Introduction

MARTIN J. PACKER AND RICHARD B. ADDISON

Twin perspectives have come to rule research and theory in contemporary psychology: the twins of empiricism and rationalism. They are stances taken and attitudes adopted on the concern of how best to be psychologists (even on the question of how best to *be*). They have been dominant in our discipline, and in our intellectual culture, for so long that they go unnoticed and unquestioned. They provide the taken-for-granted background assumptions that run throughout modern psychology, from empiricist approaches such as social learning theory and positivist experimentalism to rationalist approaches such as structuralism and much of cognitive science. The empiricist perspective endorses talk of stimulus and response, of dependent and independent variable, of significance test. Rationalism shapes discussion of information-processing, memory retrieval, scheme and structure, sensory input. Along with ways of talking they regulate techniques of inquiry. Experimental manipulation of variables and the prediction and testing of observable associations are empiricist programs. Computer simulation and formal modeling are rationalist lines of attack. The story of this dual hegemony is as manifold and complex as the branches of institutionalized psychology, and so we shall content ourselves here with giving a brief overview of these perspectives and some of the claims they make about the world and the proper place of psychology in it. We shall consider arguments that these claims are mistaken, even though they have come to be seen as undeniable. And we shall draw a comparison between these twin perspectives and hermeneutics.

A project to evaluate the competing claims of traditional and interpretive approaches to inquiry in psychology would, if done properly, need to make manifest the assumptions fundamental to both rationalism and empiricism, show where and how these assumptions are flawed, and then demonstrate what interpretive inquiry uncovers to deal with the difficulties. (And difficulties of this kind are not always dealt with by being resolved, as we shall see.) A simple review of the various efforts (by Heidegger, MacIntyre, Taylor, Dreyfus, Bernstein and several others) to accomplish this project is in itself too large a

task for this introduction. What we shall provide instead is more a thumbnail sketch of what lines of argument have been drawn out by these writers.

Even attempting this simpler task, we soon stumble over the difficulties of conducting an argument about perspectives as broad as those of empiricism, rationalism and hermeneutics. Terms and lines of argument that make sense in one perspective can seem meaningless when viewed from a second. Guiding values for one ("objectivity," say) are understood as misleading myths or chimeras from within another. Forms of argumentation become incommensurate: formal proof stands against narrative history. And we are working at a level where, ex hypothesi, there is no higher level to move to in order to arbitrate the conflict. It would be easy, and very tempting, to relax and say that it is all relative: that the choice between an empiricist, a rationalist, or a hermeneutic perspective is arbitrary; they are equally valid alternatives. This route has often been taken, but it is one we want to avoid here. It can lead to a nihilistic skepticism that can only undercut the concrete inquiries we conduct. We believe that interpretive inquiry is not just another alternative alongside more familiar methodologies.

We shall follow a path that seems the only route possible: arguing that hermeneutics provides a *better* perspective on the world than the traditional twins. Sometimes the argument is straightforward, and the traditional perspectives fall into self-contradiction, failing in terms of their own standards of logic and truth. At other times one can only see the flaws in empiricism or rationalism by shifting to the interpretive perspective. On such an occasion, the argument turns into something close to a brawl: once empiricism and rationalism are shown to be flawed, then cracked open on their flaw-lines, hermeneutics becomes the only game left in town. As Sherlock Holmes declared, "Once the impossible has been eliminated, whatever remains, no matter how improbable, must be true."

Comparing World-Views

Although the origins of empiricism and rationalism (and indeed hermeneutics) can be traced as far back as ancient Greece, we shall begin our account with what has been called the beginnings of modernity, in the seventeenth century. It was then that Descartes (1641/1968) made his first programmatic moves in what was to become a dominant mode of philosophical analysis, one which has found expression in psychology too, via Kant, Piaget, Chomsky, Kohlberg, Miller, and many others. And it was then, too, that Locke (1690/ 1975) articulated a related account of the person, of the world, and of the character and limitations of knowledge and scientific inquiry; an account whose descendants are also multiple in contemporary psychology. Descartes,

of course, was a progenitor of modern rationalism; Locke, a founding father of modern empiricism (as well as democratic constitutionalism). Descartes' and Locke's accounts seem opposites in key respects: Descartes emphasized the dubitable status of sensory knowledge and the need for mind to examine itself in an active and systematic manner; Locke in contrast wrote of the primary qualities of objects in the world—"solidity, extension, figure, motion or rest, and number"—and of ideas in the mind being copies or "resemblances" of these qualities. In one account mind is essentially active, doubting and questioning, in the other mind is largely passive, mirroring an external reality. But the two accounts are complements rather than genuine opposites. Two sides of a single coin, struck from the same metal, they share unexamined assumptions about reality and knowledge. This communality reflects Descartes' and Locke's common admiration of the new developments in the sciences of their time, especially Galileo's geometry and optics, and also their common abandonment of elements of Christian dogma. Common to both accounts is a dualistic view of mind and world as two distinct realms, a belief that they had identified the source of genuine knowledge, and a view that physical science provided a clear and satisfactory model for all analytical inquiry. What both these early statements of empiricism and rationalism celebrated (and to a large extent invented) was the *individual,* as a kind of inquirer after and a carrier of knowledge distinct from both church and state. What was, understandably, brushed aside was the interdependence of individual and larger institutions. Two results of this emphasis on individual knowing were, first, a habit of mind we now call naturalism—a belief in the fixed objective character of both mind and world—and, second, the earliest account of what Taylor (1985, p. 9) calls the "disengaged modern identity." Locke in particular adopted a naive realism, a belief that our ideas of the world (at least as far as primary qualities are concerned) correspond to qualities that "do really exist in the bodies themselves." Here lie the roots of the "correspondence theory" of truth, which have twisted themselves hidden through the ground of contemporary research practice, and trip us still.

