19. EPISTEMOLOGICAL AND METHODOLOGICAL BASES OF NATURALISTIC INQUIRY

EGON G. GUBA and YVONNA S. LINCOLN

INTRODUCTION

It is important, at the outset, to recognize what naturalistic inquiry is and what it is not. Naturalistic inquiry is a paradigm of inquiry; that is, a pattern or model for how inquiry may be conducted. While it is frequently asserted that its distinguishing features are: that it is carried out in a natural setting (and hence the term naturalistic), that it utilizes a case-study format, and that it relies heavily on qualitative rather than quantitative methods, none of these features define naturalistic inquiry. While all of these assertions are essentially correct, no one of them, nor indeed all of them together, capture the full significance of the term paradigm. Paradigms differ from one another on matters much more fundamental than the locale in which the inquiry is conducted, the format of the inquiry report, or the nature of the methods used. Paradigms are axiomatic systems characterized by their differing sets of assumptions about the phenomena into which they are designed to inquire.

There are many different paradigms of inquiry. We are all intimately familiar with most paradigms, which we use on virtually a daily basis. So, for example, our system of jurisprudence is based on an adversarial paradigm; religious faiths on theological paradigms; and peer reviews of research proposals on a judgmental paradigm. Those persons concerned with disciplined inquiry, however, in the sense that term is defined


IV. Social Agenda-Directed (Advocacy) Models

by Cronbach and Suppes (1969), have used almost exclusively what is commonly called the scientific paradigm, which we will here term the rationalistic paradigm.¹

A second paradigm, which is also aimed at disciplined inquiry and which is currently receiving a great deal of attention, we term the naturalistic; it is this paradigm that this paper explicates.

One may well ask why anyone would contemplate the use of a competing paradigm when the rationalistic one has gained such widespread legitimacy and achieved such conspicuous successes. How could one doubt the efficacy of the scientific mode for all inquiry? John Stuart Mill urged social science investigators to adopt the scientific methods as long ago as 1843; can there be any question, a century and a half later, that his advice was well-founded?

It seems to us that a variety of evidence may be cited in counter-argument. First, we believe that the judgment that the rationalistic paradigm has enabled conspicuous successes in social and behavioral inquiry is mistaken. Data collected in these arenas has not proved to be aggregatable; where, for example, is the useful residue of the more than 100 years of psychological and educational research? Investigators have, moreover, repeatedly found it impossible to apply the paradigm according to its own basic principles; random sampling, for example, is virtually impossible for both political and ethical reasons. The impact of research on practice is conspicuous by its absence; for example, evaluation data remain unused and the practice of most social institutions, such as schools, hospitals, and prisons, is still based primarily on experience.

Second, we question the utility of the rationalistic paradigm as typically practiced (and as it will be described here) on the ground that it reflects a discredited epistemology of science—positivism. It is apparent that sophisticated scientists can no longer accept positivism; even a casual acquaintance with the field of particle physics provides ample evidence of its inadequacies, as for example, the Heisenberg Uncertainty Principle (Tranel, 1981). Yet practitioners of scientific inquiry, in the hard but especially in the soft sciences, continue to act as if positivism were valid, thereby accepting a position that is essentially analytic, reductionist, empiricist, associationist, reactivist, nomological, and monistic. As we shall see, this posture is inconsistent with the characteristics of many social/behavioral phenomena.

Finally, we suggest that the rationalistic paradigm, like all paradigms, rests upon certain fundamental axioms or assumptions and that the particular axioms of rationalism can be but poorly fulfilled in social/behavioral inquiry. It is our intention to devote a major segment of this paper to a discussion of the rationalistic axioms and their naturalistic counterparts, and to deal with the question of which set of axioms is better fulfilled in the phenomenological field customarily designated as social/behavioral.

But, as we shall demonstrate, the motivation for considering naturalistic inquiry as an alternative paradigm is not founded simply on the desire to avoid the shortfalls of rationalism. Naturalistic inquiry has many characteristics to recommend it on other grounds. So, for example, it offers a contextual relevance and richness that is unmatched; it displays a sensitivity to process virtually excluded in paradigms stressing
control and experimentation; it is driven by theory grounded in the data—the naturalist does not search for data that fit a theory but develops a theory to explain the data. Finally, naturalistic approaches take full advantage of the not inconsiderable power of the human-as-instrument, providing a more than adequate trade-off for the presumably more objective approach that characterizes rationalistic inquiry.

Even without depending on these claims for the advantages of naturalistic inquiry, however, it seems clear that the examination of an alternative paradigm has utility, since such examination forces out otherwise hidden assumptions and meanings. If it is true that the examined life is “better” than the unexamined, it is surely the case that the examined paradigm is better than the unexamined.

This paper has two major purposes:

1. To distinguish the rationalistic and naturalistic paradigms on five basic axioms, and to describe, in addition, six postures on which practitioners of these paradigms have traditionally differed.
2. To suggest some methods for responding to four basic criteria for trustworthiness (analogues to the traditional rationalistic criteria of internal and external validity, reliability, and objectivity) that might be used by naturalists to counter charges of lack of discipline (sloppiness).

THE BASIC AXIOMS THAT DISTINGUISH THE NATURALISTIC FROM THE RATIONALISTIC INQUIRY PARADIGM

Axioms may be defined as the set of undemonstrated (and undemonstrable) propositions accepted by convention or established by practice as the basic building blocks of some conceptual or theoretical structure or system. Before undertaking an examination of the axioms that underlie the two paradigms of interest to us here, it may be useful to undertake a small digression to clarify the nature of axiomatic systems.

