great scientists at the beginning of modern astronomy refused to believe in tides or meteorites; later the understanding of such phenomena became crucial to the development of Newtonian physics. When J. J. Thomson proposed the idea of subatomic particles, his colleagues thought he was joking and ridiculed his experiments as parlor games. Now the specification of the patterns of behavior of such particles is a major task of contemporary physics. Likewise with the active mind; for much of this century, experimental psychology has doubted its existence. Now Mischel, Bandura, and the cognitive psychologists on whom they draw are studying what patterns and regularities characterize the mind at work.

While not an exhaustive list, Mischel's five person variables are a useful way of summarizing much of the recent research on the power of cognition to shape behavior. Implicit in all of this is the image of the mind as an active and creative force which constructs a coherent reality, encodes information selectively, chooses actions on the basis of values and expectancies, and imposes structure on its own actions.

Another feature of Mischel's cognitive social learning model, and of all cognitive processing theories, is that they move from what James Mancuso and Seth Ceely (1980) call *mechanism* towards what they term *contextualism*. Most previous theories of the mind were based on a linear notion of causality. Given this notion of causality, the mind could be either totally passive, the blank receiver of information imposed upon it from outside, or totally controlling, imposing its categories on a blank and unknown external world. Information processing models are akin to cybernetic theory in which terms like *feedback* and *reciprocity* predominate. "Reality" (Mischel's 1973 quotation marks as well as my own) emerges out of the interaction of the external world and the activities of the mind. The heuristic usefulness of person variables, Mischel

(1973) argues, is that they provide a structure in which the specifics of that interaction can be studied for a given person in a particular situation.

They also underscore the image from contemporary cognitive psychology of an active mind in reciprocal interaction with its environment: persons create and transform the contexts in which they live as much as being governed by them. The fact that behavior varies from situation to situation may not necessarily mean that behavior is controlled by situations but rather that the person is construing the situations differently and thus the same set of stimuli may provoke different responses from different people or from the same person at different times. Put differently, Mischel views situations not as direct causes of behavior but rather as "informational imputs whose behavioral impact depends on how they are processed by the person" (Mischel 1973, 278). Thus, styles of cognitive processing are Mischel's analogue to older ideas of relatively fixed traits and dispositions. Personality is no longer a fixed way of responding but is rather a way of constituting a "reality" to which one responds behaviorally, affectively, and cognitively. But of course these responses in turn create a new reality (for example, new behaviors elicit new responses from others, creating a different set of stimuli; or different cognitive structures come into play, subtly changing the impact of the environment; or new moods alter the processing of information). And this new reality will, in turn, elicit a new set of responses—an endless feedback loop. Personality, then, is an ongoing process of construing and responding.

Similarly, research in attributional theory suggests that the attributions people make about the meaning and causation of events and their role in those events have profound consequences for people's affect, cognition, and behavior. Evidence suggests that the kinds of attributions people make regarding their control (or lack of it) over events in their lives affect their behavior, level of depression, and self-esteem (Abramson, Seligman, & Teasdale 1978). Similarly, investigations of locus of control imply that a wide range of phenomena including anxiety and stress, assertiveness, motivation, test performance and many others are influenced by whether the subject feels the results are produced by his or her own effort or by some external force (Rotter 1966). And finally, an attributional account of motivation has been proposed (Weiner 1974).

Gerald Metalsky and Lynn Abramson (1981) have proposed a typology of two different attributional styles: *belief-based* attributions, in which a person makes a decision about an ambiguous situation on the basis of generalized beliefs about the way things are (or should be); and *evidence-based* attributional styles where the person relies mostly upon

information contained in that situation. Metalsky and Abramson (1981) cite evidence suggesting that people are more inclined to rely upon generalized beliefs than situational information. Philosophers of science will recognize this as another variant of the debate about the role of data (evidence-based) and theory (belief-based) in science. Philosophers of science seem generally agreed that theory and data cannot finally be separated because even what counts for data and how it is recognized and understood is partly a function of seeing it through the lens of some theory (Jones 1981). Likewise Metalsky and Abramson resist the tendency to over-dichotomize these two styles.

Placing attributional research in the context of cognitive social learning theory suggests both that attributional styles influence affect and behavior and that affect and behavior can, in turn, impact on the process of attribution. For example, moods may alter a person's cognitive processes, and new behaviors may cause new information to become available from the environment that may impact on people's beliefs or the ways they regard data that comes to them. Attribution is more than just a cognitive process; it is another model of the way persons create the realities to which they respond.

This discussion has pushed cognitive social learning theory beyond its purely cognitive framework. The suggestion in Mischel and in attribution theory that in processing information from the environment one does not just mechanically record data but rather " 'constructs' (generates) his renditions of reality" (Mischel 1973, 266) implies that social learning theory is, among other things, a model of how personal realities are created. When we speak of personality, then, we have in mind not a bundle of invariant traits but rather a process of constituting a personal reality and responding to it in a way which, in turn, reconstitutes it. This process is characterized by both continuity and change. Given that the same person variables are at work across situations and throughout time, certain consistencies can be observed (Mischel 1979; 1973). Given the reciprocal interaction between persons and situations and the impact of changing contexts, discontinuity and change are equally characteristic of human personality.

Implications for Social Learning Theory

As mentioned above, commentators (for example, Mahoney 1980; Metalsky & Abramson 1981) have noticed the similarity between contemporary cognitive processing theories and contemporary philosophy of science, especially the work of Kuhn on paradigms (Kuhn 1970). What cognitive structures like schemata are to individuals, paradigms are to disciplines and cultures. Contemporary cognitive processing theories and philosophies of science (reviewed in Jones

1981) converge around the claim that the human organism selects, organizes, and transforms the stimuli that impinge upon it; knowledge is something we make, not something we receive.

Two parallel shifts, then, have taken place in the way behavior (in psychology) and knowledge (in the philosophy of science) have been understood. Earlier there was an emphasis on behavior as made up of discrete bits of stimuli and responses (for instance, B. F. Skinner's early model of reinforcers as found in Skinner 1953) and on knowledge as made up of discrete fragments of data (Bertrand Russell aptly named his philosophy "the philosophy of logical atomism," Russell 1960). Now there is an emphasis on the *organization* of the constituents of behavior into cognitive structures like schemata, person variables, and attributional styles, and a corresponding philosophical emphasis on the patterns and forms that undergird our knowledge (Brown 1977; Hanson 1958; Kuhn 1970; Polanyi 1958). Likewise there has been a shift from an epistemology based on logic to an epistemology based on images of perception. Again Russell (1960) exemplifies the first and Kuhn (1970) the second. Kuhn quite self-consciously draws on the language of perception to explicate what he means by paradigms (see the postscript to Kuhn 1970; also Brown 1977; Hanson 1958). This shift has its roots in Ludwig Wittgenstein's (1958) discussion of *seeing* and *seeing as* although it seems clear now that all *seeing* is really *seeing as* (Brown 1977).

Reality is not something that is heteronomously imposed on us by an all-powerful, external world but is rather something we constitute by seeing it through our paradigms, schemata, and other cognitive structures and by interacting with it in the reciprocal way described by social learning theory. Both in psychology and philosophy there has been an epistemological shift from reality as something given to reality as something created by human activity.

On this reading, cognitive social learning theory has been found to be richer than a simple cognitivist approach. Here it makes links to other psychological schools. In the move away from emphasizing either isolated individuals or overpowering contexts to concentrating on the interaction between them and on the ways in which they mutually influence each other, cognitive social learning theory reflects some of the same concerns as general systems theory with its model of the parts and the whole in a single interacting system (for an introduction to general systems theory, see Beavers 1977). In the attention given to the ways in which individuals create and respond to personal realities, cognitive social learning theory mirrors some of the issues found in existential-phenomenological psychology with its focus on an individual's way of *being in the world* (for example, Valle & King 1978).

What is called personality in this paper is very similar to the phenomenologist's image of being in the world.

Personality, then, is both a way of being in the world and a way of construing the world. The active nature of the mind and the concomitant fact that the world is something we construe as much as discover point in the direction of a constructivist philosophy of knowledge. And connections between personality (in the sense of a way of being in the world) and knowledge (in the sense of a way of construing the world) imply that theories of personality are also implicit epistemologies. By pointing to the constructive functions of schematic processing, encoding strategies, and attributional styles, cognitive social learning theory and attribution theory illustrate the reciprocally reinforcing connection between ways of being in the world and views of reality which together make up a person's personality.

We will now turn to two illustrations of the connections between ways of being in the world and ways of construing reality.

An Illustration From James's Psychology of Religion

Rather than empirical research (as the term is understood today), William James employs a method closer to phenomenology (Wilshire 1968). He records the temperamental characteristics of various religious and philosophical movements (James [1902] 1982). James is content to rest his discussion on the foundation of differing temperaments. He is unable to move beyond description because he lacks any categories with which to analyze this material. We are now in a position further to refine his discussion. An expanded cognitive social learning model envisions personality along two dimensions—a way of interacting with the world and a way of construing reality—and points to a connection between them. This connection is a function of the various cognitive processes (constructive competencies, encoding strategies, expectancies, attributional styles) which make up various personalities and generate what James calls "the universe of our experience" ([1902] 1982, chap. 20). The presence of these cognitive processes sheds new light on James's typology of the religious personality.

James distinguishes two fundamental temperamental types which he sees as the basis for the various forms which religion takes (James [1902] 1982, chaps. 4-10). The first is the *once-born* or *healthy-minded* individual who comes at the world in an optimistic and energetic way. Little troubled by self-doubt and rarely given to introspection, such a person is convinced that thinking positive thoughts and staying active will enable one to surmount all of life's difficulties. Such a person's religion involves a minimal consciousness of sin or struggle with doubt and is primarily oriented towards doing good and thinking positively.

Such sentiments appear to come naturally to such a person and are not the result of protracted interior struggle or dramatic conversion experiences. Not content just to live optimistically, the once-born person, as portrayed by James, is driven to construe reality in a congruent way. Like all cognitive schema, the healthy-minded paradigm generates its view of reality by selectively attending to and encoding some (the positive) aspects of life and selectively discounting other (negative) experiences. Or, to quote James's more colorful description,

> One can but recognize . . . the presence of a temperament organically weighted on the side of cheer and fatally forbidden to linger . . . over the darker aspects of the universe. . . . The capacity for even a transient sadness . . . seems cut off from them as by a kind of congenital anaesthesia. . . . This temperament may become the basis for a peculiar type of religion, a religion in which good . . . is regarded as the essential thing for a rational being to attend to. This religion directs him to settle his scores with the more evil aspects of the universe by systematically declining to lay them to heart or make much of them, by ignoring them in his reflective calculations, or even, on occasion, by denying outright they exist (James [1902] 1982, 83, 127).

A healthy-minded way of being in the world, then, generates a correlated view of reality as essentially good, perhaps even progressively improving, perhaps continually governed by some gracious and vigilant spiritual power, in which evil finds little or no place. This is because the healthy-minded individual possesses cognitive schema and encoding strategies that bias him or her towards the positive and away from the negative and which build a view of reality around this information. It is easy for such people to make attributions regarding benign powers and harmonious cosmic designs, for they can readily access material that supports such a metaphysics. It is easy, too, for such people to come at the world in an energetic and focused way because they continually expect positive outcomes and continually remember previously positive ones and easily forget negative ones. James describes how the experiences of such people continually seem to support their generalized beliefs about the world (James [1902] 1982, 121ff.). Thus their experiences, as filtered through their healthy-minded personal paradigm, continually reinforce their outlook and metaphysics, creating a unitary way of being in the world and picture of reality.

Of just the opposite temperament are those whom James calls the *sick soul* or the *twice-born*. Clinically versed readers will recognize a certain resonance in James's description of the sick soul with the cognitive account of depression. These individuals continually dwell on the negative. James notes a phenomenon now being investigated in research on depression—the way in which those negatively inclined readily encode and recall experiences of failure, loss, and diminishment and are seemingly unable to process experiences of success and

happiness (Giles & Rush 1983). This illustrates the way in which schemata selectively deal with incoming information as well as the impact of affect on cognition. The sick soul's way of being in the world generates a corresponding view of reality as continually tainted with failure and loss. Again, to quote James, "The good quality of the successful moments themselves when they occur is spoiled and vitiated. All natural goods perish. Riches take wings; fame is a breath; love is a cheat; youth and health and pleasure vanish. . . . Life and its negation are beaten up inextricably together. . . . All natural happiness thus seems infected with a contradiction" (James [1902] 1982, 139). This contradiction drives the divided soul ever deeper into despair until, at least for those religiously inclined, they either give up the struggle or are worn down by it and resign themselves to a transcendent power. Hence James's term, twice-born, for after a period of crisis and struggle they are often "reborn" into a state of relative calm. Even so, they never approach the undifferentiated optimism of the healthy-minded, and their view of reality usually retains a rather dualistic conception of evil and good.

In sum, then, James points to a connection between a way of being in the world (optimistic and energetic or despairing and divided) and a construing of reality (as fundamentally good or tainted with negation). However, he can only describe this connection; he can not explicate it further. Cognitive social learning and attributional theories explain how the universe of experience is generated by our cognitive processes. Cognitive schemata restrict the impact of information to what is schematically congruent. The person with a healthy-minded, rose-colored schema selectively attends to and encodes successes, compliments, and harmonies and selectively ignores the contra-schematic impact of suffering, pain, and failure. The twice-born cognitive processes operate on the reverse premises. Since attributions are governed by schematic processes, each type attributes meanings to events consistent with their schemata and with previously selected and encoded information: failures are seen as either steps on the road to growth or proof or the absurdity of life; gracious moments are either seen as examples of the way life is or dismissed as meaningless coincidence. Each type expects different outcomes and acts in accordance with these expectancies, thus behaving differently in similar situations. And their views of reality are further confirmed and reinforced by the differential feedback each elicits from the environment.

Another Illustration: Empiricist Versus Hermeneutic Methodologies

The cognitive social model of personality also sheds some light on the current controversy between empiricist and hermeneutic methodol-

ogies regarding the use of natural-scientific categories in the study of human behavior. This controversy rages within psychology as a whole (Packer 1985), the philosophy of science (Bernstein 1983) and the social sciences in general (Schrag 1980), and the psychology of religion (Proudfoot 1986). The empiricist way of being in the world (at least while operating in the empirical mode of inquiry) is that of detached observer (for an explication of the role of detachment in the development of science, see Polanyi 1958). The goal of empiricism is, as much as possible, to distance the observer from the object of investigation and to minimize his or her personal involvement. The view of reality generated thereby is of a self-contained system of impersonal forces and laws (Burtt 1951). Empiricism's goal is to express these relationships in impersonal and universal mathematical terms.

Given the preceding discussion, it is not surprising to find a connection between the empiricist's way of being in the world (detached) and his or her view of reality (impersonal forces and mathematical relationships). Natural science developed to study the world by removing all personal elements, so it is no wonder that there is no trace of the personal in the view of reality as seen through natural science. The structure of natural scientific methodology and the empiricist way of being in the world insure that the world will appear impersonal to them. (For a similar argument from the standpoint of modern physics, see Schroedinger 1969.)

Hermeneutics, on the other hand, makes the opposite move. Paul Ricoeur (1967), for example, speaks of knowledge by participation. The world is envisioned as a text to be read by engaging oneself with the text and entering into a dialogue with it; in the process, one is as much questioned by the text as an interrogator of it. This more involving way of being in the world generates a different view of reality. Rather than a world of impersonal forces and laws, hermeneutics portrays a world of participatory agents. Through narratives, hermeneutics seeks a contextually intelligible account of human behavior (one that "makes sense" of behavior in a particular context to an investigator who also occupies a specific context) rather than a universal and abstract one (for more on the language of hermeneutics, see Packer 1985). The practitioner of the hermeneutical method, then, interacts with the world in a way that involves commitment, participation, and dialogue rather than detachment. He or she works at acquiring the skills of empathy and what M. J. Packer calls "a progressive uncovering and explication . . . of what is being studied" (Packer 1985, 1089). Thus it is no wonder that the picture of reality to emerge from the hermeneutical method is cast in much more poetic and personalistic language than that which emerges from the empirical method.

Empirical and hermeneutical ways of being a researcher, like the once- and twice-born ways of being religious, arise from different temperaments. They are rooted in different ways of being in the world, each generating a different model of reality by drawing upon different constructive competencies, different encoding strategies, making different attributions, and interacting differently with the world and so eliciting responses which differentially reinforce their different views of reality.

James's typology of religious temperaments and the debates over hermeneutic and empirical philosophies both exemplify the connection between ways of being in the world and ways of construing the world—a connection made more understandable by cognitive social learning and attributional processes. Providing an explanation of this connection between our ways of being in the world and our ways of describing, plus offering further evidence for the activity of the mind in the creation of knowledge, makes the cognitive social learning model of personality also an implicit epistemology.

Confronting such a variety of models, we might question the adequacy of these various methodologies. We must remember, however, that the question of adequacy is always asked in a specific context (Toulmin 1960; Jones 1981). The question is never one of general adequacy but rather whether the method is adequate for a specific task in a specific context. To use an example from another science, if I want to understand why the billiard ball does (or doesn't) end up in the pocket, Newtonian mechanics is fine; if I want to understand why it behaves as it does when approaching the speed of light, Newton is little help and another framework is necessary. Some aspects of human behavior are adequately comprehended by empirical categories, while others may require another approach (see Packer 1985 for a delineation of three different approaches; also Schrag 1980). Thus we arrive near James's position, with an appeal to pluralism and pragmaticism, to whether or not the method we select does the job we want it to do (for more on a pragmatic approach to the philosophy of science, see Toulmin 1960, and Jones 1981).

In the context of belief in fixed temperaments, pluralism means little more than an appeal to recognize and respect the varieties of human characters and styles. In the context of a model of personality as the construing of our experience, advocating pluralism means appealing for temperamental and methodological flexibility and cultivating a plurality of ways of being in the world and construing reality.

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