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Published in *Journal of Adult Development*, vol. 7, no. 4, pp. 255-267, 2000

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A Developmental Approach to Social Science: A Model for Analyzing Charles Alexander's Scientific Contributions

William R. Torbert¹

A seven-paradigm developmental model of social science is presented (behaviorism, gestalt sociology, empirical positivism, multi-method eclecticism, postmodern interpretivism, cooperative ecological inquiry, and developmental action inquiry). Charles Alexander's research is interpreted as bridging aspects of several paradigms, using third-person empirical positivist experiments to demonstrate the effects of a first-person research/practice called Transcendental Meditation. The author suggests the possibility of complementing current research on TM with explicit double- and triple-loop research on the second- and third-person practices within the TM movement.

KEY WORDS: Scientific paradigms; first-person research practice; third person research practice; double loop research; triple loop research.

It is an honor and a pleasure to be able to join with you in this journal issue, as at the 1998 conference on "Consciousness and the Future of Psychology," to celebrate the significant contribution that Charles (Skip) Alexander has made to the study of the possible evolution of human consciousness. Skip Alexander's energy, intelligence, and compassionate actions amidst a wide circle of co-research/practitioners have been at the center of a major contribution to psychology. In the view I will offer in this article, moreover, this contribution has an even more significant future.

From the perspective I take, the third-person social psychological field experiments that Alexander and his associates conducted on the effects of the first-person research/practice called Transcendental Meditation (TM) open us toward a wide new field of psychological research on consciousness. For the purpose of this article I will examine his work from a "Developmental Action Inquiry" perspective. Through this lens, I believe we can more fully understand the depth, the complexity, and the gaps in Skip's work. The Developmental Action Inquiry perspec-

tive asks what kind of science is generated when we go beyond separating research from action and begin to inquire in the midst of action (i.e., when we begin to engage explicitly in "research/practice"). Such research/practice can occur within ourselves (first-person research/practice), in our conversations and face-to-face groups at home, at work, and at play (second-person research/practice), in the wider institutions in which we participate (third-person research/practice), and in relation to the more-than-human space/time environment (Abram, 1996). In this view, consciousness potentially seeks/exercises/relaxes to encompass the dynamic, recursive interplay of enactment and feedback across the aesthetic continuum (Northrop, 1947) from the high-density/low-frequency inanimate, material world to low-density/high-frequency phenomena such as our attention (see Fig. 1).

From focusing primarily on a single layer of reality (such as what is going on outside us, or what is going on in our thoughts), first-person research/practice can potentially attune one's awareness to the interplay among four distinctive "territories" along the aesthetic continuum of experiencing (see first column, