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K. Denzin & Oaks, CA: Sage. on: Critical race

theory and qualitative studies in education. *Qualitative Studies in Education*, 11, 5–6. Shavelson, R., & Towne, L. (Eds.). (2003). *Scientific research in education*. Washington, DC: National Academies Press.

PARADIGMATIC CONTROVERSIES, CONTRADICTIONS, AND EMERGING CONFLUENCES

Egon G. Guba and Yvonna S. Lincoln

n our chapter for the first edition of the Handbook of Qualitative Research, we focused on the contention among various research paradigms for legitimacy and intellectual and paradigmatic hegemony (Guba & Lincoln, 1994). The postmodern paradigms that we discussed (postmodernist critical theory and constructivism)¹ were in contention with the received positivist and postpositivist paradigms for legitimacy, and with one another for intellectual legitimacy. In the more than 10 years that have elapsed since that chapter was published, substantial changes have occurred in the landscape of social scientific inquiry.

On the matter of legitimacy, we observe that readers familiar with the literature on methods and paradigms reflect a high interest in ontologies and epistemologies that differ sharply from those undergirding conventional social science. Second, even those established professionals trained in quantitative social science (including the two of us) want to learn more about qualitative approaches, because new young professionals being mentored in graduate schools are asking serious questions about and looking for guidance in qualitatively

oriented studies and dissertations. Third, the number of qualitative texts, research papers, workshops, and training materials has exploded. Indeed, it would be difficult to miss the distinct turn of the social sciences toward more interpretive, postmodern, and criticalist practices and theorizing (Bloland, 1989, 1995). This nonpositivist orientation has created a context (surround) in which virtually no study can go unchallenged by proponents of contending paradigms. Further, it is obvious that the number of practitioners of newparadigm inquiry is growing daily. There can be no question that the legitimacy of postmodern paradigms is well established and at least equal to the legitimacy of received and conventional paradigms (Denzin & Lincoln, 1994).

On the matter of hegemony, or supremacy, among postmodern paradigms, it is clear that Geertz's (1988, 1993) prophecy about the "blurring of genres" is rapidly being fulfilled. Inquiry methodology can no longer be treated as a set of universally applicable rules or abstractions. Methodology is inevitably interwoven with and emerges from the nature of particular disciplines

(such as sociology and psychology) and particular perspectives (such as Marxism, feminist theory, and queer theory). So, for instance, we can read feminist critical theorists such as Olesen (2000) or queer theorists such as Gamson (2000), or we can follow arguments about teachers as researchers (Kincheloe, 1991) while we understand the secondary text to be teacher empowerment and democratization of schooling practices. Indeed, the various paradigms are beginning to "interbreed" such that two theorists previously thought to be in irreconcilable conflict may now appear, under a different theoretical rubric, to be informing one another's arguments. A personal example is our own work, which has been heavily influenced by action research practitioners and postmodern critical theorists. Consequently, to argue that it is paradigms that are in contention is probably less useful than to probe where and how paradigms exhibit confluence and where and how they exhibit differences, controversies, and contradictions.

Major Issues Confronting All Paradigms

In our chapter in the first edition of this Handbook, we presented two tables that summarized our positions, first, on the axiomatic nature of paradigms (the paradigms we considered at that time were positivism, postpositivism, critical theory, and constructivism; Guba & Lincoln, 1994, p. 109, Table 6.1); and second, on the issues we believed were most fundamental to differentiating the four paradigms (p. 112, Table 6.2). These tables are reproduced here as a way of reminding our readers of our previous statements. The axioms defined the ontological, epistemological, and methodological bases for both established and emergent paradigms; these are shown here in Table 8.1. The issues most often in contention that we examined were inquiry aim, nature of knowledge, the way knowledge is accumulated, goodness (rigor and validity) or quality criteria, values, ethics, voice, training, accommodation, and hegemony; these are shown in Table 8.2. An

examination of these two tables will reacquaint the reader with our original *Handbook* treatment; more detailed information is, of course, available in our original chapter.

Since publication of that chapter, at least one set of authors, John Heron and Peter Reason, have elaborated on our tables to include the *participatory/cooperative* paradigm (Heron, 1996; Heron & Reason, 1997, pp. 289–290). Thus, in addition to the paradigms of positivism, postpositivism, critical theory, and constructivism, we add the participatory paradigm in the present chapter (this is an excellent example, we might add, of the hermeneutic elaboration so embedded in our own view, constructivism).

Our aim here is to extend the analysis further by building on Heron and Reason's additions and by rearranging the issues to reflect current thought. The issues we have chosen include our original formulations and the additions, revisions, and amplifications made by Heron and Reason (1997), and we have also chosen what we believe to be the issues most important today. We should note that important means several things to us. An important topic may be one that is widely debated (or even hotly contested)—validity is one such issue. An important issue may be one that bespeaks a new awareness (an issue such as recognition of the role of values). An important issue may be one that illustrates the influence of one paradigm on another (such as the influence of feminist, action research, critical theory, and participatory models on researcher conceptions of action within and with the community in which research is carried out). Or issues may be important because new or extended theoretical and/or field-oriented treatments for them are newly available-voice and reflexivity are two such issues.

Table 8.3 reprises the original Table 6.1 but adds the axioms of the participatory paradigm proposed by Heron and Reason (1997). Table 8.4 deals with seven issues and represents an update of selected issues first presented in the old Table 6.2. "Voice" in the 1994 version of Table 6.2 has been renamed "inquirer posture," and we have inserted a redefined "voice" in the current

Basic Beliefs (Metaphysics) of Alternative Inquiry Paradigms

Table 8.1.

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Item	Positivism	Postpositivism	Critical Theory et al.	Constructivism
Ontology	Naïve realism—"real" reality but apprehendible	Critical realism—"real" reality but only imperfectly and probabilistically apprehendible	Historical realism—virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time	Relativism—local and specific constructed and co-constructed realities
Epistemology	Dualist/objectivist; findings true	Modified dualist/objectivist; critical tradition/community; findings probably true	Transactional/subjectivist; valuemediated findings	Transactional/subjectivist; created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectical	Hermeneutical/dialectical

More informed and sophisticated reconstructions; Trustworthiness and authenticity, including catalyst Intrinsic: process tilt toward revelation; special problems Resocialization; qualitative and quantitative; history; values of altruism, empowerment, and liberation reconstructions coalescing "Passionate participant" as facilitator of multivoice Individual or collective Included-formative vicarious experience Seeking recognition and input; offering challenges to predecessor paradigms, aligned with postcolonial aspirations around consensus **Understanding**; Constructivism reconstruction for action Historical revisionism; generalization by similarity Intrinsic: moral tilt toward revelation Incommensurable with previous two Historical situatedness; erosion of ignorance and misapprehension; action stimulus as Critique and transformation; restitution and emancipation Structural/historical insights "Transformative intellectual" Included-formative advocate and activist Accretion—"building blocks" adding to "edifice of knowledge"; generalizations and cause-effect linkages "Disinterested scientist" as informer of decision makers, policy makers, and change agents Technical; quantitative and qualitative; substantive theories Conventional benchmarks of "rigor": internal and external validity, reliability, and objectivity Nonfalsified hypotheses that are probable facts or laws In control of publication, funding, promotion, and tenure Postpositivism Explanation: prediction and control Extrinsic: tilt toward deception Excluded—influence denied Verified hypotheses established as facts or laws substantive theories Commensurable Technical and quantitative; Positivism Accommodation quality criteria accumulation Goodness or Inquiry aim Knowledge Nature of knowledge Hegemony Training Values Ethics Voice Item

 Table 8.3.
 Basic Beliefs of Alternative Inquiry Paradigms—Updated

Issue	Positivism	Postpositivism	Critical Theory et al.	Constructivism	Participatorya
Ontology	Naïve realism— "real" reality but apprehendible	Critical realism—"real" reality but only imperfectly and probabilistically apprehendible	Historical realism—virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time	Relativism— local and specific co-constructed realities	Participative reality—subjective-objective reality, cocreated by mind and given cosmos
Epistemology	Dualist/objectivist; findings true	Modified dualist/objectivist; critical tradition/community; findings probably true	Transactional/ subjectivist; value- mediated findings	Transactional/ subjectivist; co-created findings	Critical subjectivity in participatory transaction with cosmos; extended epistemology of experiential, propositional, and practical knowing; cocreated findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectical	Hermeneutical/ dialectical	Political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context

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Table 8.4.

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Issue	Positivism	Postpositivism	Critical Ineories	Constructivism	Farincipatory
Nature of knowledge	Verified hypotheses established as facts or laws	Nonfalsified hypotheses that are probable facts or laws	Structural/historical insights	Individual and collective reconstructions sometimes coalescing around consensus	Extended epistemology: primacy of practical knowing; critical subjectivity; living knowledge
Knowledge accumulation	Accretion—"building blocks" adding to "edifice of knowledge"; generalizations and cause-effect linkages	g blocks" adding to e"; generalizations :ages	Historical revisionism; generalization by similarity	More informed and sophisticated reconstructions, vicarious experience	In communities of inquiry embedded in communities of practice
Goodness or quality criteria	Conventional benchmarks of "rigor": internal and external validity, reliability, and objectivity	narks of "rigor": I validity, reliability,	Historical situatedness; erosion of ignorance and misapprehensions; action stimulus	Trustworthiness and authenticity including catalyst for action	Congruence of experiential, presentational, propositional, and practical knowing; leads to action to transform the world in the service of human flourishing
Values	Excluded—influence denied	e denied	Included—formative		
Ethics	Extrinsic—tilt toward deception	rd deception	Intrinsic—moral tilt toward revelation	Intrinsicprocess tilt toward revelation	revelation
Inquirer posture	"Disinterested scientist" as informer of decision makers, policy makers, and change agents	ist" as informer of icy makers, and	"Transformative intellectual" as advocate and activist	"Passionate participant" as facilitator of multivoice reconstruction	Primary voice manifest through aware self-reflective action; secondary voices in illuminating theory, narrative, movement, song, dance, and other presentational forms
Training	Technical and quantitative; substantive theories	Technical; quantitative and qualitative; substantive theories	Resocialization; qualitative and quantitative; hist values of altruism, empowerment and liberation	Resocialization; qualitative and quantitative; history; values of altruism, empowerment and liberation	Coresearchers are initiated into the inquiry process by facilitator/researcher and learn through active engagement in the process; facilitator/researcher requires emotional competence, democratic personality and skills

a. Entries in this column are based on Heron and Reason (1997), except for "ethics" and "values."

Table 8.5. In all cases except "inquirer posture," the entries for the participatory paradigm are those proposed by Heron and Reason; in the one case not covered by them, we have added a notation that we believe captures their intention.

We make no attempt here to reprise the material well discussed in our earlier Handbook chapter. Instead, we focus solely on the issues in Table 8.5: axiology; accommodation and commensurability; action; control; foundations of truth and knowledge; validity; and voice, reflexivity, and postmodern textual representation. We believe these seven issues to be the most important at this time.

While we believe these issues to be the most contentious, we also believe they create the intellectual, theoretical, and practical space for dialogue, consensus, and confluence to occur. There is great potential for interweaving of viewpoints, for the incorporation of multiple perspectives, and for borrowing, or bricolage, where borrowing seems useful, richness enhancing, or theoretically heuristic. For instance, even though we are ourselves social constructivists/constructionists, our call to action embedded in the authenticity criteria we elaborated in Fourth Generation Evaluation (Guba & Lincoln, 1989) reflects strongly the bent to action embodied in critical theorists' perspectives. And although Heron and Reason have elaborated a model they call the cooperative paradigm, careful reading of their proposal reveals a form of inquiry that is post-postpositive, postmodern, and criticalist in orientation. As a result, the reader familiar with several theoretical and paradigmatic strands of research will find that echoes of many streams of thought come together in the extended table. What this means is that the categories, as Laurel Richardson (personal communication, September 12, 1998) has pointed out, "are fluid, indeed what should be a category keeps altering, enlarging." She notes that "even as [we] write, the boundaries between the paradigms are shifting." This is the paradigmatic equivalent of the Geertzian "blurring of genres" to which we referred earlier.

Our own position is that of the constructionist camp, loosely defined. We do not believe that criteria for judging either "reality" or validity are

absolutist (Bradley & Schaefer, 1998); rather, they are derived from community consensus regarding what is "real," what is useful, and what has meaning (especially meaning for action and further steps). We believe that a goodly portion of social phenomena consists of the meaning-making activities of groups and individuals around those phenomena. The meaning-making activities themselves are of central interest to social constructionists/constructivists, simply because it is the meaning-making/sense-making/attributional activities that shape action (or inaction). The meaning-making activities themselves can be changed when they are found to be incomplete, faulty (e.g., discriminatory, oppressive, or nonliberatory), or malformed (created from data that can be shown to be false).

We have tried, however, to incorporate perspectives from other major nonpositivist paradigms. This is not a complete summation; space constraints prevent that. What we hope to do in this chapter is to acquaint readers with the larger currents, arguments, dialogues, and provocative writings and theorizing, the better to see perhaps what we ourselves do not even yet see: where and when confluence is possible, where constructive rapprochement might be negotiated, where voices are beginning to achieve some harmony.

AXIOLOGY

Earlier, we placed values on the table as an "issue" on which positivists or phenomenologists might have a "posture" (Guba & Lincoln, 1989, 1994; Lincoln & Guba, 1985). Fortunately, we reserved for ourselves the right to either get smarter or just change our minds. We did both. Now, we suspect (although Table 8.5 does not yet reflect it) that "axiology" should be grouped with "basic beliefs." In Naturalistic Inquiry (Lincoln & Guba, 1985), we covered some of the ways in which values feed into the inquiry process: choice of the problem, choice of paradigm to guide the problem, choice of theoretical framework, choice of major datagathering and data-analytic methods, choice of context, treatment of values already resident

 Table 8.5.
 Critical Issues of the Time

Axiology Propositional knowing about the world is Propositional, transactional knowing about the world is a read in itself, is intrinsically valuable. Accommodation Commensurable for all positivist commensurable for all positivist forms Action Not the responsibility of the researcher; Action of participators of participators; constructions; formulation mandates training in political action if participants do not understand political systems and participators of the resides in transformation, participants Action A						
Propositional knowing about the world is an end in itself, is intrinsically valuable. odation Commensurable for all positivist forms Not the responsibility of the researcher; viewed as "advocacy" or subjectivity, and therefore a threat to validity and objectivity in the searcher Resides solely in researcher Bip to Foundational Foundational Foundational	Issue	Positivism	Postpositivism	Critical Theory et al.	Constructivism	Participatory
dation Commensurable for all positivist urability forms Not the responsibility of the researcher; viewed as "advocacy" or subjectivity, and therefore a threat to validity and objectivity Resides solely in researcher ip to Foundational Foundational so of Foundational Foundational	Axiology	Propositional know an end in itself, is ir	ing about the world is itrinsically valuable.	Propositional, transaction valuable as a means to sc an end in itself, is intrins	nal knowing is instrumentally ocial emancipation, which is ically valuable.	Practical knowing about how to flourish with a balance of autonomy, cooperation, and hierarchy in a culture is an end in itself, is intrinsically valuable.
Not the responsibility of the researcher; viewed as "advocacy" or subjectivity, and therefore a threat to validity and objectivity Resides solely in researcher ip to Foundational Foundational e	Accommodation and commensurability	Commensurable for all positivist forms		Incommensurable with prarticipatory approaches	oositivist forms; some commens s, especially as they merge in libe	urability with constructivist, criticalist, and crationist approaches outside the West
Resides solely in researcher Resides solely in researcher Resides solely in researcher Often resides in "transformation of the resides in "transformative intellectual"; in new constructions, control returns to community returns to community social critique e	Action	Not the responsibili viewed as "advocac therefore a threat to	ity of the researcher; y" or subjectivity, and validity and objectivity	Found especially in the form of empowerment; emancipation anticipated and hoped for; social	Intertwined with validity; inqu the part of participants; constr political action if participants o	iry often incomplete without action on uctivist formulation mandates training in do not understand political systems
Resides solely in researcher Often resides in "transformative intellectual"; in new constructions, control returns to community in sof social critique social critique e				transformation, particularly toward more equity and justice, is end goal		
tip to Foundational Foundational Foundational within Antifoundational ns of social critique e	Control	Resides solely in res	searcher	Often resides in "transformative intellectual"; in new constructions, control returns to community	Shared between inquirer and participants	Shared to varying degrees
	Relationship to foundations of truth and knowledge	Foundational	Foundational	Foundational within social critique	Antifoundational	Nonfoundational

Participatory	See "action" above	Voices mixed; textual representation rarely discussed but problematic; reflexivity relies on critical subjectivity and self-awareness	fiction formulas" or unexamined
Constructivism	Extended constructions of validity: (a) crystalline validity (Richardson); (b) authenticity criteria (Guba & Lincoln); (c) catalytic, rhizomatic, voluptuous validities (Lather); (d) relational and ethics-centered criteria (Lincoln); (e) community-centered determinations of validity	Voices mixed, with participants' voices sometimes dominant; reflexivity serious and problematic; textual representation an extended issue	Textual representation practices may be problematic—i.e., "fiction formulas" or unexamined "regimes of truth"
Critical Theory et al.	Action stimulus (see above); social transformation, equity, social justice	Voices mixed between researcher and participants	Textual representation pra "regimes of truth"
Positivism Postpositivism	Traditional positivist constructions of validity; rigor, internal validity, external validity, objectivity	Voice of the researcher, principally; reflexivity may be considered a problem in objectivity; textual representation unproblematic and somewhat formulaic	
Issue	Extended considerations of validity (goodness criteria)	Voice, reflexivity, postmodern textual representations	

within the context, and choice of format(s) for presenting findings. We believed those were strong enough reasons to argue for the inclusion of values as a major point of departure between positivist, conventional modes of inquiry and interpretive forms of inquiry.

A second "reading" of the burgeoning literature and subsequent rethinking of our own rationale have led us to conclude that the issue is much larger than we first conceived. If we had it to do all over again, we would make values or, more correctly, axiology (the branch of philosophy dealing with ethics, aesthetics, and religion) a part of the basic foundational philosophical dimensions of paradigm proposal. Doing so would, in our opinion, begin to help us see the embeddedness of ethics within, not external to, paradigms (see, for instance, Christians, 2000) and would contribute to the consideration of and dialogue about the role of spirituality in human inquiry. Arguably, axiology has been "defined out of" scientific inquiry for no larger a reason than that it also concerns "religion." But defining "religion" broadly to encompass spirituality would move constructivists closer to participative inquirers and would move critical theorists closer to both (owing to their concern with liberation from oppression and freeing of the human spirit, both profoundly spiritual concerns). The expansion of basic issues to include axiology, then, is one way of achieving greater confluence among the various interpretivist inquiry models. This is the place, for example, where Peter Reason's profound concerns with "sacred science" and human functioning find legitimacy; it is a place where Laurel Richardson's "sacred spaces" become authoritative sites for human inquiry; it is a place—or the place—where the spiritual meets social inquiry, as Reason (1993), and later Lincoln and Denzin (1994), proposed some years earlier.

ACCOMMODATION AND COMMENSURABILITY

Positivists and postpositivists alike still occasionally argue that paradigms are, in some ways, commensurable; that is, they can be retrofitted to

each other in ways that make the simultaneous practice of both possible. We have argued that at the paradigmatic, or philosophical, level, commensurability between positivist and postpositivist worldviews is not possible, but that within each paradigm, mixed methodologies (strategies) may make perfectly good sense (Guba & Lincoln, 1981, 1982, 1989, 1994; Lincoln & Guba, 1985). So, for instance, in Effective Evaluation we argued:

The guiding inquiry paradigm most appropriate to responsive evaluation is . . . the naturalistic, phenomenological, or ethnographic paradigm. It will be seen that qualitative techniques are typically most appropriate to support this approach. There are times, however, when the issues and concerns voiced by audiences require information that is best generated by more conventional methods, especially quantitative methods.... In such cases, the responsive conventional evaluator will not shrink from the appropriate application. (Guba & Lincoln, 1981, p. 36)

As we tried to make clear, the "argument" arising in the social sciences was not about method, although many critics of the new naturalistic, ethnographic, phenomenological, and/or case study approaches assumed it was.² As late as 1998, Weiss could be found to claim that "some evaluation theorists, notably Guba and Lincoln (1989), hold that it is impossible to combine qualitative and quantitative approaches responsibly within an evaluation" (p. 268), even though we stated early on in Fourth Generation Evaluation (1989) that

those claims, concerns, and issues that have not been resolved become the advance organizers for information collection by the evaluator. . . . The information may be quantitative or qualitative. Responsive evaluation does not rule out quantitative modes, as is mistakenly believed by many, but deals with whatever information is responsive to the unresolved claim, concern, or issue. (p. 43)

We had also strongly asserted earlier, in Naturalistic Inquiry (1985), that

qualitative methods are stressed within the naturalistic paradigm not because the paradigm is antiquantitative but because qualitative methods come more easily to the human-as-instrument. The reader should particularly note the absence of an antiquantitative stance, precisely because the naturalistic and conventional paradigms are so often mistakenly-equated with the qualitative and quantitative paradigms, respectively. Indeed, there are many opportunities for the naturalistic investigator to utilize quantitative data—probably more than are appreciated. (pp. 198–199; emphasis added)

Having demonstrated that we were not then (and are not now) talking about an antiquantitative posture or the exclusivity of methods, but rather about the philosophies of which paradigms are constructed, we can ask the question again regarding commensurability: Are paradigms commensurable? Is it possible to blend elements of one paradigm into another, so that one is engaging in research that represents the best of both worldviews? The answer, from our perspective, has to be a cautious yes. This is especially so if the models (paradigms) share axiomatic elements that are similar, or that resonate strongly between them. So, for instance, positivism and postpositivism are clearly commensurable. In the same vein, elements of interpretivist/postmodern critical theory, constructivist and participative inquiry, fit comfortably together. Commensurability is an issue only when researchers want to "pick and choose" among the axioms of positivist and interpretivist models, because the axioms are contradictory and mutually exclusive.

THE CALL TO ACTION

One of the clearest ways in which the paradigmatic controversies can be demonstrated is to compare the positivist and postpositivist adherents, who view action as a form of contamination of research results and processes, and the interpretivists, who see action on research results as a meaningful and important outcome of inquiry processes. Positivist adherents believe action to be either a form of advocacy or a form of subjectivity, either or both of which undermine the aim of objectivity. Critical theorists, on the other hand, have always advocated varying degrees of social action, from the overturning of specific unjust practices to radical transformation of entire societies. The call for action—whether in terms of internal transformation, such as ridding oneself of false consciousness, or of external social transformation—differentiates between positivist and postmodern criticalist theorists (including feminist and queer theorists). The sharpest shift, however, has been in the constructivist and participatory phenomenological models, where a step beyond interpretation and Verstehen, or understanding, toward social action is probably one of the most conceptually interesting of the shifts (Lincoln, 1997, 1998a, 1998b). For some theorists, the shift toward action came in response to widespread nonutilization of evaluation findings and the desire to create forms of evaluation that would attract champions who might follow through on recommendations with meaningful action plans (Guba & Lincoln, 1981, 1989). For others, embracing action came as both a political and an ethical commitment (see, for instance, Carr & Kemmis, 1986; Christians, 2000; Greenwood & Levin, 2000; Schratz & Walker, 1995; Tierney, 2000).

Whatever the source of the problem to which inquirers were responding, the shift toward connecting research, policy analysis, evaluation, and/or social deconstruction (e.g., deconstruction of the patriarchal forms of oppression in social structures, which is the project informing much feminist theorizing, or deconstruction of the homophobia embedded in public policies) with action has come to characterize much new-paradigm inquiry work, both at the theoretical and at the practice and praxis-oriented levels. Action has become a major controversy that limns the ongoing debates among practitioners of the various paradigms. The mandate for social action, especially action designed and created by and for research participants with the aid and cooperation of researchers, can be most sharply delineated between positivist/postpositivist and new-paradigm inquirers. Many positivist and postpositivist inquirers still consider "action" the domain of communities other than researchers and research participants: those of policy personnel, legislators, and civic and political officials. Hard-line foundationalists presume that the taint of action will interfere with, or even negate, the objectivity that is a (presumed) characteristic of rigorous scientific method inquiry.

CONTROL

Another controversy that has tended to become problematic centers on control of the study: Who initiates? Who determines salient questions? Who determines what constitutes findings? Who determines how data will be collected? Who determines in what forms the findings will be made public, if at all? Who determines what representations will be made of participants in the research? Let us be very clear: The issue of control is deeply embedded in the questions of voice, reflexivity, and issues of postmodern textual representation, which we shall take up later, but only for new-paradigm inquirers. For more conventional inquirers, the issue of control is effectively walled off from voice, reflexivity, and issues of textual representation, because each of those issues in some way threatens claims to rigor (particularly objectivity and validity). For new-paradigm inquirers who have seen the preeminent paradigm issues of ontology and epistemology effectively folded into one another, and who have watched as methodology and axiology logically folded into one another (Lincoln, 1995, 1997), control of an inquiry seems far less problematic, except insofar as inquirers seek to obtain participants' genuine participation (see, for instance, Guba & Lincoln, 1981, on contracting and attempts to get some stakeholding groups to do more than stand by while an evaluation is in progress).

Critical theorists, especially those who work in community organizing programs, are painfully aware of the necessity for members of the community, or research participants, to take control of their futures. Constructivists desire participants to take an increasingly active role in nominating questions of interest for any inquiry and in designing outlets for findings to be shared more widely within and outside the community. Participatory inquirers understand action controlled by the local

context members to be the aim of inquiry within a community. For none of these paradigmatic adherents is control an issue of advocacy, a somewhat deceptive term usually used as a code within a larger metanarrative to attack an inquiry's rigor, objectivity, or fairness. Rather, for new-paradigm researchers control is a means of fostering emancipation, democracy, and community empowerment, and of redressing power imbalances such that those who were previously marginalized now achieve voice (Mertens, 1998) or "human flourishing" (Heron & Reason, 1997). Control as a controversy is an excellent place to observe the phenomenon that we have always termed "Catholic questions directed to a Methodist audience." We use this description—given to us by a workshop participant in the early 1980s—to refer to the ongoing problem of illegitimate questions: questions that have no meaning because the frames of reference are those for which they were never intended. (We could as well call these "Hindu questions to a Muslim," to give another sense of how paradigms, or overarching philosophies—or theologies—are incommensurable, and how questions in one framework make little, if any, sense in another.) Paradigmatic formulations interact such that control becomes inextricably intertwined with mandates for objectivity. Objectivity derives from the Enlightenment prescription for knowledge of the physical world, which is postulated to be separate and distinct from those who would know (Polkinghorne, 1989). But if knowledge of the social (as opposed to the physical) world resides in meaning-making mechanisms of the social, mental, and linguistic worlds that individuals inhabit, then knowledge cannot be separate from the knower, but rather is rooted in his or her mental or linguistic designations of that world (Polkinghorne, 1989; Salner, 1989).

FOUNDATIONS OF TRUTH AND Knowledge in Paradigms

Whether or not the world has a "real" existence outside of human experience of that world is an open question. For modernist (i.e., Enlightenment,

scientific method, conventional, positivist) researchers, most assuredly there is a "real" reality "out there," apart from the flawed human apprehension of it. Further, that reality can be approached (approximated) only through the utilization of methods that prevent human contamination of its apprehension or comprehension. For foundationalists in the empiricist tradition, the foundations of scientific truth and knowledge about reality reside in rigorous application of testing phenomena against a template as much devoid of human bias, misperception, and other "idols" (Francis Bacon, cited in Polkinghorne, 1989) as instrumentally possible. As Polkinghorne (1989) makes

The idea that the objective realm is independent of the knower's subjective experiences of it can be found in Descartes's dual substance theory, with its distinction between the objective and subjective realms.... In the splitting of reality into subject and object realms, what can be known "objectively" is only the objective realm. True knowledge is limited to the objects and the relationships between them that exist in the realm of time and space. Human consciousness, which is subjective, is not accessible to science, and thus not truly knowable. (p.23)

Now, templates of truth and knowledge can be defined in a variety of ways—as the end product of rational processes, as the result of experiential sensing, as the result of empirical observation, and others. In all cases, however, the referent is the physical or empirical world: rational engagement with it, experience of it, empirical observation of it. Realists, who work on the assumption that there is a "real" world "out there," may in individual cases also be foundationalists, taking the view that all of these ways of defining are rooted in phenomena existing outside the human mind. Although we can think about them, experience them, or observe them, they are nevertheless transcendent, referred to but beyond direct apprehension. Realism is an ontological question, whereas foundationalism is a criterial question. Some foundationalists argue that real phenomena necessarily imply certain final, ultimate criteria

for testing them as truthful (although we may have great difficulty in determining what those criteria are); nonfoundationalists tend to argue that there are no such ultimate criteria, only those that we can agree upon at a certain time and under certain conditions. Foundational criteria are discovered; nonfoundational criteria are negotiated. It is the case, however, that most realists are also foundationalists, and many nonfoundationalists or antifoundationalists are relativists.

An ontological formulation that connects realism and foundationalism within the same "collapse" of categories that characterizes the ontological-epistemological collapse is one that exhibits good fit with the other assumptions of constructivism. That state of affairs suits newparadigm inquirers well. Critical theorists, constructivists, and participatory/cooperative inquirers take their primary field of interest to be precisely that subjective and intersubjective social knowledge and the active construction and cocreation of such knowledge by human agents that is produced by human consciousness. Further, newparadigm inquirers take to the social knowledge field with zest, informed by a variety of social, intellectual, and theoretical explorations. These theoretical excursions include Saussurian linguistic theory, which views all relationships between words and what those words signify as the function of an internal relationship within some linguistic system; literary theory's deconstructive contributions, which seek to disconnect texts from any essentialist or transcendental meaning and resituate them within both author and reader historical and social contexts (Hutcheon, 1989; Leitch, 1996); feminist (Addelson, 1993; Alpern, Antler, Perry, & Scobie, 1992; Babbitt, 1993; Harding, 1993), race and ethnic (Kondo, 1990, 1997; Trinh, 1991), and queer theorizing (Gamson, 2000), which seeks to uncover and explore varieties of oppression and historical colonizing between dominant and subaltern genders, identities, races, and social worlds; the postmodern historical moment (Michael, 1996), which problematizes truth as partial, identity as fluid, language as an unclear referent system, and method and criteria as potentially coercive (Ellis & Bochner, 1996); and

criticalist theories of social change (Carspecken, 1996; Schratz & Walker, 1995). The realization of the richness of the mental, social, psychological, and linguistic worlds that individuals and social groups create and constantly re-create and cocreate gives rise, in the minds of new-paradigm postmodern and poststructural inquirers, to endlessly fertile fields of inquiry rigidly walled off from conventional inquirers. Unfettered from the pursuit of transcendental scientific truth, inquirers are now free to resituate themselves within texts, to reconstruct their relationships with research participants in less constricted fashions, and to create re-presentations (Tierney & Lincoln, 1997) that grapple openly with problems of inscription, reinscription, metanarratives, and other rhetorical devices that obscure the extent to which human action is locally and temporally shaped. The processes of uncovering forms of inscription and the rhetoric of metanarratives are genealogical—"expos[ing] the origins of the view that have become sedimented and accepted as truths" (Polkinghorne, 1989, p. 42; emphasis added)—or archaeological (Foucault, 1971; Scheurich, 1997).

New-paradigm inquirers engage the foundational controversy in quite different ways. Critical theorists, particularly critical theorists more positivist in orientation, who lean toward Marxian interpretations, tend toward foundational perspectives, with an important difference. Rather than locating foundational truth and knowledge in some external reality "out there," such critical theorists tend to locate the foundations of truth in specific historical, economic, racial, and social infrastructures of oppression, injustice, and marginalization. Knowers are not portrayed as separate from some objective reality, but may be cast as unaware actors in such historical realities ("false consciousness") or as aware of historical forms of oppression, but unable or unwilling, because of conflicts, to act on those historical forms to alter specific conditions in this historical moment ("divided consciousness"). Thus the "foundation" for critical theorists is a duality: social critique tied in turn to raised consciousness of the possibility of positive and liberating social

change. Social critique may exist apart from social change, but both are necessary for criticalist perspectives.

Constructivists, on the other hand, tend toward the antifoundational (Lincoln, 1995, 1998b; Schwandt, 1996). Antifoundational is the term used to denote a refusal to adopt any permanent, unvarying (or "foundational") standards by which truth can be universally known. As one of us has argued, truth—and any agreement regarding what is valid knowledge—arises from the relationship between members of some stakeholding community (Lincoln, 1995). Agreements about truth may be the subject of community negotiations regarding what will be accepted as truth (although there are difficulties with that formulation as well; Guba & Lincoln, 1989). Or agreements may eventuate as the result of a dialogue that moves arguments about truth claims or validity past the warring camps of objectivity and relativity toward "a communal test of validity through the argumentation of the participants in a discourse" (Bernstein, 1983; Polkinghorne, 1989; Schwandt, 1996). This "communicative and pragmatic concept" of validity (Rorty, 1979) is never fixed or unvarying. Rather, it is created by means of a community narrative, itself subject to the temporal and historical conditions that gave rise to the community. Schwandt (1989) has also argued that these discourses, or community narratives, can and should be bounded by moral considerations, a premise grounded in the emancipatory narratives of the critical theorists, the philosophical pragmatism of Rorty, the democratic focus of constructivist inquiry, and the "human flourishing" goals of participatory and cooperative inquiry.

The controversies around foundationalism (and, to a lesser extent, essentialism) are not likely to be resolved through dialogue between paradigm adherents. The likelier event is that the "postmodern turn" (Best & Kellner, 1997), with its emphasis on the social construction of social reality, fluid as opposed to fixed identities of the self, and the partiality of all truths, will simply overtake modernist assumptions of an objective reality, as indeed, to some extent, it has already

done in the physical sciences. We might predict that, if not in our lifetimes, at some later time the dualist idea of an objective reality suborned by limited human subjective realities will seem as quaint as flat-earth theories do to us today.

■ Validity: An Extended Agenda

Nowhere can the conversation about paradigm differences be more fertile than in the extended controversy about validity (Howe & Eisenhart, 1990; Kvale, 1989, 1994; Ryan, Greene, Lincoln, Mathison, & Mertens, 1998; Scheurich, 1994, 1996). Validity is not like objectivity. There are fairly strong theoretical, philosophical, and pragmatic rationales for examining the concept of objectivity and finding it wanting. Even within positivist frameworks it is viewed as conceptually flawed. But validity is a more irritating construct, one neither easily dismissed nor readily configured by new-paradigm practitioners (Enerstvedt, 1989; Tschudi, 1989). Validity cannot be dismissed simply because it points to a question that has to be answered in one way or another: Are these findings sufficiently authentic (isomorphic to some reality, trustworthy, related to the way others construct their social worlds) that I may trust myself in acting on their implications? More to the point, would I feel sufficiently secure about these findings to construct social policy or legislation based on them? At the same time, radical reconfigurations of validity leave researchers with multiple, sometimes conflicting, mandates for what constitutes rigorous research.

One of the issues around validity is the conflation between method and interpretation. The postmodern turn suggests that no method can deliver on ultimate truth, and in fact "suspects all methods," the more so the larger their claims to delivering on truth (Richardson, 1994). Thus, although one might argue that some methods are more suited than others for conducting research on human construction of social realities (Lincoln & Guba, 1985), no one would argue that a single method—or collection of methods—is the royal road to ultimate knowledge. In new-paradigm

inquiry, however, it is not merely method that promises to deliver on some set of local or contextgrounded truths, it is also the processes of interpretation. Thus we have two arguments proceeding simultaneously. The first, borrowed from positivism, argues for a kind of rigor in the application of method, whereas the second argues for both a community consent and a form of rigor defensible reasoning, plausible alongside some other reality that is known to author and reader in ascribing salience to one interpretation over another and for framing and bounding an interpretive study itself. Prior to our understanding that there were, indeed, two forms of rigor, we assembled a set of methodological criteria, largely borrowed from an earlier generation of thoughtful anthropological and sociological methodological theorists. Those methodological criteria are still useful for a variety of reasons, not the least of which is that they ensure that such issues as prolonged engagement and persistent observation are attended to with some seriousness.

It is the second kind of rigor, however, that has received the most attention in recent writings: Are we *interpretively* rigorous? Can our cocreated constructions be trusted to provide some purchase on some important human phenomenon?

Human phenomena are themselves the subject of controversy. Classical social scientists would like to see "human phenomena" limited to those social experiences from which (scientific) generalizations may be drawn. New-paradigm inquirers, however, are increasingly concerned with the single experience, the individual crisis, the epiphany or moment of discovery, with that most powerful of all threats to conventional objectivity, feeling and emotion. Social scientists concerned with the expansion of what count as social data rely increasingly on the experiential, the embodied, the emotive qualities of human experience that contribute the narrative quality to a life. Sociologists such as Ellis and Bochner (2000) and Richardson (2000) and psychologists such as Michelle Fine (see Fine, Weis, Weseen, & Wong, 2000) concern themselves with various forms of autoethnography and personal experience methods, both to overcome the abstractions of a social science far gone with quantitative descriptions of human life and to capture those elements that make life conflictual, moving, problematic.

For purposes of this discussion, we believe the adoption of the most radical definitions of social science is appropriate, because the paradigmatic controversies are often taking place at the edges of those conversations. Those edges are where the border work is occurring, and, accordingly, they are the places that show the most promise for projecting where qualitative methods will be in the near and far future.

Whither and Whether Criteria

At those edges, several conversations are occurring around validity. The first-and most radical—is a conversation opened by Schwandt (1996), who suggests that we say "farewell to criteriology," or the "regulative norms for removing doubt and settling disputes about what is correct or incorrect, true or false" (p. 59), which have created a virtual cult around criteria. Schwandt does not, however, himself say farewell to criteria forever; rather, he resituates social inquiry, with other contemporary philosophical pragmatists, within a framework that transforms professional social inquiry into a form of practical philosophy, characterized by "aesthetic, prudential and moral considerations as well as more conventionally scientific ones" (p. 68). When social inquiry becomes the practice of a form of practical philosophy—a deep questioning about how we shall get on in the world and what we conceive to be the potentials and limits of human knowledge and functioning—then we have some preliminary understanding of what entirely different criteria might be for judging social inquiry.

Schwandt (1996) proposes three such criteria. First, he argues, we should search for a social inquiry that "generate[s] knowledge that complements or supplements rather than displac[ing] lay probing of social problems," a form of knowledge for which we do not yet have the *content*, but from which we might seek to understand the aims of practice from a variety of perspectives, or with different lenses. Second, he proposes a "social inquiry

as practical philosophy" that has as its aim "enhancing or cultivating *critical* intelligence in parties to the research encounter," critical intelligence being defined as "the capacity to engage in moral critique." And finally, he proposes a third way in which we might judge social inquiry as practical philosophy: We might make judgments about the social inquirer-as-practical-philosopher. He or she might be "evaluated on the success to which his or her reports of the inquiry enable the training or calibration of human judgment" (p. 69) or "the capacity for practical wisdom" (p. 70).

Schwandt is not alone, however, in wishing to say "farewell to criteriology," at least as it has been previously conceived. Scheurich (1997) makes a similar plea, and in the same vein, Smith (1993) also argues that validity, if it is to survive at all, must be radically reformulated if it is ever to serve phenomenological research well (see also Smith & Deemer, 2000).

At issue here is not whether we shall have criteria, or whose criteria we as a scientific community might adopt, but rather what the nature of social inquiry ought to be, whether it ought to undergo a transformation, and what might be the basis for criteria within a projected transformation. Schwandt (1989; also personal communication, August 21, 1998) is quite clear that both the transformation and the criteria are rooted in dialogic efforts. These dialogic efforts are quite clearly themselves forms of "moral discourse." Through the specific connections of the dialogic, the idea of practical wisdom, and moral discourses, much of Schwandt's work can be seen to be related to, and reflective of, critical theorist and participatory paradigms, as well as constructivism, although Schwandt specifically denies the relativity of truth. (For a more sophisticated explication and critique of forms of constructivism, hermeneutics, and interpretivism, see Schwandt, 2000. In that chapter, Schwandt spells out distinctions between realists and nonrealists, and between foundationalists and nonfoundationalists, far more clearly than it is possible for us to do in this chapter.)

To return to the central question embedded in validity: How do we know when we have specific

social inquiries that are faithful enough to some human construction that we may feel safe in acting on them, or, more important, that members of the community in which the research is conducted may act on them? To that question, there is no final answer. There are, however, several discussions of what we might use to make both professional and lay judgments regarding any piece of work. It is to those versions of validity that we now turn.

Validity as Authenticity

Perhaps the first nonfoundational criteria were those we developed in response to a challenge by John K. Smith (see Smith & Deemer, 2000). In those criteria, we attempted to locate criteria for judging the processes and outcomes of naturalistic or constructivist inquiries (rather than the application of methods; see Guba & Lincoln, 1989). We described five potential outcomes of a social constructionist inquiry (evaluation is one form of disciplined inquiry; see Guba & Lincoln, 1981), each grounded in concerns specific to the paradigm we had tried to describe and construct, and apart from any concerns carried over from the positivist legacy. The criteria were instead rooted in the axioms and assumptions of the constructivist paradigm, insofar as we could extrapolate and infer them.

Those authenticity criteria—so called because we believed them to be hallmarks of authentic, trustworthy, rigorous, or "valid" constructivist or phenomenological inquiry—were fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity (Guba & Lincoln, 1989, pp. 245-251). Fairness was thought to be a quality of balance; that is, all stakeholder views, perspectives, claims, concerns, and voices should be apparent in the text. Omission of stakeholder or participant voices reflects, we believe, a form of bias. This bias, however, was and is not related directly to the concerns of objectivity that flow from positivist inquiry and that are reflective of inquirer blindness or subjectivity. Rather, this fairness was defined by deliberate attempts to prevent marginalization, to act affirmatively with respect to inclusion, and to act with energy to ensure that all voices in the inquiry effort had a chance to be represented in any texts and to have their stories treated fairly and with balance.

Ontological and educative authenticity were designated as criteria for determining a raised level of awareness, in the first instance, by individual research participants and, in the second, by individuals about those who surround them or with whom they come into contact for some social or organizational purpose. Although we failed to see it at that particular historical moment (1989), there is no reason these criteria cannot be-at this point in time, with many miles under our theoretic and practice feet-reflective also of Schwandt's (1996) "critical intelligence," or capacity to engage in moral critique. In fact, the authenticity criteria we originally proposed had strong moral and ethical overtones, a point to which we later returned (see, for instance, Lincoln, 1995, 1998a, 1998b). It was a point to which our critics strongly objected before we were sufficiently selfaware to realize the implications of what we had proposed (see, for instance, Sechrest, 1993).

Catalytic and tactical authenticities refer to the ability of a given inquiry to prompt, first, action on the part of research participants and, second, the involvement of the researcher/evaluator in training participants in specific forms of social and political action if participants desire such training. It is here that constructivist inquiry practice begins to resemble forms of critical theorist action, action research, or participative or cooperative inquiry, each of which is predicated on creating the capacity in research participants for positive social change and forms of emancipatory community action. It is also at this specific point that practitioners of positivist and postpositivist social inquiry are the most critical, because any action on the part of the inquirer is thought to destabilize objectivity and introduce subjectivity, resulting in bias. The problem of subjectivity and bias has a long theoretical history, and this chapter is simply too brief for us to enter into the various formulations that either take account of subjectivity or posit it as a positive learning experience, practical, embodied, gendered, and emotive. For purposes of this discussion, it is enough to say that we are persuaded that objectivity is a chimera: a mythological creature that never existed, save in the imaginations of those who believe that knowing can be separated from the knower.

Validity as Resistance, Validity as Poststructural Transgression

Laurel Richardson (1994, 1997) has proposed another form of validity, a deliberately "transgressive" form, the crystalline. In writing experimental (i.e., nonauthoritative, nonpositivist) texts, particularly poems and plays, Richardson (1997) has sought to "problematize reliability, validity and truth" (p. 165) in an effort to create new relationships: to her research participants, to her work, to other women, to herself. She says that transgressive forms permit a social scientist to "conjure a different kind of social science . . . [which] means changing one's relationship to one's work, how one knows and tells about the sociological" (p. 166). In order to see "how transgression looks and how it feels," it is necessary to "find and deploy methods that allow us to uncover the hidden assumptions and life-denying repressions of sociology; resee/refeel sociology. Reseeing and retelling are inseparable" (p. 167).

The way to achieve such validity is by examining the properties of a crystal in a metaphoric sense. Here we present an extended quotation to give some flavor of how such validity might be described and deployed:

I propose that the central imaginary for "validity" for postmodernist texts is not the triangle—a rigid, fixed, two-dimensional object. Rather the central imaginary is the crystal, which combines symmetry and substance with an infinite variety of shapes, substances, transmutations, multidimensionalities, and angles of approach. Crystals grow, change, alter, but are not amorphous. Crystals are prisms that reflect externalities and refract within themselves, creating different colors, patterns, arrays, casting off in different directions. What we see depends upon our angle of repose. Not triangulation, crystallization. In postmodernist

mixed-genre texts, we have moved from plane geometry to light theory, where light can be *both* waves *and* particles. Crystallization, without losing structure, deconstructs the traditional idea of "validity" (we feel how there is no single truth, we see how texts validate themselves); and crystallization provides us with a deepened, complex, thoroughly partial understanding of the topic. Paradoxically, we know more and doubt what we know. (Richardson, 1997, p. 92)

The metaphoric "solid object" (crystal/text), which can be turned many ways, which reflects and refracts light (light/multiple layers of meaning), through which we can see both "wave" (light wave/human currents) and "particle" (light as "chunks" of energy/elements of truth, feeling, connection, processes of the research that "flow" together) is an attractive metaphor for validity. The properties of the crystal-as-metaphor help writers and readers alike see the interweaving of processes in the research: discovery, seeing, telling, storying, re-presentation.

Other "Transgressive" Validities

Laurel Richardson is not alone in calling for forms of validity that are "transgressive" and disruptive of the status quo. Patti Lather (1993) seeks "an incitement to discourse," the purpose of which is "to rupture validity as a regime of truth, to displace its historical inscription . . . via a dispersion, circulation and proliferation of counterpractices of authority that take the crisis of representation into account" (p. 674). In addition to catalytic validity (Lather, 1986), Lather (1993) poses validity as simulacra/ironic validity; Lyotardian paralogy/neopragmatic validity, a form of validity that "foster[s] heterogeneity, refusing disclosure" (p. 679); Derridean rigor/rhizomatic validity, a form of behaving "via relay, circuit, multiple openings" (p. 680); and voluptuous/situated validity, which "embodies a situated, partial tentativeness" and "brings ethics and epistemology together . . . via practices of engagement and selfreflexivity" (p. 686). Together, these form a way of interrupting, disrupting, and transforming "pure" presence into a disturbing, fluid, partial, and

problematic presence—a poststructural and decidedly postmodern form of discourse theory, hence textual revelation.

Validity as an Ethical Relationship

As Lather (1993) points out, poststructural forms for validities "bring ethics and epistemology together" (p. 686); indeed, as Parker Palmer (1987) also notes, "every way of knowing contains its own moral trajectory" (p. 24). Peshkin reflects on Noddings's (1984) observation that "the search for justification often carries us farther and farther from the heart of morality" (p. 105; quoted in Peshkin, 1993, p. 24). The way in which we know is most assuredly tied up with both what we know and our relationships with our research participants. Accordingly, one of us worked on trying to understand the ways in which the ethical intersects both the interpersonal and the epistemological (as a form of authentic or valid knowing; Lincoln, 1995). The result was the first set of understandings about emerging criteria for quality that were also rooted in the epistemology/ethics nexus. Seven new standards were derived from that search: positionality, or standpoint, judgments; specific discourse communities and research sites as arbiters of quality; voice, or the extent to which a text has the quality of polyvocality; critical subjectivity (or what might be termed intense self-reflexivity); reciprocity, or the extent to which the research relationship becomes reciprocal rather than hierarchical; sacredness, or the profound regard for how science can (and does) contribute to human flourishing; and sharing the perquisites of privilege that accrue to our positions as academics with university positions. Each of these standards was extracted from a body of research, often from disciplines as disparate as management, philosophy, and women's studies (Lincoln, 1995).

Voice, Reflexivity, and Postmodern Textual Representation

Texts have to do a lot more work these days than they used to. Even as they are charged by poststructuralists and postmodernists to reflect upon their representational practices, representational practices themselves become more problematic. Three of the most engaging, but painful, issues are the problem of voice, the status of reflexivity, and the problematics of postmodern/poststructural textual representation, especially as those problematics are displayed in the shift toward narrative and literary forms that directly and openly deal with human emotion.

Voice

Voice is a multilayered problem, simply because it has come to mean many things to different researchers. In former eras, the only appropriate "voice" was the "voice from nowhere"—the "pure presence" of representation, as Lather terms. it. As researchers became more conscious of the abstracted realities their texts created, they became simultaneously more conscious of having readers "hear" their informants—permitting readers to hear the exact words (and, occasionally, the paralinguistic cues, the lapses, pauses, stops, starts, reformulations) of the informants. Today voice can mean, especially in more participatory forms of research, not only having a real researcher—and a researcher's voice—in the text, but also letting research participants speak for themselves, either in text form or through plays, forums, "town meetings," or other oral and performance-oriented media or communication forms designed by research participants themselves. Performance texts, in particular, give an emotional immediacy to the voices of researchers and research participants far beyond their own sites and locales (see McCall, 2000). Rosanna Hertz (1997) describes voice as

a struggle to figure out how to present the author's self while simultaneously writing the respondents' accounts and representing their selves. Voice has multiple dimensions: First, there is the voice of the author. Second, there is the presentation of the voices of one's respondents within the text. A third dimension appears when the self is the subject of the inquiry. . . . Voice is how authors express themselves within an ethnography (pp. xi-xii)

But knowing how to express ourselves goes far beyond the commonsense understanding of "expressing ourselves." Generations of ethnographers trained in the "cooled-out, stripped-down rhetoric" of positivist inquiry (Firestone, 1987) find it difficult, if not nearly impossible, to "locate" themselves deliberately and squarely within their texts (even though, as Geertz [1988] has demonstrated finally and without doubt, the authorial voice is rarely genuinely absent, or even hidden).3 Specific textual experimentation can help; that is, composing ethnographic work into various literary forms—the poetry and plays of Laurel Richardson are good examples—can help a researcher to overcome the tendency to write in the distanced and abstracted voice of the disembodied "I." But such writing exercises are hard work. This is also work that is embedded in the practices of reflexivity and narrativity, without which achieving a voice of (partial) truth is impossible.

Reflexivity

Reflexivity is the process of reflecting critically on the self as researcher, the "human as instrument" (Guba & Lincoln, 1981). It is, we would assert, the critical subjectivity discussed early on in Reason and Rowan's edited volume Human Inquiry (1981). It is a conscious experiencing of the self as both inquirer and respondent, as teacher and learner, as the one coming to know the self within the processes of research itself.

Reflexivity forces us to come to terms not only with our choice of research problem and with those with whom we engage in the research process, but with our selves and with the multiple identities that represent the fluid self in the research setting (Alcoff & Potter, 1993). Shulamit Reinharz (1997), for example, argues that we not only "bring the self to the field . . . [we also] create the self in the field" (p. 3). She suggests that although we all have many selves we bring with us, those selves fall into three categories: researchbased selves, brought selves (the selves that historically, socially, and personally create our standpoints), and situationally created selves

(p. 5). Each of those selves comes into play in the research setting and consequently has a distinctive voice. Reflexivity—as well as the poststructural and postmodern sensibilities concerning quality in qualitative research—demands that we interrogate each of our selves regarding the ways in which research efforts are shaped and staged around the binaries, contradictions, and paradoxes that form our own lives. We must question our selves, too, regarding how those binaries and paradoxes shape not only the identities called forth in the field and later in the discovery processes of writing, but also our interactions with respondents, in who we become to them in the process of becoming to ourselves. Someone once characterized qualitative research as the twin processes of "writing up" (field notes) and "writing down" (the narrative). But Clandinin and Connelly (1994) have made clear that this bitextual reading of the processes of qualitative research is far too simplistic. In fact, many texts are created in the process of engaging in fieldwork. As Richardson (1994, 1997, 2000; see also Richardson & St. Pierre, Chapter 38, this volume) makes clear, writing is not merely the transcribing of some reality. Rather, writing-of all the texts, notes, presentations, and possibilities-is also a process of discovery: discovery of the subject (and sometimes of the problem itself) and discovery of the self.

There is good news and bad news with the most contemporary of formulations. The good news is that the multiple selves—ourselves and our respondents-of postmodern inquiries may give rise to more dynamic, problematic, open-ended, and complex forms of writing and representation. The bad news is that the multiple selves we create and encounter give rise to more dynamic, problematic, open-ended, and complex forms of writing and representation.

Postmodern Textual Representations

There are two dangers inherent in the conventional texts of scientific method: that they may lead us to believe the world is rather simpler than it is, and that they may reinscribe enduring forms of historical oppression. Put another way, we are confronted with a crisis of authority (which tells us the world is "this way" when perhaps it is some other way, or many other ways) and a crisis of representation (which serves to silence those whose lives we appropriate for our social sciences, and which may also serve subtly to re-create this world, rather than some other, perhaps more complex, but just one). Catherine Stimpson (1988) has observed:

Like every great word, "representation/s" is a stew. A scrambled menu, it serves up several meanings at once. For a representation can be an imagevisual, verbal, or aural.... A representation can also be a narrative, a sequence of images and ideas.... Or, a representation can be the product of ideology, that vast scheme for showing forth the world and justifying its dealings. (p. 223)

One way to confront the dangerous illusions (and their underlying ideologies) that texts may foster is through the creation of new texts that break boundaries; that move from the center to the margins to comment on and decenter the center; that forgo closed, bounded worlds for those more open-ended and less conveniently encompassed; that transgress the boundaries of conventional social science; and that seek to create a social science about human life rather than on subjects.

Experiments with how to do this have produced "messy texts" (Marcus & Fischer, 1986). Messy texts are not typographic nightmares (although they may be typographically nonlinear); rather, they are texts that seek to break the binary between science and literature, to portray the contradiction and truth of human experience, to break the rules in the service of showing, even partially, how real human beings cope with both the eternal verities of human existence and the daily irritations and tragedies of living that existence. Postmodern representations search out and experiment with narratives that expand the range of understanding, voice, and storied variations in human experience. As much as they are social scientists, inquirers also become storytellers, poets, and playwrights, experimenting with

personal narratives, first-person accounts, reflexive interrogations, and deconstruction of the forms of tyranny embedded in representational practices (see Richardson, 2000; Tierney & Lincoln, 1997).

Representation may be arguably the most open-ended of the controversies surrounding phenomenological research today, for no other reasons than that the ideas of what constitutes legitimate inquiry are expanding and, at the same time, the forms of narrative, dramatic, and rhetorical structure are far from being either explored or exploited fully. Because, too, each inquiry, each inquirer, brings a unique perspective to our understanding, the possibilities for variation and exploration are limited only by the number of those engaged in inquiry and the realms of social and intrapersonal life that become interesting to researchers. The only thing that can be said for certain about postmodern representational practices is that they will proliferate as forms and they will seek, and demand much of, audiences, many of whom may be outside the scholarly and academic world. In fact, some forms of inquiry may never show up in the academic world, because their purpose will be use in the immediate context, for the consumption, reflection, and use of indigenous audiences. Those that are produced for scholarly audiences will, however, continue to be untidy, experimental, and driven by the need to communicate social worlds that have remained private and "nonscientific" until now.

A GLIMPSE OF THE FUTURE

The issues raised in this chapter are by no means the only ones under discussion for the near and far future. But they are some of the critical ones, and discussion, dialogue, and even controversies are bound to continue as practitioners of the various new and emergent paradigms continue either to look for common ground or to find ways in which to distinguish their forms of inquiry from others.

Some time ago, we expressed our hope that practitioners of both positivist and new-paradigm forms of inquiry might find some way of resolving

their differences, such that all social scientists could work within a common discourse-and perhaps even several traditions-once again. In retrospect, such a resolution appears highly unlikely and would probably even be less than useful. This is not, however, because neither positivists nor phenomenologists will budge an inch (although that, too, is unlikely). Rather, it is because, in the postmodern moment, and in the wake of poststructuralism, the assumption that there is no single "truth"—that all truths are but partial truths; that the slippage between signifier and signified in linguistic and textual terms creates re-presentations that are only and always shadows of the actual people, events, and places; that identities are fluid rather than fixed—leads us ineluctably toward the insight that there will be no single "conventional" paradigm to which all social scientists might ascribe in some common terms and with mutual understanding. Rather, we stand at the threshold of a history marked by multivocality, contested meanings, paradigmatic controversies, and new textual forms. At some distance down this conjectural path, when its history is written, we will find that this has been the era of emancipation: emancipation from what Hannah Arendt calls "the coerciveness of Truth," emancipation from hearing only the voices of Western Europe, emancipation from generations of silence, and emancipation from seeing the world in one

We may also be entering an age of greater spirituality within research efforts. The emphasis on inquiry that reflects ecological values, on inquiry that respects communal forms of living that are not Western, on inquiry involving intense reflexivity regarding how our inquiries are shaped by our own historical and gendered locations, and on inquiry into "human flourishing," as Heron and Reason (1997) call it, may yet reintegrate the sacred with the secular in ways that promote freedom and self-determination. Egon Brunswik, the organizational theorist, wrote of "tied" and "untied" variables—variables that are linked, or clearly not linked, with other variables-when studying human forms of organization. We may be in a period of exploring the ways in which our

inquiries are both tied and untied, as a means of finding where our interests cross and where we can both be and promote others' being, as whole human beings.

■ Notes

- 1. There are several versions of critical theory, including classical critical theory, which is most closely related to neo-Marxist theory; postpositivist formulations, which divorce themselves from Marxist theory but are positivist in their insistence on conventional rigor criteria; and postmodernist, poststructuralist, or constructivist-oriented varieties. See, for instance, Fay (1987), Carr and Kemmis (1986), and Lather (1991). See also Kemmis and McTaggart (2000) and Kincheloe and McLaren (2000).
- 2. For a clearer understanding of how methods came to stand in for paradigms, or how our initial (and, we thought, quite clear) positions came to be misconstrued, see Lancy (1993) or, even more currently, Weiss (1998, esp. p. 268).
- 3. For example, compare this chapter with, say, the work of Richardson (2000) and Ellis and Bochner (2000), where the authorial voices are clear, personal, vocal, and interior, interacting subjectivities. Although some colleagues have surprised us by correctly identifying which chapters each of us has written in given books, nevertheless, the style of this chapter more closely approximates the more distanced forms of "realist" writing than it does the intimate, personal "feeling tone" (to borrow a phrase from Studs Terkel) of other chapters. Voices also arise as a function of the material being covered. The material we chose as most important for this chapter seemed to demand a less personal tone, probably because there appears to be much more "contention" than calm dialogue concerning these issues. The "cool" tone likely stems from our psychological response to trying to create a quieter space for discussion around controversial issues. What can we say?

REFERENCES

- Addelson, K. P. (1993). Knowers/doers and their moral problems. In L. Alcoff & E. Potter (Eds.), *Feminist epistemologies* (pp. 265–294). New York: Routledge.
- Alcoff, L., & Potter, E. (Eds.). (1993). Feminist epistemologies. New York: Routledge.

- Alpern, S., Antler, J., Perry, E. I., & Scobie, I. W. (Eds.). (1992). The challenge of feminist biography: Writing the lives of modern American women. Urbana: University of Illinois Press.
- Babbitt, S. (1993). Feminism and objective interests: The role of transformation experiences in rational deliberation. In L. Alcoff & E. Potter (Eds.), *Feminist epistemologies* (pp. 245–264). New York: Routledge.
- Bernstein, R. J. (1983). Beyond objectivism and relativism: Science, hermeneutics, and praxis. Oxford: Blackwell.
- Best, S., & Kellner, D. (1997). The postmodern turn. New York: Guilford.
- Bloland, H. (1989). Higher education and high anxiety: Objectivism, relativism, and irony. *Journal of Higher Education*, 60, 519–543.
- Bloland, H. (1995). Postmodernism and higher education. *Journal of Higher Education*, 66, 521–559.
- Bradley, J., & Schaefer, K. (1998). The uses and misuses of data and models. Thousand Oaks, CA: Sage.
- Carr, W. L., & Kemmis, S. (1986). Becoming critical: Education, knowledge and action research. London: Falmer.
- Carspecken, P. F. (1996). Critical ethnography in educational research: A theoretical and practical guide. New York: Routledge.
- Christians, C. G. (2000). Ethics and politics in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 133–155). Thousand Oaks, CA: Sage.
- Clandinin, D. J., & Connelly, F. M. (1994). Personal experience methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 413–427). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (1994). Handbook of qualitative research. Thousand Oaks, CA: Sage.
- Ellis, C., & Bochner, A. P. (Eds.). (1996). Composing ethnography: Alternative forms of qualitative writing. Walnut Creek, CA: AltaMira.
- Ellis, C., & Bochner, A. P. (2000). Autoethnography, personal narrative, reflexivity: Researcher as subject. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 733–768). Thousand Oaks, CA: Sage.
- Enerstvedt, R. (1989). The problem of validity in social science. In S. Kvale (Ed.), *Issues of validity in qualitative research* (pp. 135–173). Lund, Sweden: Studentlitteratur.
- Fay, B. (1987). *Critical social science*. Ithaca, NY: Cornell University Press.

- Fine, M., Weis, I., Weseen, S., & Wong, L. (2000). For whom? Qualitative research, representations, and social responsibilities. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 107–131). Thousand Oaks, CA: Sage.
- Firestone, W. (1987). Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher*, 16(7), 16–21.
- Foucault, M. (1971). The order of things: An archaeology of the human sciences. New York: Pantheon.
- Gamson, J. (2000). Sexualities, queer theory, and qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 347–365). Thousand Oaks, CA: Sage.
- Geertz, C. (1988). Works and lives: The anthropologist as author. Cambridge: Polity.
- Geertz, C. (1993). Local knowledge: Further essays in interpretive anthropology. London: Fontana.
- Greenwood, D. J., & Levin, M. (2000). Reconstructing the relationships between universities and society through action research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 85–106). Thousand Oaks, CA: Sage.
- Guba, E. G., & Lincoln, Y. S. (1981). Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches. San Francisco: Jossey-Bass.
- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and methodological bases for naturalistic inquiry. Educational Communications and Technology Journal, 31, 233–252.
- Guba, E. G., & Lincoln, Y. S. (1989). Fourth generation evaluation. Newbury Park, CA: Sage.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Harding, S. (1993). Rethinking standpoint epistemology: What is "strong objectivity"? In L. Alcoff & E. Potter (Eds.), *Feminist epistemologies* (pp. 49–82). New York: Routledge.
- Heron, J. (1996). Cooperative inquiry: Research into the human condition. London: Sage.
- Heron, J., & Reason, P. (1997). A participatory inquiry paradigm. *Qualitative Inquiry*, 3, 274–294.
- Hertz, R. (1997). Introduction: Reflexivity and voice. In R. Hertz (Ed.), *Reflexivity and voice*. Thousand Oaks, CA: Sage.

- Howe, K., & Eisenhart, M. (1990). Standards for qualitative (and quantitative) research: A prolegomenon. *Educational Researcher*, 19(4), 2–9.
- Hutcheon, L. (1989). *The politics of postmodernism*. New York: Routledge.
- Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 567–605). Thousand Oaks, CA: Sage.
- Kincheloe, J. L. (1991). Teachers as researchers: Qualitative inquiry as a path to empowerment. London: Falmer.
- Kincheloe, J. L., & McLaren, P. (2000). Rethinking critical theory and qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 279–313). Thousand Oaks, CA: Sage.
- Kondo, D. K. (1990). Crafting selves: Power, gender, and discourses of identity in a Japanese workplace. Chicago: University of Chicago Press.
- Kondo, D. K. (1997). About face: Performing race in fashion and theater. New York: Routledge.
- Kvale, S. (Ed.). (1989). Issues of validity in qualitative research. Lund, Sweden: Studentlitteratur.
- Kvale, S. (1994, April). Validation as communication and action. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Lancy, D.F. (1993). Qualitative research in education: An introduction to the major traditions. New York: Longman.
- Lather, P. (1986). Issues of validity in openly ideological research: Between a rock and a soft place. *Interchange*, 17(4), 63–84.
- Lather, P. (1991). Getting smart: Feminist research and pedagogy with/in the postmodern. New York: Routledge.
- Lather, P. (1993). Fertile obsession: Validity after poststructuralism. *Sociological Quarterly*, *34*, 673–693.
- Leitch, V. B. (1996). Postmodern: Local effects, global flows. Albany: State University of New York Press.
- Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, 1, 275–289.
- Lincoln, Y. S. (1997). What constitutes quality in interpretive research? In C. K. Kinzer, K. A. Hinchman, & D. J. Leu (Eds.), *Inquiries in literacy: Theory and practice* (pp. 54–68). Chicago: National Reading Conference.
- Lincoln, Y. S. (1998a). The ethics of teaching qualitative research. *Qualitative Inquiry*, 4, 305–317.
- Lincoln, Y. S. (1998b). From understanding to action: New imperatives, new criteria, new methods for

- interpretive researchers. Theory and Research in Social Education, 26(1), 12–29.
- Lincoln, Y. S., & Denzin, N. K. (1994). The fifth moment. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook* of qualitative research (pp. 575–586). Thousand Oaks, CA: Sage.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Marcus, G. E., & Fischer, M. M. J. (1986). Anthropology as cultural critique: An experimental moment in the human sciences. Chicago: University of Chicago Press.
- McCall, M. M. (2000). Performance ethnography: A brief history and some advice. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 421–433). Thousand Oaks, CA: Sage.
- Mertens, D. (1998). Research methods in education and psychology: Integrating diversity with quantitative and qualitative methods. Thousand Oaks, CA: Sage.
- Michael, M. C. (1996). Feminism and the postmodern impulse: Post-World War II fiction. Albany: State University of New York Press.
- Noddings, N. (1984). Caring: A feminine approach to ethics and moral education. Berkeley: University of California Press.
- Olesen, V.L. (2000). Feminisms and qualitative research at and into the millennium. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 215–255). Thousand Oaks, CA: Sage.
- Palmer, P. J. (1987, September-October). Community, conflict, and ways of knowing. *Change*, 19, 20–25.
- Peshkin, A. (1993). The goodness of qualitative research. *Educational Researcher*, 22(2), 24–30.
- Polkinghorne, D. E. (1989). Changing conversations about human science. In S. Kvale (Ed.), *Issues of validity in qualitative research* (pp. 13–46). Lund, Sweden: Studentlitteratur.
- Reason, P. (1993). Sacred experience and sacred science Journal of Management Inquiry, 2, 10-27.
- Reason, P., & Rowan, J. (Eds.). (1981). Human inquiry. London: John Wiley.
- Reinharz, S. (1997). Who am I? The need for a variety of selves in the field. In R. Hertz (Ed.), *Reflexivity and voice* (pp. 3–20). Thousand Oaks, CA: Sage.
- Richardson, L. (1994). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 516-529). Thousand Oaks, CA: Sage.

- Richardson, L. (1997). Fields of play: Constructing an academic life. New Brunswick, NJ: Rutgers University Press.
- Richardson, L. (2000). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 923–948). Thousand Oaks, CA: Sage.
- Rorty, R. (1979). *Philosophy and the mirror of nature*. Princeton, NJ: Princeton University Press.
- Ryan, K. E., Greene, J. C., Lincoln, Y. S., Mathison, S., & Mertens, D. (1998). Advantages and challenges of using inclusive evaluation approaches in evaluation practice. *American Journal of Evaluation*, 19, 101–122.
- Salner, M. (1989). Validity in human science research. In S. Kvale (Ed.), *Issues of validity in qualitative research* (pp. 47–72). Lund, Sweden: Studentlitteratur.
- Scheurich, J. J. (1994). Policy archaeology. *Journal of Educational Policy*, 9, 297–316.
- Scheurich, J. J. (1996). Validity. *International Journal of Qualitative Studies in Education*, 9, 49–60.
- Scheurich, J. J. (1997). Research method in the postmodern, London: Falmer.
- Schratz, M., & Walker, R. (1995). Research as social change: New opportunities for qualitative research.

 New York: Routledge.
- Schwandt, T. A. (1989). Recapturing moral discourse in evaluation. *Educational Researcher*, 18(8), 11–16, 34.
- Schwandt, T. A. (1996). Farewell to criteriology. *Qualitative Inquiry*, 2, 58-72.
- Schwandt, T.A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics,

- and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 189–213). Thousand Oaks, CA: Sage.
- Sechrest, L. (1993). Program evaluation: A pluralistic enterprise. San Francisco: Jossey-Bass.
- Smith, J. K. (1993). After the demise of empiricism: The problem of judging social and educational inquiry. Norwood, NJ: Ablex.
- Smith, J. K., & Deemer, D. K. (2000). The problem of criteria in the age of relativism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative* research (2nd ed., pp. 877-896). Thousand Oaks, CA: Sage.
- Stimpson, C. R. (1988). Nancy Reagan wears a hat: Feminism and its cultural consensus. *Critical Inquiry*, 14, 223–243.
- Tierney, W. G. (2000). Undaunted courage: Life history and the postmodern challenge. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 537–553). Thousand Oaks, CA: Sage.
- Tierney, W. G., & Lincoln, Y. S. (Eds.). (1997). Representation and the text: Re-framing the narrative voice. Albany: State University of New York Press.
- Trinh, T. M. (1991). When the moon waxes red: Representation, gender and cultural politics. New York: Routledge.
- Tschudi, F. (1989). Do qualitative and quantitative methods require different approaches to validity? In S. Kvale (Ed.), Issues of validity in qualitative research (pp. 109–134). Lund, Sweden: Studentlitteratur.
- Weiss, C. H. (1998). *Evaluation* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.