Four Areas of Comparison

Rationalist, empiricist and interpretive inquiry can be usefully compared in four areas: In terms of (a) the kind of domain that inquiry is considered to be directed toward; (b) the origin or source of knowledge; (c) the form of explanation that is seen as the goal of inquiry; and (d) the manner of inquiry that is deemed most appropriate. In each of these four—object, origin, explanation, and method—interpretive inquiry makes a radical break with empiricism and rationalism (cf. Palmer 1969; Bleicher 1980).

	Empiricism	Rationalism	Hermeneutics
Domain of inquiry	Independent entities with absolute properties	Formal structures underlying appearances	Action in context; Texts and text analogues
Ground of knowledge	Foundation provided by interpretation-free facts; brute-data	Foundation provided by axioms and principles	Starting place provided by practical understanding; articulated and corrected
Character of explanation	Statements of regularities among data. Causal laws	Formal, syntactic reconstruction of competence	Narrative accounts; a reading of the text
Method: relationship to researched	Objective, value-neutral stance	Detachment; abstraction from context	Familiarity with practices; participation in shared culture
Method: justification of explanation	Assess correspondence with reality	Assess correspondence with intuitions of competent person	Consider whether interpretation uncovers an answer to its motivating concern

Figure 1

Comparing Empiricist, Rationalist, and Hermeneutic Perspectives

Objects, Abstractions, or Everyday Activity?

Every kind of systematic inquiry requires that assumptions be made about the characteristics of the domain studied. Empiricism, rationalism, and hermeneutics each construe the domain of inquiry differently, so that investigators work within quite different preconceptions of the sorts of entity toward which their inquiry is properly directed. This is not to say that the three simply have *different* domains of inquiry, but rather that they interpret a common reality in incompatible ways.

In empiricist inquiry it is taken for granted that the world is made up of basic objects or elements that can be described in a manner that involves no interpretation. These building blocks have properties that are independent of human concerns and practices. The task of scientific inquiry in psychology, from this stance, is to take these elements as its object and describe their properties and interactions. But on closer examination there is a hidden context to this preconception, that of 17th-century mechanical science. Empiricist inquiry in the human sciences today inhabits essentially the same world that Locke borrowed from Galileo (as distinct from, for instance, the world of modern quantum physics): a world where physical objects have absolute, context-

independent properties such as size, mass, position, and velocity that can be measured unambiguously with simple procedures and instruments, and a world where such measurements allow precise prediction of subsequent behavior (analogous to Galileo's prediction of a body's movement down an inclined plane). By analogy, people can be described in terms of objective properties such as personality traits, intelligence quotients, or attachment strengths, that are assessed in categorical or quantitative terms with psychometric tests and measures. Modern psychometrics assumes the mental and behavioral worlds are each made up of independent entities that can be collated and measured. The objects of empiricist inquiry are literally objects—entities whose behavior and characteristics are analogous to those of the physical entities whose mechanical interaction was studied by Galileo. Far from this being the only, natural, objective way of seeing the world, it is a product of particular social and intellectual circumstances. There are, perhaps, excuses for the belief of the time that the **true** way of understanding reality had finally been achieved by the new "scientific method." There is no longer any excuse, though, for this naive realism of 17th-century empiricism to continue unabated in contemporary psychological research. It is time to acknowledge that so-called objective reality is a product of human invention.

While empiricist inquiry undertakes to discover lawful generalizations about events in an objective universe, rationalist approaches have, in general, taken on the task of reconstructing a portion of human knowledge or experience. Rationalists are concerned with a realm of formal abstraction to which they give greater credence than everyday appearances. Descartes and Kant, both rationalist philosophers, took on the task of reconstructing human knowledge in its entirety, and determining the conditions for and limits to genuine knowledge; structuralist researchers—one contemporary form of rationalism—have dealt with more restricted subdomains in the same way: de Saussure (1915/1959) and Chomsky (1957, 1965) examine language; Piaget (1977) studies the domain of operational intelligence; Kohlberg (1971) looks at the realm of moral judgment. In each case the aim has been to provide an orderly reconstruction that would introduce clarity and indubitability into a realm that is seen as filled with ambiguity and error. Speech, for Chomsky, and action, for Piaget, are occasions of mere "performance," and are distorted by errors, memory constraints and other cognitive limitations. Performance is also shaped in a way structuralists find uninteresting (or, at most, secondary) by the demands of specific situations, and by concrete concerns and interests. The structuralist aim is that of all rationalist approaches: to reconstruct a "competence" or "deep structure" that underlies this performance. Abstract systems of language (de Saussure's "la langue"; Chomsky's "transformational grammar") are held to underlie the speech one uses in everyday conversation; intellectual operations (Piaget's "schemes") are posited to underlie a child's actions with objects and people.

A rational reconstruction of competence provides a transcendental structure whose subject is also a transcendental one: the "ideal speaker-hearer" for Chomsky; the "epistemic subject" for Piaget; one who would operate in "the ideal speech situation" for Habermas. Performance, on the other hand, is viewed as unhappily tied to a subject who is an individual in particular historical, cultural, social and personal conditions. The internal relations of the abstract system of competence are considered far more interesting than the connections between action and setting, which are merely "external."