Probably the best known and most widely experienced system of axioms is that undergirding Euclidean geometry. Euclid set himself the task of formalizing everything known about geometry at his time—essentially, that meant systematizing the rules-of-thumb used by land surveyors, who could not provide any proof of their validity other than experience. It was Euclid’s powerful insight that these rules could be proved by showing them to be logical derivatives from some simple set of self-evident truths. Euclid began with four such axioms (Hofstadter, 1979):

1. A straight line segment can be drawn joining any two points.
2. Any straight line segment can be extended indefinitely in a straight line.
3. Given any straight line segment, a circle can be drawn having the segment as radius and one end-point as center.
4. All right angles are congruent.

With these four axioms, Euclid was able to derive the first 28 of the eventually much larger set of theorems. But the 29th proof he attempted was intractable; Euclid had to assume it instead as a fifth axiom:
5. If two lines are drawn which intersect a third in such a way that the sum of the inner angles on one side is less than two right angles, then the two lines inevitably must intersect each other on that side if extended far enough.

The modern way to state this axiom is as follows: Given a line and a point not on that line, it is possible to construct only one line through the point parallel to the given line.

As compared to the first four axioms, the fifth seems strained and inelegant; Euclid was sure that eventually he would be able to find a way of proving it in terms of the first four. But his hope was not to be realized within his lifetime, or indeed, ever; two millennia of effort by mathematicians have failed to provide a proof.

Early attempts to prove this axiom/theorem were of what mathematicians would call the direct variety; later, mathematicians fell back on indirect proofs, one variant of which is to assume the direct opposite of what one wishes to show and then to demonstrate that this opposite assumption leads to absurd conclusions (theorems).

It was exactly this approach, however, that culminated in so-called non-Euclidean geometries. Not only were the consequences of non-Euclidean assumptions not absurd, they were in fact of great utility. One such geometry is called Lobachevskian; this form takes as its fifth axiom: “Given a line and a point not on that line, it is possible to draw a bundle of lines through the point all of which are parallel to the given line.” Now this axiom flies in the face of all human experience; yet it yields results of great interest, for example, to astronomers. One of the theorems provable from the Euclidean fifth axiom is that the sum of angles in a triangle is 180°, but the sum of angles in Lobachevskian triangles approaches 180° as triangles become “small.” Earth-size triangles must all be small, since no such triangle has ever yielded a sum of angles less than 180°. But astronomically sized triangles are very much larger, and astronomers find that Lobachevskian geometry provides a better “fit” to the phenomena that they investigate than does Euclidean.

From this digression, we may deduce several crucial points:

1. Axioms are arbitrary and may be assumed for any reason, even if only for the sake of the game.
2. Axioms are not self-evidently true, nor need they appear so; indeed, some axioms appear very bizarre on first exposure.
3. Different axiom systems have different utilities depending upon the phenomenon to which they are applied. These utilities are not determined by the nature of the axiom system itself but by the interaction between these axioms and the characteristics of the area in which they are applied. Thus, Euclidean geometry is fine for terrestrial spaces but Lobachevskian geometry is better for interstellar spaces.
4. A decision about which of several alternative axiom systems to use in a given case is made by testing the fit between each system and the case, a process analogous to testing data for fit to assumptions before deciding on which statistic to use in analyzing them.
Thus, the axioms to be described below should not be judged on the grounds of their self-evident truth, their common sense qualities, or their familiarity to the inquirer, but in terms of their fit to the phenomena into which one proposes to inquire. When the rationalistic axioms fit, the rationalistic paradigm should be used; when the naturalistic axioms fit, the naturalistic paradigm should be used.

Five axioms differentiate the rationalistic and naturalistic paradigms; these five axioms are summarized in Table 1. Immediately following is a formal statement of the five axioms in both their rationalistic and naturalistic versions. We attend to the question of which set provides a better fit to social/behavioral phenomena in a following section.

**Axiom 1: The Nature of Reality**

- **Rationalistic version:** There is a single, tangible reality fragmentable into independent variables and processes, any of which can be studied independently of the others; inquiry can converge onto this reality until, finally, it can be predicted and controlled.
- **Naturalistic version:** There are multiple, intangible realities which can be studied only holistically; inquiry into these multiple realities will inevitably diverge (each inquiry raises more questions than it answers) so that prediction and control are unlikely outcomes although some level of understanding (verstehen) can be achieved.

**Axiom 2: The Inquirer-Objective Relationship**

- **Rationalistic version:** The inquirer is able to maintain a discrete distance between himself and the object of inquiry.

### Table 1. Axiomatic Differences Between the Rationalistic and Naturalistic Paradigms

<table>
<thead>
<tr>
<th>Axioms About</th>
<th>Rationalistic Paradigm</th>
<th>Naturalistic Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reality</td>
<td>Single, tangible, convergent, fragmentable</td>
<td>Multiple, intangible divergent, holistic</td>
</tr>
<tr>
<td>Inquirer/respondent relationship</td>
<td>Independent</td>
<td>Inter-related</td>
</tr>
<tr>
<td>Nature of truth statements</td>
<td>Context-free generalizations—nomothetic statements—focus on similarities</td>
<td>Context-bound working hypotheses—idiographic statements—focus on differences</td>
</tr>
<tr>
<td>Attribution/explanation of action</td>
<td>Real causes; temporally precedent or simultaneous; manipulable; probabilistic.</td>
<td>Attributional shapers; interactive (feed-forward and feed-back); non-manipulable; plausible.</td>
</tr>
<tr>
<td>Relation to Values to Inquiry</td>
<td>Value-free</td>
<td>Value-bound</td>
</tr>
</tbody>
</table>

*Note: In certain of our previous writing (Guba, 1978, 1981; Guba & Lincoln, 1981) we have focused on only the first three of these five axioms. However, the latter two now seem to us as equally if not more important.*
- **Naturalistic version:** The inquirer and the object interact to influence one another; this mutual interaction is especially present when the object of inquiry is another human being (respondent).

**Axiom 3: The Nature of Truth Statements**
- **Rationalistic version:** The aim of inquiry is to develop a nomothetic body of knowledge; this knowledge is best encapsulated in generalizations which are truth statements of enduring value that are context-free; the stuff of which generalizations are made is similarities among units.
- **Naturalistic version:** The aim of inquiry is to develop an ideographic body of knowledge; this knowledge is best encapsulated in a series of working hypotheses that describe the individual case; differences are as inherently interest as (and at times more so than) similarities.

**Axiom 4: Attribution/Explanation of Action**
- **Rationalistic version:** Every action can be explained as the result (effect) of real cause that precedes the effect temporally (or is at least simultaneous with).
- **Naturalistic version:** An action may be explainable in terms of multiple interacting factors, events, and processes that shape it and are part of it; inquirers can, at best, establish plausible inferences about the patterns and webs of such shaping in any given case.

**Axiom 5: The Role of Values in Inquiry**
- **Rationalistic version:** Inquiry is value-free and can be guaranteed to be so by virtue of the objective methodology which is employed.
- **Naturalistic version:** Inquiry is value-bound in at least five ways, captured in the corollaries which follow:
  
  Corollary 1: Inquiries are influenced by inquirer values as expressed in the choice of a problem, and in the framing, bounding, and focussing of that problem.
  
  Corollary 2: Inquiry is influenced by the choice of paradigm which guides the investigation into the problem.
  
  Corollary 3: Inquiry is influenced by the choice of substantive theory utilized guide to the collection and analysis of data and in the interpretation of findings.
  
  Corollary 4: Inquiry is influenced by the values which inhere in the context.
  
  Corollary 5: With respect to Corollaries 1 through 4 above, inquiry is either value-resonant (reinforcing or congruent) or value-dissonant (conflicting). Problem, paradigm, theory, and context must exhibit congruence (value resonance) in order to produce meaningful results.

The decision about which paradigm to use depends, we again assert, on an assessment of the area to be studied to determine the degree of fit between the axioms of each paradigm and the area. If we limit ourselves to consideration solely of the area
commonly designated as social/behavioral inquiry, we make the following observations about fit:

AXIOM 1: THE NATURE OF REALITY. In the hard and life sciences there can be little doubt that there exists a tangible reality, which is the focus of inquiry: actual events, objects, and processes found in nature that can be observed and often measured. The utility of breaking this physical world into variables is well demonstrated by such terms as time, mass, velocity, acceleration, distance, charge, and the like. Such variables can all be studied independently and related to one another in functional expressions.

In the social/behavioral sciences, however, the class of phenomena typically addressed in inquiry has no reality in the physical sense. That is not to say that tangible objects, events, and processes do not enter into human behavior. However, it is not these tangibles that we care about but the meaning and interpretation people ascribe to them, for it is these constructions that mediate their behavior. These constructions do not have reality but exist only in the minds of people. As Filstead (1979) suggests, “There are multiple realities. . . . Individuals are conceptualized as active agents in constructing and making sense of the realities they encounter.” (p. 36) There are as many constructions as there are people to make them.

Nor are these constructions equivalent to perceptions. We are not belaboring here the well-known fable of the blind men and the elephant. If that fable were to provide a useful metaphor, it would do so only if there were no elephant. We mean to suggest precisely that there is no tangible reality that can be touched as the blind men touched the elephant. The fable deals with their perceptions of the elephant; we deal with constructions that are developed from whole cloth in the mind of the constructor.

Since these constructions reside wholly in the minds of people, they are substantially inaccessible and must be dealt with in holistic fashion; they cannot be divided into parts or variables. Further, since the realities are multiple, it is futile to expect inquiry to converge. One cannot converge on a common or typical reality since each is idiosyncratic. The more people one explores, the more realities one encounters; inquiry diverges as a result. Every inquiry finally raises more questions than it answers.

AXIOM 2: THE INQUIRER-OBJECT RELATIONSHIP. In the hard and life sciences, it is not unreasonable to posit the ability of the inquirer to maintain a discrete distance from the phenomenon under study. Balls rolling down inclined planes, chemicals interacting in a test tube, or cells subdividing under a microscope are unlikely to be influenced by the fact that someone is watching, nor is the watcher likely to be influenced (in any way adverse to the investigatory outcome) by what he observes. In the social/behavioral sciences, however, the reactivity of subjects (Campbell & Stanley, 1963; Webb et al., 1966) is well recognized. It is commonly understood that objects of inquiry, when they are human, may react to inquirers of their inquiry methods. Less appreciated is the fact that the inquirer is also subject to interaction. Just as the inquirer may shape the respondents behavior, so may the respondent shape the inquirer’s behavior. Nor should it be supposed that the interpolation of
a layer of objective instrumentation between the inquirer and the respondent(s) is sufficient to overcome or offset this interaction. Images of what the respondent may be like or how he or she might respond guide the inquirer in devising his or her instruments. Images of what the inquirer wants, or what he or she will do with the responses, guide the respondent in dealing with the instruments. Images of what the respondent meant by a response guide the inquirer in coding, interpreting, and even in accepting the respondent’s return, and so on.

Far from deploving inquirer-respondent interactivity, the naturalist exploits it. If interactivity could be eliminated by some magical process, the naturalist would not think the trade-off worthwhile, because it is precisely this interactivity that makes it possible for the inquirer to be a smart instrument, honing in on relevant facts and ideas by virtue of his sensitivity, responsiveness, and adaptability. More of this will be said below.

**AXIOM 3: THE NATURE OF TRUTH STATEMENTS.** The development of generalizations is said by many to be the ultimate aim of inquiry. Why would anyone want to invest time and effort in a study that can yield no more insight than the single occurrence has to offer? Context-free statements of enduring truth value are clearly prized. The question that confronts us is whether they are achievable.

In the hard and life sciences, that question must be answered with a resounding Yes. Statements like $F = ma$ and $e = mc^2$ are derivable in physics, for example, and they hold, whether tested in the eighteenth or twentieth centuries, on earth, Mars, the moon, or anywhere else in the universe. Such statements form the cornerstones of most disciplines, indeed, the phrase *nomothetic science* implies exactly the development of law-like generalizations which provide dependable bases for prediction and control.

There is a real question, however, whether generalizations can be made that will be true forever. Cronbach (1975) utilizes an interesting metaphor to make the counterpoint. Generalizations, he asserts, are like radioactive substances; they decay and have half-lives. He gives numerous examples from the hard as well as the social/behavioral sciences, for instance: the failure of DDT to control pests as genetic transformations make them resistant to the insecticide; the shifting of stars in their courses so as to render star maps obsolete; the suggestion by Ghiselli that the superiority of distributed, over massed, practice may not remain valid from one generation to another; and Bronfenbrenner’s conclusion that class differences in parenting observed in the 1950s were just the reverse of those observed in 1930. Thus, it is dubious whether generalizations can be made about human behavior with impunity. Time is an enormously important factor, and who can offer an example of human behavior that is context-free?

Now this argument should not be interpreted to mean that there can never be any transfer from one situation to another. What we mean to say is that statements cannot be made about human phenomena that are likely to be true for even a substantial number of years (not to mention forever) or for any substantial number of contexts (not to mention any and all contexts). Conditionals, contingencies, and disjunctions must all be taken into account (Wiles, 1981). Moreover, differences in
times or contexts are as important to know about in making the judgment of transferability as are similarities. The naturalist, then, is concerned with developing an adequate ideographic statement—thick description—about the situation he is studying, in order to make judgments about transferability possible, should anyone care to ask that question.

AXIOM 4: ATTRIBUTION/EXPLANATION OF ACTION. The search for causality is the mainspring that drives conventional research. Even such authors as Cook and Campbell (1979) who recognize that causality is a slippery concept nevertheless define designs as serving “to probe causal hypotheses” (p. ix), see causal connections as “real,” even if “imperfectly perceived” (p. ix), and address their book to those “who have already decided that they want a causal question answered” (p. 2). For them, the question is not whether to entertain a concept of causality but which concept to accept.

The meaning to be imputed to the term causality has been under discussion for centuries, despite which, as Cook and Campbell note, “the epistemology of causation … is at present in a productive state of near chaos” (p. 10). Causality was originally conceived in a common sense way in if-then terms, probably because of the tendency of early scientists to view the world as a huge machine. In the early eighteenth century, David Hume noted that causality was never directly observed but merely imputed by the observer when two events were physically contiguous and temporally adjacent. He espoused a regularity or constant conjunction theory of causality that denied the need for the concept of causality at all. Later, an essentialist view emerged, based on the idea of necessary and sufficient conditions; essentialists sought functional laws expressing inevitable cause-effect relationships (Weir, 1980). Currently an activity theory of causation placing heavy emphasis on manipulation as the test for inferring cause-effect relationships has wide currency, lending legitimation to the notion that the best test for cause-effect relationships is the experiment (Cook & Campbell, 1979). Cook and Campbell (1979) themselves opt for the critical-realist position:

The perspective is realist because it assumes that causal relationships exist outside of the human mind, and it is critical-realist because it assumes that these valid causal relationships cannot be perceived with total accuracy by our imperfect sensory and intellective capacities. (pp. 28–29; emphasis added).

Formulations such as these have meaning (to some degree) within the rationalist paradigm insofar as it is applied to the hard and life sciences. There seems to be little question about the appropriateness of seeking cause-effect relationships when one is talking about gas laws, electric circuits, or the impact that mashes the fender of an automobile. But these ideas are highly suspect when applied to the arena of social/behavioral inquiry. The realities that we are dealing with an constructed and exist only in the minds of people; if the realities are constructed why not the attributions or explanations of causality? And if that is reasonable emergent attributional and/or semantic theories of causation (if that is now the proper term) are more
likely to be meaningful than any of the formulations that have developed in relation to the other inquiry areas. In these views, causality is not merely empirical or contingent but depends heavily on meaning. Questions such as, “Is the treatment applied via a particular instructional program effective in increasing student learning?” imply a cause/effect relation between treatment and student learning, but the nature of that relationship surely depends on what is meant by treatment and student learning and what the criteria of effectiveness are taken to be. In other words, causality is a construction less traceable by empirical linkages than by plausible semantic/attributional linkages. The concepts of constructed reality and attributed causality are congenial to and supportive of one another.

Thus, the naturalist argues, there can be no certain way of determining cause-effect; indeed, the very concept of causality seems to have outlived its usefulness. Positivists, such as Hume, believed the concept of causation to be unnecessary; naturalists believe it to be archaic. Instead, the naturalist prefers to think of multiple factors and conditions, all of which interact, with feed-back and feed-forward, to shape one another. Actions can be understood not as having been caused but as having emerged from the constant interplay of its shapers, all of which are themselves part of the action, indistinguishable from it, shaping and being shaped simultaneously. While rationalists seem to have given up certainty in specifying causal relationships and have fallen back on probabilistic statements, the naturalist is satisfied to tease out plausible connections between phenomena.

AXIOM 5: THE ROLE OF VALUES IN INQUIRY. The customary presupposition of rationalists is that inquiry is value-free, that is, that the outcomes of the inquiry are guaranteed by the methodology employed by rationalists to be purely empirical. The data, it is often said, “speak for themselves”; that is, they transcend the values of both inquirers and respondents. Naturalists, on the other hand, presuppose that inquiry is inevitably grounded in the value systems that characterize the inquirer, the respondent, the paradigm chosen, the substantive theory selected, and the social and conceptual contexts. Values cannot be set aside, methodologically controlled, or eliminated. It is more reasonable to acknowledge and take account of values, insofar as one can, than to delude oneself about their importance or to hope that methodological hedges will compensate for their intrusion.

Values, naturalists insist, may enter into and influence the course of inquiry in five ways, all of which are by definition excluded in the strict rationalist construction:

1. Values influence decisions about what to study, how to study it, and what interpretations to make of the resulting data. The evidence for such influences is overwhelming (Bahm, 1981; Homans, 1978; Kelman, 1979; Krathwohl, 1980; Scriven, 1971), and most rationalists are willing to concede at least this form of value intrusion.

2. Inquiry is influenced by the paradigm selected to guide the investigation. The rationalist, for instance, who believes that reality is singular and convergent, will impose that construction on the findings, even when hearing respondents assert
again and again that their constructions of the problem, or of their lives, are at variance with both those of the investigator as well as those of other respondents. Thus, the rationalist proceeds much as does a court of law, constructing and reconstructing into a singular reality that which represents truth to him or her.

3. Inquiry is influenced by the choice of substantive theory, which dictates the methods chosen to collect and analyze the data, and ways of interpreting the findings. The substantive theory (like the methodological paradigm) is a construction, having roots in assumptions and values. Freudian constructions of personality are very different from Skinnerian; bureaucratic organization theory from loosely-coupled theory. If seeing is believing, it is also true that believing is seeing.

4. Inquiry is influenced by the multiple value and belief systems which inhere in the context in which the inquiry is carried out. Contextual values include those stemming from individuals and those which inhere in social/behavioral, human, and organizational phenomena. A study of school curricula in a fundamentalist community is very different from a similar study in an upper-middle class suburb.

5. Finally, inquiry may be characterized as being either value-resonant (reinforcing or congruent) or value-dissonant (conflicting). So, for instance, an inquirer could bound a problem to be studied, choose the paradigm within which he or she will operate, choose a substantive theory to guide the inquiry, and still have to determine whether the inquiry is value-resonant or value-dissonant with the context in which he or she will take the inquiry. When making this decision, problem, paradigm, theory, and context must exhibit internal coherence, value-fit, and congruence (value-resonance) in order for the inquiry to be deemed appropriate and fitting, and in order to produce meaningful findings.

The naturalist admits the role that values play in shaping an inquiry and appreciates the possibility of difficulties arising if there is value-dissonance. While he cannot eliminate value effects (any more than can the rationalist), he endeavors to set up whatever safeguards he can, to expose and explicate the values whenever possible, and to test insofar as he can for value-resonance. In this latter regard, we may note that the naturalist’s propensity for grounding his inquiry (see below) provides a virtual guarantee of value resonance, since the subjects’ constructions and the substantive theory are both extracted from the data rather than laid on them.

SOME CHARACTERISTIC POSTURES

While the axioms represent basic distinctions in premises between the rationalistic and naturalistic paradigms, certain postures typically assumed by practitioners following these two orientations also provide important insights into the differences between them. These postures are not compelled by the axioms, in the sense that they are necessary, logical derivatives (like the theorems of a geometry); yet they are relatively congenial or reinforcing to the practice of the paradigms and probably would be insisted on by each paradigms adherents.
Six of the most common postures are described below. It should be noted that, unlike the case of axioms where either-or decisions must be made, postures could often be compromised. Yet compromises are infrequently found. The reason for this apparent intransigence cannot be laid to the obduracy of the proponents, however; rather, it stems from the fact that the collectivity of postures support and reinforce one another in extremely synergistic ways. Each is, in a sense, a raison d’etre for the others, and to compromise on any one of them is to considerably weaken the collective power of all.

**Preferred Methods.** We have already noted that the rationalistic and naturalistic paradigms are often treated as though the major differentiating characteristic is their relative preference for quantitative or qualitative methods. It is likely that, among the six postures that will be briefly described here, the quantitative-qualitative distinction is the one that can be most easily and sensibly compromised. Cook and Reichardt (1979) have referred to the distinction as “unhelpful,” and have called for more widespread utilization of both types of methods, a call with which we can agree. Each approach has advantages: quantitative methods have greater precision and are mathematically manipulable, while qualitative methods are richer and can deal with phenomena not easily translatable into numbers. For the naturalist, the propensity toward the use of qualitative methods is less accounted for by these advantages, however, than by the fact that qualitative methods are normally preferred by a human using himself or herself as a prime data collection instrument. Techniques such as interview, observation, use of non-verbal cues and unobtrusive measures, and documentary and records analysis seem more appropriate in that case.

**Source of Theory.** Rationalists prefer *a priori* theory; indeed, they are likely to insist that inquiry without *a priori* theory is impossible. Theories always exist, they say, even if only at the implicit level. It is better to make them explicit than to be uncertain about what is guiding one’s inquiry. The naturalist suggests that it is not theory but the inquiry problem that guides and bounds an inquiry. *A priori* theory constrains the inquiry and introduces biases (believing is seeing). In all events, theory is more powerful when it arises from the data rather than being imposed on them. It is better to find a theory to explain the facts than to look for facts that accord with a theory. Again, there is something to be said for each point of view. Surely rationalists would not wish to devise theory that was never shown to have any relation to facts, nor would the naturalist insist that each inquiry had to establish its own theory de novo. Yet the naturalist, using himself as instrument, building on his or her tacit as well as propositional knowledge and unrolling the inquiry design as the study proceeds, would find *a priori* theory uncongenial, preferring to develop the theory as his or her collection of facts grew and his or her insights into their possible meanings matured.

**Knowledge Types Used.** Rationalists confine the types of knowledge admissible in any inquiry to *propositioned* knowledge (Polanyi, 1966), that is, knowledge that can be cast into language forms (sentences). In view of their insistence on *a priori* theory and their interest in shaping inquiry preordinately around certain questions and hypotheses derived from it, such a tendency is not surprising. Naturalists, intent
upon the use of the human as the prime data collection instrument and wishing to utilize the capabilities of that instrument to the fullest, also admit and build upon tacit knowledge: intuitions, apprehensions, “vibes,” which, while not expressible at any given moment, nevertheless occur to the inquirer by virtue of his or her training and experience. Of course, the naturalist seeks to recast his tacit knowledge into propositional form as soon as possible, since without so doing he cannot communicate with others—and probably not even with himself—about his findings. Yet to confine the inquiry itself only to those things that can be stated propositionally is unduly limiting from the naturalist’s viewpoint, since it eliminates to a large extent the characteristic that is the major warrant for the use of the human-as-instrument.

INSTRUMENTS. The rationalist prefers non-human data collection instruments, because they appear to be more cost-efficient, have a patina of objectivity, and produce information that can be systematically aggregated. The naturalist prefers humans-as-instruments because of their greater insightfulness, their flexibility, their responsiveness, the holistic emphasis they can provide, their ability to utilize tacit knowledge, and their ability to process and ascribe meaning to data simultaneously with their acquisition. Just as a “smart” bomb need not be dropped accurately on target to find its way unerringly to it, so the smart human instrument need not begin with a precise problem statement, theory, hypothesis, or method in order to find its way unerringly to what is most salient in a situation. As Hofstadter (1979) points out, there is an exact trade-off between perfection and adaptability; the more perfect an instrument is for some use, the less adaptable to others. The human instrument, while admittedly imperfect, is nevertheless exquisitely adaptable. For the naturalist, with his or her propensity for grounded theory and emerging design, the human instrument is the ideal choice.

DESIGN. The rationalist insists on a preordinate design; indeed, it is sometimes asserted that a good design specifies in dummy form the very tables that will ultimately be found in the report. The naturalist, entering the field without a priori theory or hypotheses (mostly), is literally unable to specify a design (except in the broadest process sense) in advance. Instead, he or she anticipates that the design will emerge as the inquiry proceeds, with each day’s work being heavily dependent on what has gone before. Given his or her other postures, the naturalist has no choice but to opt for an emergent (rolling, cascading, unfolding) design. Of course there is no reason why the naturalist should not be as specific as he or she can, without constraining his or her options.

SETTING. Finally, the rationalist prefers to conduct studies under laboratory (contrived, controlled, manipulable) conditions in order to exclude from the inquiry any influences other than those at which the inquiry is aimed; that is to exclude all confounding variables. The naturalist, on the other hand, prefers natural settings, arguing that only in such settings can one arrive at reasonable formulations and interpretations. If theory is to be properly grounded, the inquirer must observe the facts as they normally occur, not as they are contrived in an artificial context.

It should now be clear why we asserted earlier that these six postures constitute a synergistic set. Compromises are, of course, possible on each posture, but each sup-
ports the others; one cannot argue for the naturalist’s preference on any one posture without invoking his preferences on other postures as well. It is difficult to imagine a naturalist at work who could be content with a mix-and-match strategy, however desirable that might be from the point of view of achieving a rapprochement.

THE TRUSTWORTHINESS OF NATURALISTIC INQUIRY

After some two centuries of experience with rationalistic inquiry, several criteria of importance have been identified for judging the trustworthiness of its finding. It is not unreasonable to ask whether naturalistic inquiry can also meet those criteria; or, in the event that the criteria are deemed inappropriate, meet some new criteria that are more appropriate and of approximately equal power in differentiating good from bad, inadequate, or untrustworthy research. Such criteria have importance for designing, monitoring, and judging an inquiry, whether from the perspective of the inquirer, a monitor (for example, a sponsor, an administrator, or a dissertation committee), or an editor who might be asked to publish the results of such research.

Guba and Lincoln (1981) have summarized the four major traditional criteria into four questions, to which they suggest the naturalist has an equal obligation to attend:

1. **Truth Value**: How can one establish confidence in the truth of the findings of a particular inquiry for the respondents with which and the context in which the inquiry was carried out?
2. **Applicability**: How can one determine the degree to which the findings of a particular inquiry may have applicability in other contexts or with other respondents?
3. **Consistency**: How can one determine whether the findings of an inquiry would be consistently repeated if the inquiry were replicated with the same (or similar) respondents in the same (or a similar) context?
4. **Neutrality**: How can one establish the degree to which the findings of an inquiry are a function solely of the conditions of the inquiry and not of the biases, motivations, interests, or perspectives of the inquirer?

The terms typically utilized within the rationalistic paradigm in relation to the four questions are, respectively, internal validity, external validity, reliability, and objectivity. Guba (1981a) and Guba and Lincoln (1981) propose four analogous terms within the naturalistic paradigm to supplant these rationalistic terms: credibility, transferability, dependability, and confirmability, respectively.

The translation of the conventional terms into these four naturalistic terms requires some justification (Guba, 1981; Guba & Lincoln, 1981):

- **CREDIBILITY**. Internal validity is best demonstrated through an isomorphism between the data of an inquiry and the phenomena those data represent. While such isomorphism cannot be directly represented in either paradigm, the naturalist does have at least indirect access to the multiple realities he deals with; since they are constructions in the minds of people, he can ask those people whether he has represented their realities appropriately. Thus, the crucial question for the naturalist
becomes, “Do the data sources find the inquirer’s analysis, formulation, and interpretations to be credible (believable)?”

TRANSFERABILITY. In the rationalistic paradigm, generalizability (external validity) is demonstrated by showing that the data have been collected from a sample that is in some way representative of the population to which generalization is sought. The naturalist, while discounting generalizability, nevertheless believes that some degree of transferability is possible if enough “thick description” is available about both sending and receiving contexts to make a reasoned judgment possible.

DEPENDABILITY. In the rationalist paradigm, reliability is a matter of replicability; a study ought to be repeatable under the same circumstances in another place and time. If there are discrepancies or deviations between two repetitions of the same study, the difference is charged to unreliability (error). The naturalist cannot be so cavalier, however, because, first, designs are emergent so that changes are built in with conscious intent, and second, emergent design prevents an exact replication of a study in any event (since a second inquirer might choose a different path from the same data). The naturalist defines the concept of dependability to mean stability after discounting such conscious and unpredictable (but logical) changes.

CONFIRMABILITY. As Scriven (1971) has noted, the rationalistic concept of objectivity is based on a quantitative notion of inter-subjective agreement. But clearly, 50 million Frenchmen can be and have been wrong; what is important is not that there be quantitative agreement but qualitative confirmability. The onus of objectivity ought, therefore, to be removed from the inquirer and placed on the data; it is not inquirer certifiability in which we are interested, but in data confirmability.

It is premature to expect that naturalists would have evolved as sophisticated a methodology for dealing with trustworthiness as have rationalists, especially since the latter have had literally centuries to work on refinements. However, Guba (1981a) has attempted what he himself characterized as a primitive effort. His formulations will be summarized here. They are treated in greater detail elsewhere (Lincoln & Guba, 1985).

With respect to credibility, Guba suggests the following as means either to safeguard against loss of credibility or to continually test for it:

Prolonged engagement at a site: to overcome distortions introduced by the inquirers presence, to test for ethnocentrism (Lincoln & Guba, 1981), to test biases and perceptions of both inquirer and respondents, and to provide time to identify salient characteristics of both the context and the problem.

Persistent observation: to gain a high degree of acquaintance with and verstehen of pervasive qualities and salient characteristics, to come to appreciate atypical but critical characteristics, and to eliminate those which are irrelevant.

Peers debriefing: to keep the inquirer honest, to provide him or her with the opportunity to test his or her growing insights against those of uninvolved peers, to receive
IV. Social Agenda-Directed (Advocacy) Models

The dependability audit: modelled on the fiscal audit, but limited to that part of the auditor’s role which deals with process. In a fiscal audit, the first concern of an auditor is whether the accounts were kept in one of the several modes that constitute advice about important methodological steps in the emergent design, to leave an audit trail (see below), and to discharge personal feelings, anxieties, and stresses which might otherwise affect the inquiry adversely.

Triangulation: whereby a variety of data sources, different perspectives or theories, different methods, and even different investigators are pitted against one another in order to cross-check data and interpretation (Denzin, 1978).

Referential adequacy materials: that is, documents films, videotapes, audio recordings, pictures, and other raw or slice-of-life materials are collected during the study and archived without analysis; these materials can later be utilized by the inquirer or others, especially an auditor (see below), to test interpretations made from other analyzed data.

Member checks: whereby data and interpretations are continually checked with members of various groups from which data are solicited; done on a continuous basis throughout the study and again at the end when the full report is assembled, using the same members from whom the data were originally collected or other surrogates from the same groups, or both.

With respect to transferability, Guba has suggested that the inquirer engage in, or provide:

Theoretical/purposive sampling: that is, sampling intended to maximize the range of information which is collected and to provide most stringent conditions for theory grounding.

Thick description: by which is meant providing enough information about a context, first, to impart a vicarious experience of it and second, to facilitate judgments about the extent to which working hypotheses from that context might be transferable to a second and similar context.

With respect to dependability, Guba has suggested:

Use of overlap methods: one kind of triangulation process, which, while usually advocated in support of validity, also undergirds claims of reliability to the extent that they produce complementary results.

Stepwise replication: a kind of split-halves approach in which inquirers and data sources are split into two roughly equal halves to be investigated independently, provided, however, that there is frequent exchange between the two teams to allow for the common development and unfolding of an emergent design.

The dependability audit: modelled on the fiscal audit, but limited to that part of the auditor’s role which deals with process. In a fiscal audit, the first concern of an auditor is whether the accounts were kept in one of the several modes that constitute
acceptable professional practice; to reach that judgment the auditor must, of course, be supplied with an “audit trail,” which delineates all methodological steps and decision points and which provides access to all data in their several raw and processed stages.

With respect to confirmability, Guba has proffered:

**Triangulation:** as described above.

**Practicing reflexivity:** that is, attempting to uncover one’s underlying epistemological assumptions, reasons for formulating the study in a particular way, and heretofore implicit assumptions, biases or prejudices about the context or problem. The most appropriate means for this exploration and presentation takes the form of a reflexive journal, kept in the field.

**The confirmability audit:** a counterpart to the dependability audit, in which the auditor takes the additional step of verifying that each finding can be traced back through the several analysis steps to the original data and that interpretations of data clusters are reasonable and meaningful, in much the same way that a fiscal auditor would verify at least a sample of entries in a bookkeeping journal to be certain that each represented a real transaction and that the bottom line accurately represented the current fiscal situation (Lincoln & Guba, 1982).

The criteria posed, while not theoretically elegant formulations, do have utility at several stages of the inquiry process; they aid reviewers in making *a priori* judgments about the quality of proposed research; they aid the inquirer in monitoring himself or herself and in guiding activities in the field; and, finally, they may be used to render ex post facto judgments on the products of research, including reports, case studies, or proposed publications. The final reports ought at the very least to include—as do rationalistic paradigm reports—statements about what the inquirer actually did to satisfy each of the four sets of criteria, and reports from dependability and confirmability auditors (if used) concerning their verification of his or her processes and conclusions.

Carrying out even all of these steps (usually not logistically or fiscally possible in an actual inquiry) will not guarantee the trustworthiness of a naturalistic study, but will contribute greatly toward persuading a reader and consumer of the data’s meaningfulness.

**SUMMARY**

We have tried to argue here that we are in the midst of a paradigmatic revolution (Kuhn, 1970), centered about the growing concern that the paradigm which has typically been utilized for scientific (hard and life sciences) inquiry has served poorly when applied to the social and behavioral sciences. It is time for a new paradigm, which takes account of the nature of social experience. We believe that paradigm to be the naturalistic.
The naturalistic paradigm has emerged, in part, from intense scrutiny of the assumptions and epistemological axioms which undergird rationalistic inquiry. We have tried to make explicit the nature of the epistemological assumptions essential to the two paradigms and have addressed persistent criticism that the latter is soft, non-rigorous, and attentive to relevance over rigor.

While it is true that rationalistic inquirers do not accept the axioms we have imputed to them here without reservation, we have tried to deal with them in their purest form, as they can be traced through the philosophy of science and scientific writers. By doing so, we believe, the reader is able to see the sharpest of contrasts and to understand better why it is maintained that there can be no compromise on axiomatic assumptions (just as one cannot accept a compromise between Euclidean and Lobachevskian geometry), although there may be compromises on various postures that are typically ascribed to the two paradigms.

Thus, we have accounted for five major axiomatic differences: the nature of reality, the nature of the inquirer-object (or respondent) relationship, the nature of truth statements, assumptions about causal relationships, and the role of values within disciplined inquiry. Along those assumptions, we have argued, there can be no compromise. The inquirer must choose one set of assumptions (axioms) or another to undergird his inquiry. The choice is an empirical issue, determined by fit.

Along certain other dimensions, called postures, however, compromise may be possible, although we would argue that, like dominoes, one choice may impel the inquirer to make other choices which traditionally have characterized naturalistic inquiry.

Finally, we have argued that, while several centuries of rationalistic inquiry has allowed the development of rather strict and inviolable canons of rigor, the naturalistic school is only beginning to develop an arsenal of weapons against the charge of non-rigorous or untrustworthiness. We have demonstrated that it is possible to consider the questions of internal validity, external validity, reliability, and objectivity within the framework of naturalism, but argued for concepts which are more germane—credibility, transferability, dependability and confirmability. We proposed criteria by which external reviewers of naturalistic research might judge the trustworthiness of those studies. While these criteria do not provide unassailable defenses against charges of untrustworthiness, they nevertheless assure the consumer of such research that appropriate steps have been taken to produce data from human sources and contexts that are meaningful, trackable, verifiable, and grounded in the real-life situations from which they were derived.

The naturalistic paradigm seems to us to have much to recommend it. We urge that it be given a fair trial.

NOTES

1. In previous writing (Guba, 1978, 1981; Guba & Lincoln, 1981), we have referred to what we here call the rationalistic paradigm as the scientistic or the scientific paradigm. The use of even the less pejorative of these latter two terms now seems to us inappropriate on two counts. First, readers have tended to view the naturalistic paradigm as less scientific (or even as nonscientific), and have, therefore, denigrated it as less valid. Second, several critics have accused us of setting up a straw man, on the grounds
that vanguard scientific thinkers have moved beyond the nineteenth century logical positivism of which our descriptions are at times reminiscent. It is undoubtedly true that many scientists now think differently, but that change does not characterize, in our opinion, the large majority of scientists who engage in inquiries in either the hard or soft sciences. It is to that level of practice that our criticisms are directed, and it is of that moribund culture that our descriptions are apt. However, to avoid the unintended meanings that some readers have drawn from our work, we have shifted to the term *rationalistic* to describe the paradigm that guides so much conventional inquiry.

2. An appreciation of the constraints which this limitation places on the subsequent discussion is crucial to an understanding of the points we will make. We are not dealing with tangible objects, events, or processes as would the physicist, chemist, or biologist. Nor do we mean to include those aspects of human studies that can be labeled as genetically or developmentally mediated. Study of such matters is undoubtedly better guided by the rationalistic paradigm than by the naturalistic. We are dealing, however, with the large majority of studies undertaken by psychologists, sociologists, anthropologists, educational researchers, and evaluators—including evaluations of other social-process fields such as social work, law enforcement, or health services delivery.

3. We find the use of the term *object* of inquiry, when applied to a human, pejorative; we prefer the term *respondent*, which carries the connotations of interaction and equality.


5. It is ironic that the naturalist does permit the data to “speak for themselves” in the sense of grounding theory in them, a use never contemplated by the rationalists who are fond of using that phrase as an assertion of their objectivity.

6. The distinction made here is similar to that between a connoisseur and a critic of art. The connoisseur need only “feel” a painting to appreciate it; the critic must cast his feelings into language in order to convey his critique. Connoisseurship is a private art, but criticism is a public art (Eisner, 1979).