Furthermore, the underlying structures are assumed to be formal ones, composed of syntactic rules and elements (Williams 1978): rules whose application can proceed automatically, in a definite and established manner that requires no interpretation or judgment. (The computer program is the contemporary exemplar par excellence of a syntactic rule.) So while rationalist inquiry doesn't deal with the simple isolated elements of empiricism, the structures it reconstructs have only formal internal relations, and are stripped of all relationship to context and setting. Piaget recounts a central structuralist postulate "that structures are self-sufficient and that, to grasp them, we do not have to make reference to all sorts of extraneous elements" (Piaget 1970, 4).

The object or domain of rationalist inquiry is, as rationalists describe it, not an immediately apparent one; it lies behind appearances. But rationalists are faced in the first place, just like the rest of us, with occasions of situated speech and action, and their inquiry must do something with these in order that the underlying structures become apparent. As Piaget puts it, "Structures are not observable as such, being located at levels which can be reached only by abstracting forms of forms or systems of the nth degree; that is, the detection of structure calls for a special effort of reflective abstraction" (Piaget 1970, 136). This abstraction is one that removes an utterance or action from its immediate context, from the particular circumstances of a human situation, and from individual interests and concerns.

So, unlike the mechanical world of empiricism, with its inclined planes and swinging pendulums, rationalist inquiry recognizes a non-mechanical interdependence among psychological entities, but one where the connections are purely formal syntactic ones, and the context of human concerns and projects is considered something that can, indeed must, be stripped away. Is anything wrong with this position?

The central criticism of rationalism has been that when human action (including speech) is abstracted from its context it is, unfortunately, not cleaned up but distorted. The assumption that skilled human performance is just sloppy competence, as structuralists would have it, is a distorting one. Distorting in what way? The cost of abstraction is that the object is "mummified, as everything becomes when it is torn out of its context" (Musil 1930/1979).[1] The counter claim from the hermeneutic stance is that action and

context are not separable without consequences that undercut the aims of rationalist inquiry. Performance and context cannot be teased apart; what abstraction really does is introduce a "privation," an absence of practice. Rationalism sees a dirty baby splashing in scummy bathwater and pulls her out to spruce up and put her on display in pristine condition. The hermeneutic argument is not that the baby gets washed out with the bathwater but that she turns out to be a water-baby who dies on dry land, and so must be studied in her original setting.

One way this argument has been made is to say that the "indexicality" of action—the way in which aspects of context are pointed out and used to bear meaning when we act and talk—is destroyed by rationalist abstraction (Garfinkel 1967; cf. Packer, this volume). Practical activity is intrinsically linked to its context and has a complex temporal organization: the very things that an analysis of competence is designed to eschew. A hermeneutic stance focuses our attention on these contextual and temporal aspects of action; the structures of action are unspiritual and worldly rather than transcendental and eternal.

What might be the consequences of abandoning both empiricism's naive realism and rationalism's inclination to abstraction? What follows once we regard reality as a historical and cultural construction, and recognize action's mundane indexicality? Once empiricism's historical origin in 17th-century mechanics is uncovered, the search by psychologists for mental and behavioral entities analogous to the physical objects studied by Galileo comes to seem an inappropriate strategy of inquiry. (This is true whether the inquiry is psychological, sociological, anthropological or historical, of course). In the empiricist stance the constituents of human life are objects. In the hermeneutic stance they are events and entities that have status and significance by virtue of involvement in our practices. We deal daily with books, cars, VCRs, computers, lovers, pets, plants, classes, universities, relatives, cafes, bureaucracies, regulations, permits. Empiricist inquiry sanctions the effort to study and describe these as though their character and properties are independent of the parts they play in human lives, and their relevance to human concerns and projects. Interpretive inquiry embraces the view that these phenomena cannot be understood independent from human interests and activities, and considers claims to have done this mistaken.

Interpretive inquiry focuses on human activity situated in context and the offspring of such activity: institutions, histories, accounts, records, texts, stories, lives. It makes no sense to imagine any of these existing in the absence of beings like ourselves, who wish to study them and, conversely, it would make no sense to think that we could exist, as psychologists and inquirers, apart from or independent of a whole range of practices, institutions, and accounts. People both constitute and are constituted by their social world;

we contribute to sustaining it as what it is (or changing it); it made us what we have become. We are not, and cannot become, the neutral and dispassionate observers that both empiricism and rationalism would have us be.

A Foundation to Knowledge, or a Starting Place for Inquiry?

The three perspectives differ in their assumptions about the origin or source of the knowledge that inquiry (hopefully) leads to. Throughout the 300-year span of the empiricist stance a recurrent theme has been the claim to have identified the basic components of knowledge: elements that are simple, irreducible and ultimate; terms "for which the correspondence between name and experience is immediately understood" (von Mises 1956, 80). For Locke these basic building blocks of knowledge were "simple ideas, the materials of all our knowledge" (p. 75). In more recent times the logical positivists proposed similar candidates. Ernst Mach, the physicist whose epistemological views were admired by the Vienna Circle founders of logical positivism, considered all experience to consist of elemental sensations: "colors, sounds, warmths, pressures, spaces, times, etc." and their compounds (cited in von Mises, op cit). For the logical positivists, logic is used to connect and manipulate statements about these basic givens, and logic itself is empty of content, being merely the tautological restatement of truths in new forms that may be more convenient and economical (cf. Hahn 1930/1980). Simple ideas or experiences provide the foundation upon which all knowledge is built; logic is just the mortar that holds the bricks together.

Although logical positivism has been declared dead many times, its underlying empiricist assumptions haunt us still. Psychology and the other human sciences resound with nervous and hollow appeals to the self-evidence of objective information. Taylor's definition of these brute facts can hardly be bettered: they are claimed to be:

> data whose validity cannot be questioned by offering another interpretation or reading, data whose credibility cannot be founded or undermined by further reasoning. If such a difference of interpretation can arise over given data, then it must be possible to structure the argument so as to distinguish the basic, brute data from the inferences made on the basis of them. (1979, p. 30)

Data of this kind are commonly taken to be the basis of psychological theories in many contemporary research reports. And what is wrong with this? The major difficulty stems from the claim that any data are self-evident: observed and recorded without interpretation. If the phenomena we study are not isolated independent objects with fixed properties, then we can't observe them in a primordial, objective experience that makes reference neither to their setting nor our concerns.

Even in the natural sciences, which the logical positivists considered the epitome of value-free description, seemingly objective and interpretation-free observations turn out to be dependent on contexts of several kinds. It has become recognized that what counts as an observation depends on current theory; observations are "theory-loaded" (Hanson 1958, and cf. Dreyfus 1980). Successive theories are incommensurable in the sense of requiring radical translation between superficially equivalent terms. With the shift in physics from the Newtonian to the Einsteinian paradigm, basic terms like "mass" and "inertia" changed their meaning, and were applied in different ways to natural phenomena (Kuhn 1970b, 267; cf. Hacking 1983, 167ff).

Positivist efforts to catalog simple observables and prescribe the objective manner by means of which they can be identified have run into many problems. But statements with a positivist tone still linger in introductory psychology texts, and serve to obscure the role that an understanding of culture and humanity inevitably plays in the very identification and description of actions and events; they deny that the observer "presupposes an interpretation of the behavior as having a certain point, as situated within a cultural and institutional framework, as obeying or infringing relevant norms, rules, or expectations, and so on" (McCarthy 1978, 148).

Empiricism, then, claims to have identified a foundation for scientific inquiry in the form of unquestionable observables that are directly given to the senses. Rationalist inquiry seeks a foundation too, but one whose validity is provided by the consistent procedures of formal logic. Rationalism seeks to establish a scaffolding of indubitable principles, preferably formal ones, from which structures that reconstruct human phenomena can be logically generated. Descartes described his aim "to build anew from the foundation, if I wanted to establish any firm and permanent structure in the sciences" (1641/1969, p.144), "... to discover [at least] one thing only which is certain and indubitable" (p. 149), and he aimed to do this through the systematic application of reason, examining each of his beliefs to ascertain the degree of its certainty. In this way he believed he could arrive at an Archimedian point on which to base his reconstruction of all genuine knowledge: the famous "cogito." Descartes's "Cogito ergo sum" was the base upon which he was able to build a proof of the existence of God and of order in the natural world.

Chomsky's structuralist linguistics (here described by Piaget) has an analogous beginning:

> Instead of looking for an inductive step-by-step procedure to help us collect the properties of particular languages and ultimately language in general, Chomsky inquires: What grammatical postulates are necessary and sufficient to describe the universal principles of language structure and to furnish a general method for selecting a grammar for any given particular language? (Piaget 1970, 84).

Here again a foundation is sought in the form of basic principles from which the rules that make up any particular grammatical competence can be derived. In Piaget's own work on the cognitive-developmental analysis of intelligence, basic structures are described that underlie a child's overt actions, and these themselves are products of "functional invariants" or biologically-based tendencies: assimilation and accommodation. Piaget was interested in describing underlying structures of intelligence, stages of development that ignore setting and activity, and so he was only indirectly interested in the thought and action that a child engages in when confronting a puzzling task.

But the foundation sought in rationalist inquiry, the basic principles or axioms from which a formal reconstruction can be logically derived, has proved as unreachable, or at least as misleading, as the empiricist foundation. Members of the Vienna Circle (e.g., Hahn 1933/1980) were happy to point out that formal logic is unable to bear the weight that rationalists wish to place upon it: logic cannot provide a foundation for knowledge about either the world or the mind. Newton's cosmology and Euclid's geometry, once thought to be fruits of a universal logic and, at the same time, true statements about empirical reality have turned out to be neither. They turn out to be conventions: two among the many possible ways of describing physical phenomena. Relativity theory displaced Newton's universe, and the discovery in the late 19th century of alternatives to the "natural" geometry of Euclid showed that it was a mistake (the "shipwreck of formalism"; Rosen, 1987, 153) to think that logical propositions somehow match reality; rather, their explanatory power is a product of the contingent choice of their axioms. That is to say, Newton's and Euclid's systems both worked because they were ingenious systems for representing natural phenomena in a manner relevant to our need to control and manipulate nature, not because they mirrored an objective reality. Furthermore, Godel's theorem (Nagel and Newman 1958) showed that a system of formal logic may be incomplete and inconsistent; hardly properties that are desirable for a truth-preserving instrument of thought.

So both these attempts to establish a foundation on which inquiry could build final truths have run into major difficulties. It seems time to say that foundationalist efforts have failed, and also time to recognize that scientific inquiry does not require an indubitable foundation. Rationalist axiomatic reconstructions and empiricist brute-data building blocks are both Rube Goldberg devices designed to enable people to escape from what they fear is a vicious circle: the circle of interpretation, the *hermeneutic circle*. The gadgets don't work; the foundations have crumbled; and the hermeneutic circle turns out to be an inevitable part of our efforts to understand human phenomena.

Discarding the apparatus that is supposed to make psychology truly scientific, and the efforts to avoid the fearsome circularities of interpretation,

is proving to be no casual matter. The problems that foundationalist moves have run into have given rise to what Bernstein (1983, p. 18) calls "Cartesian Anxiety": "not just radical epistemological skepticism but the dread of madness and chaos where nothing is fixed, where we can neither touch bottom nor support ourselves on the surface." Researchers working within the empiricist stance fear that if their search for a method that achieves objectivity fails then relativism must be an inevitable result, and inquiry will reflect only subjective opinions. And when those who have embarked on the never-ending rationalist quest for total explicitness become confronted by the recognition that there is unavoidable ambiguity in human affairs and understanding, their fear is a similar one, that this ambiguity will be a total one, leading inexorably to the same relativism.

Hermeneutics is repeatedly challenged to explain its apparently relativist position. The difficulty in meeting this challenge stems from the challengers' expectation that the solution to the puzzle must take the form of procedures or criteria, whereas the guarantees against relativism (and against totalitarian objectivism, for that matter) lie in our practices (MacIntyre 1984, 1988; Kuhn 1977, 320ff; Bernstein 1983, 223ff).

Both everyday understanding and scientific knowledge have their starting place in practical activity: in our direct, everyday practical involvement with tools, artifacts, and people in the world. Geertz (who describes his own anthropological work as hermeneutic) points out that "science owes more to the steam engine than the steam engine owes to science" (1983, p. 22). A similar practical starting point is the place where we, as psychologists, inevitably begin our research, but it is located in human interactions, not mastery of the environment. One might say that psychology owes more to the cocktail party than the cocktail party owes to psychology (we think of Cherry 1953). Both our everyday actions and our research are embedded in the social practices of our home, our workplace, our society. This practical activity is distinct from any psychological theorizing we do, and it would continue if we stopped forming theories. Practical understanding is not an origin for knowledge in the sense of a foundation; it is, instead, a **starting place** for interpretation. Interpretive inquiry begins not from an absolute origin of unquestionable data or totally consistent logic, but at a place delineated by our everyday participatory understanding of people and events. We begin there in full awareness that this understanding is corrigible, and that it is partial in the twin senses of being incomplete and perspectival. Understanding is always moving forward. Practical activity projects itself forward into the world from its starting place, and shows us the entities we are at home among. This means that neither common sense nor scientific knowledge can be traced back to an origin, a foundation.

Explanation and Understanding

We have considered views of the domain of inquiry in each of the three perspectives and conceptions of the origin or starting place of the knowledge sought in each approach to inquiry. Our third topic is intimately related to both of these: the form or character that an explanatory account is taken to have.

The programmatic statements of logical positivism still influence many psychologists' notions of what makes an adequate explanation. For many, an explanation has been provided when observation-statements are linked to form theoretical-statements. An explanation is a hypothesized lawful relationship of co-occurrence that has been tested through empirical observation; a combination of a general law and description of specific conditions. Conceived in this way, as a statement of regularities, explanation has the same formal character as prediction. If certain conditions exist, laws such as Newton's allow one to deduce (i.e., predict) a future outcome. Conversely, a particular outcome is explained if, given a general law, one can show that the requisite initiating conditions transpired. The billiard ball entered the pocket because the cue ball hit it with specified velocity and angular momentum; the child moved toward her mother because appearance of a stranger induced anxiety that was reduced by closer proximity.

From this stance, a scientific theory is often viewed as merely restating factual observations in a simple, handy and economical form: it aims to be "a complete and clear inventory of the facts of a domain" (Mach 1896/1986, 415). Explanation is provided by laws, and laws express regularities in the observable data. "The general laws of physics . . . are not essentially different from descriptions" (op. cit., p. 396). Newton's laws of motion are paragons of explanation. Consider for instance the First Law of Motion: $v = u + at$. This general statement permits calculation of a body's velocity (v) at any future time (t), given knowledge of the initial conditions: the acceleration acting upon it (a) and its initial velocity (u).

We have described how a rationalist explanatory account takes the form of a reconstruction: a precise formal delineation of structures underlying performance. Here, explanation is provided by a set of rules, an algorithm, whose relationship to the domain of inquiry is that of a formal logic to the set of well-formed statements deducible from its axioms. For example, Chomsky's (1957) transformational grammar generates all and only the grammatically well-formed sentences of American English. Cognitive scientists set great store by computer models of psychological processes such as depth-perception, semantic memory, or text comprehension, because the formal algorithms and data structures involved in such a model provide, from this stance, a full explanatory account of the process. The widespread interest in machine intelligence reflects this deeper quest for a successful reconstruction in logical

terms of some area of human understanding, a success that would finally vindicate the rationalist project. Minimal progress has been made in this effort at reconstruction, however (cf. Dreyfus 1979; Dreyfus & Dreyfus 1986).

One telling criticism of both causal laws and formal reconstructions is that such explanations are what they claim to be (interpretation-free and fully explicit descriptions of reality) only when the elements they operate on are uninterpreted ones. The measurements of objective properties and the syntactic units that make up a system of competence are indeed claimed to be uninterpreted. But we have already outlined the case for the hermeneutic view that human understanding is not made up of elements of this kind, and that it traffics instead in "thick concepts" that meld fact and value (Williams 1985). To the extent that an explanatory account of human action has its starting place in human understanding, it will not be formal. Instead, interpretive inquiry yields narrative accounts and "thick descriptions" (Geertz 1983). MacIntyre argues that:

> In successfully identifying and understanding what someone else is doing we always move towards placing a particular episode in the context of a set of narrative histories, histories both of the individuals concerned and of the settings in which they act and suffer. ... It is because we all live out narratives in our lives and because we understand our own lives in terms of the narratives that we live out that the form of narrative is appropriate for understanding the actions of others. (MacIntyre 1984, 211).

Even if agreement were reached that the elements in causal laws are context-bound and that interpretation plays a part in their identification, the search for regularities and predictive laws remains a far from satisfactory mode of psychological explanation. First, prediction is impossible in many cases where we may nonetheless achieve understanding. For instance, society changes through conceptual, practical, and technological revolutions whose form cannot be predicted (the introduction of computers into business, government and research provides a powerful contemporary example), and one consequence is that we cannot predict the terms in which the future will be understood (historical changes in notions of trading, for instance, illustrate this). Furthermore, social life has a game-like quality to it that can be identified only in retrospect, if at all, and so evades prediction ("the problem about real life is that moving one's knight to QB3 may always be replied to with a lob across the net," MacIntyre 1984, 98). Third, the outcomes of individuals' decisions effect social life at the cultural, institutional and personal levels, but cannot be predicted. (Which social scientist anticipated Gorbachev's introduction of Glasnost?) Pure contingency has had profound consequences that we may comprehend without anticipating. (The length of Cleopatra's nose

played a role in the declaration of war.) Human life resembles the weather in being an open system that never reaches equilibrium; like the weather we can recognize what transpires (storms, sunny days) even when unable to say what comes next.

Predictive laws are inadequate explanations for a second reason. The few generalizations in social science that hold up are qualified by *certeris paribus* conditions; they hold true "other things being equal," meaning their scope of application is extremely ill-defined. They are secondary phenomena, the results of social practices and institutions whose functioning is symbolic and representational, not causal. They are the consequence of factors such as the necessity for scheduling and coordinating our actions (brushing teeth after eating breakfast). They reflect the way that knowledge of statistical regularities shapes our action. (We know we catch more colds in winter, and predictably stock up on Vitamin C.) They work only because our understanding of the causal regularities of nature constrains social life. (Storm clouds bode rain, so we tend to seek shelter when thunderclouds form.) (Cf. MacIntyre 1984, 93ff; Taylor 1979, 69ff).

Both empiricist and rationalist inquiry seek a kind of explanation that only makes reference to interpretation-free elements and formal rules. In the natural sciences such an approach works because scientists can forget the conceptual and practical framework they are working within: the accepted paradigm. In a human science like psychology the same approach leads to distortions and trivial "findings," because it suppresses the framework of concerns and interests of the people being studied. It also assumes, falsely, that researchers have reached consensus on the best perspective from which to conduct their inquiries.

What is "Scientific Method" in Psychology?

We have examined arguments that say that both empiricist and rationalist forms of inquiry concern themselves with domains of inquiry that exclude and deny context and setting, that both seek an unattainable foundation of certainty upon which to construct scientific knowledge, and that both seek explanations in the form of elements and rules that avoid both interpretation and human interests and concerns. And we have reviewed arguments that both rationalism and empiricism inevitably require interpretation of the phenomena they aim to explain, at the same time as they deny doing so.

We can now consider the conception of method that is involved in each form of inquiry. If interpretive inquiry makes a radical break with the fictions of a pre-existing, independent object to scientific investigation and of an epistemological foundation upon which objective theories can be based, the break in the view of what is appropriate method is a radical one, too. It is easy

to set up a straw man when discussing conceptions of scientific method. In a sense there are as many methods in psychology as there are research programs. But the fact remains that over the centuries various programmatic statements have been made about proper scientific method, and psychology has been more than susceptible to their appeal.

In both empiricist and rationalist inquiry, method is what is considered necessary to obtain foundational knowledge and systematically generate an appropriate kind of explanation. In empiricist inquiry, procedures are necessary to collect reliable data under selected or manipulated conditions, and then to identify regularities among these data that meet stringent and objective criteria (generally levels of statistical significance). In rationalist inquiry, formal principles must be defined that will serve as the basis for an axiomatization of the domain of knowledge under investigation. In both stances method is considered a matter of procedure or technique, involving analytical operations that require no involvement of human judgment and valuation. This is no surprise; since the grounding (in a foundation of either brute data or formal axioms) and the explanation (by description of regularities, or formal derivations) are by intention interpretation-free, it follows that the method linking them must also be interpretation-free. If either the empiricist or the rationalist program is to succeed, reflection, judgment and evaluation must be replaced by technique. And, equally, if both an interpretation-free foundation and a value-neutral explanation turn out to be fictional notions in the human sciences, then method will not prove to be reducible to procedure. Within both rationalist and empiricist approaches to inquiry there are two aspects of method we shall discuss: establishing a *point of view* from which to proceed, and *evaluating* the explanation produced.

Empiricism

The Objective Point of View. The empiricist researcher aims to achieve what might be called an absolute perspective; a God's eye view, from which the world could be described in objective terms. Such a perspective would be distinct from that of any particular observer. The researcher must try to become detached from any personal involvement and adopt what Nagel (1986) calls "the view from nowhere." But cultivating the appropriate "scientific attitude" is hardly a matter of mere procedure. Being value-neutral, free from prejudice, objective and unbiased (to the small extent that these are possible at all) involves adopting a special posture of distance from or denial of one's personal interests and concerns. And being unconcerned or disinterested is as little achieved through procedures and techniques as is being concerned. Paradoxical though it sounds, detachment is itself a kind of perspective, a way of viewing the world, that cannot be reduced to technique. Computers,

though they implement procedures, are not detached: they are blind. They don't see from nowhere: they see nothing.

The Correspondence Problem. In empiricism, evaluating an explanation is, in large part, a matter of employing techniques or procedures that aim to assess correspondence with a reality independent of the researcher. This of course is where positivism placed its weight: improving the hygiene of science by specifying operations, checks and rules that would ensure that theories and statements were grounded through chains of logic to the bedrock of fundamental data. Bacon and Hume appealed to inductive logic to guarantee the truth of a theory; since Popper the claim has been that the logic of falsification guarantees rejection of false theories. In either case truth is viewed as a matter of fit between theory and reality. But the whole enterprise of employing procedures that will validate a hypothesis or theory is based on a conundrum: the impossible "correspondence theory" of truth that began with Locke and was continued by Mach and the Vienna Circle positivists. Scientific procedures are, on this account, those that establish and maintain a correspondence between theory and world: that provide accurate descriptions of an independent reality. But how could such a correspondence ever be assessed? Who can be in a position to decide whether our ideas, our theories, or even our observations correspond with an independent reality? Locke himself saw the paradox:

> It is evident that the mind knows things not immediately, but only by the intervention of the ideas it has of them. Our knowledge therefore is real only so far as there is conformity between our ideas and the reality of things. But what shall be here the criterion? How shall the mind, when it perceives nothing but its own ideas, know that they agree with things themselves? (Locke 1690/1975).

Locke tried to finesse his way out of this problem with an unconvincing appeal to a correspondence "ordained and adapted to" "by the wisdom and will of our Maker" (op. cit.). Again we find that method cannot be a matter of procedure. Validating an explanatory account by establishing degree of correspondence with reality cannot be done by procedure, because no procedure could possibly accomplish the desired comparison.

The logic of falsification (Popper 1959) seems at first glance to avoid the correspondence problem, but it does not. This logic runs, in brief, as follows. From the theory to be assessed, a hypothesis is derived. This hypothesis makes explicit prediction about the character or co-occurrence of states of affairs, given specified conditions (that may be brought about through manipulation, if needed). The hypothesis is counted as falsified if the prediction is observed to be false. A theory stands or falls, is "corrobo-

rated" or uncorroborated, on the basis of its power to make unfalsified predictions. Through rebuttal of predictions that are not realized, theories are refuted and rejected. We hang onto a theory whose predictions are not false, always bearing in mind that it may just have been lucky; a theory is never verified, it just escapes falsification. We never make positive claims that a theory is valid; only negative claims that it has survived the tests that its competitors failed.

Thus far, we seem to need no reference to notions and claims of correspondence. But note that the hypotheses, the conjectures or predictions, must be tested through observation of the states of affairs they describe. It is still assumed, then, that there are factual states of affairs that can be objectively, neutrally, described. Indeed, Popper believes that the correspondence theory has been "rehabilitated" (1979, p. 314) because, he claims, we can develop metalanguages that both refer to the statements in a theory and describe facts about the world, and so put them side by side for comparison. Popper fails to see this merely shifts the problem's location: how does a metalanguage get the access to reality, to "a certain fact" (op. cit., 315) that would be needed to know that its "description" is correct? Kuhn (1970, p. 283) sees the need that falsification retains to somehow relate sentences and actual observations and experiments, and argues that Popper "is entirely silent about how it can do so." Kuhn concludes that "rather than a logic, Sir Karl has provided an ideology; rather than methodological rules, he has supplied procedural maxims" (op. cit., 283). Even in the guise of falsificationism, empiricist method is actually a matter of maxims, not rules.

Rationalism

The Detached Point of View. The rationalist researcher aims for a viewpoint that is similar to that sought after in empiricism: an attitude of detachment from the concerns and interests of everyday life that supposedly leads, through abstraction, to clarity. Descartes' own account of his meditations provides a clear example of this aim. Descartes deliberately cultivated a special attitude of detachment; to prepare himself he made a concerted effort to abstract himself from all practical involvements and their attendant cares, predicaments and significances, in order to engage in exercises of reflection and cogitation. He aimed for a physical setting and a state of mind where he could be devoted solely to his inquiry, with no other interests or distractions, generally by retreating to a comfy chair by the fire. "Sitting by the fire, wearing a dressing gown" (1641/1968, p. 96) he describes his technique: "I shall now close my eyes, stop up my ears, turn away all my senses, even efface from my thought all images of corporeal things" (op. cit., 113), aiming to get to a point where "my mind is free from all cares" (op. cit., 95).

This aspect of Descartes' method is an unwitting attempt to establish the kind of engagement that Heidegger calls the "present-at-hand" (Heidegger 1927/1962; cf. Packer 1985). This is a mode of detachment from practical activity, and Heidegger argues that it is derivative and privative: experience in this mode is distorted, a shadow of the kind of understanding provided by concerned involvement. Again it is evident that what is going on here is not the application of an interpretation-free procedure; it is the adoption of a certain kind of "detached involvement" with the world, a short-lived laying aside of one concerns and interests. Rationalist method also turns out not to be what it claims to be.

Intuitions of Correctness. Recall that a rationalist account of a psychological phenomenon aims at a reconstruction of the formal structures that underlie appearances. For instance, slips of the tongue might be explained with a computer simulation of cognitive processes of retrieval from memory, limited-capacity processing, and output production. Now the phenomena themselves don't provide any guidance for assessing the reconstruction. Rather, this is a matter of showing that a reconstruction is consistent and complete. In practice this means, first, demonstrating that the system follows its own rules and, second, that the output carries a sense of appropriateness; that it accords with "the intuitive knowledge of competent subjects" (Habermas 1979, 9). For instance, in our tongue-slip example, the program should not only be able to use its rules to generate slips we've observed, it should also make new slips of its own. And these should seem appropriately "slippy" to us. Similarly, the syntactic rules of a Transformational Grammar can be examined to see that they will generate sentences, and novel sentences must be examined to decide whether they seem "grammatical." The first of these is a straightforward matter, but the second leads to problems. Appeals of this type, to an intuitive sense that a particular rational reconstruction satisfies the relevant criterion—be it one of logical indubitability, linguistic equivalence, moral adequacy, or slippyness—can be found from Descartes to Chomsky. Descartes resolved to "accept nothing in my judgments beyond what presented itself so clearly and distinctly to my mind, that I should have no occasion to doubt it" (Descartes, cited in Williams 1978, 32). Saussure made the same assumption that indubitable intuitions can be found. He "seems to assume that the native speaker is normally able to make a correct identification of features of linguistic structure, by some simple process of introspection and reflection" (Harris 1987, 11). Harris points out that this appeal to intuition is *central* to Saussure's structuralist project, not just an afterthought: "The theoretical significance of this assumption it would be difficult to exaggerate. Only its unquestioned acceptance will justify Saussure's lack of concern with providing any systematic 'discovery procedure' for the identification of linguistic signs." In just the same way, for Chomsky the reconstruction of

linguistic competence must "meet the empirical conditions of conforming, in a mass of crucial and clear cases, to the linguistic intuition of the native speaker" (Chomsky 1965, 21).

Despite their long history, intuitions of this kind provide, at best, dubious validation of a formal explanatory reconstruction. First, intuition and logic can go in contrary directions. For this reason, in mathematics there has long been an effort to replace intuitions of validity with formal proof (Hahn 1933/1980). Second, intuitions may carry a sense of clarity and certainty that turns out to be illusory. We have seen that empiricist inquiry involves a hidden, and indefensible, assumption that an observer has direct, unproblematic access to the real world. Rationalist inquiry involves an equally suspect assumption that we can have accurate intuitive knowledge about the operation of some portion of our cognitive apparatus. (Psychologists especially should doubt this!) Habermas apparently finds acceptable the consequence that "linguistic intuitions can be 'false' only if they come from incompetent speakers" (1979, p. 212). Such a view ignores the likelihood that even people we would not consider incompetent (researchers included) may have a partial, incomplete or distorted understanding of themselves and what they are doing. It also overlooks the fact that the judgments being requested (grammatical well-formedness, semantic equivalence, moral adequacy) require supposition of a putative setting or usage. Intuitions draw upon and reproduce a background understanding of typical situations and usual aims, an understanding which is however not part of the reconstructed competence. And, viewed in this light, intuitive judgments turn out to involve interpretation: they appeal to and grow out of areas of know-how, skill, style, and expertise that elude formalization. So, to return to our main theme, the appeal to intuitions as a basis for evaluating a reconstruction can hardly be said to involve the simple application of procedures or operations.

In light of the dubious status of their claims to successfully define scientific method in terms of interpretation-free procedures or techniques, it is perhaps not too strong to say that rationalism and empiricism are fundamentally ideological stances. Reports of research framed within each of these perspectives (accounts both ancient and modern) deal not so much with what *is* done in systematic inquiry as with what it is wished *could* be done. Unwarrantable claims are made, and both empiricism and rationalism cover up the role and particular character of human interests and concerns. For if method cannot be reduced to procedure and technique, it follows that, here as before, what empiricist and rationalist researchers do is not what they claim to be doing. If the two aspects of traditional objectivist inquiry that we have discussed—establishing a point of view and evaluating an explanation—are not procedures, what is going on? Both empiricism and rationalism turn out to contain a hidden interpretive component. Psychological inquiry involves

the researcher forming a relationship with research participants, and assessing and evaluating, communicating and acting on what has been learned. The relationship will involve an attitude or posture on the researcher's part; the evaluation will appeal to shared values and norms.

Does Interpretive Inquiry Have a Method?

The tacit assumption in traditional psychological inquiry that scientific method must involve only technique or procedure explains a curious anxiety about method that runs through the interpretive research literature. In large part, the attraction of an interpretive approach lies in the relief it offers from the procedural strictures of experimentalist psychology, which many of us feel loosens our grip on the baby in an effort to ensure that the bathwater is handled properly. Experimental design and statistical analysis, for example, are often taught as though they are keys that will unlock any psychological puzzle-box, rather than as adjuncts to an understanding of people and their actions.

Perhaps in reaction to these strictures, some who have adopted an interpretive stance have argued that hermeneutics has *no* method. In this volume Misgeld and Jardine come closest to this position. They cite Gadamer's claim that "the problem of hermeneutics goes beyond the limits that the concept of method sets to modern science. The understanding and the interpretation of texts is not merely a concern of science, but is obviously part of the total human experience of the world. The hermeneutic phenomenon is basically not a problem of method at all. It is not concerned with a method of understanding, by means of which texts are subjected to scientific investigation like all other objects of experience" (Gadamer 1960/1986, xi). But what Gadamer calls "Method" (with capital M) and sets up in opposition to "truth" is not the actual methods of science but the sloganistic statements of positivism; explicitly the canons of induction laid out by Hume and Mill, and by extension the procedures of hypothesis and deduction asserted by Popper. As Bernstein points out:

> Gadamer tends to rely on an image of science which the postempiricist philosophy and history of science have called into question .... Method [in natural science] is more like hermeneutical understanding than Gadamer frequently acknowledges, and when it comes to validating competing understandings and interpretations we are confronted with the type of critical problems that are so fundamental for understanding scientific inquiry (Bernstein 1983, 168).

In other words Gadamer's distinction between Method and understanding is somewhat overdrawn, and perpetuates a mythology about the way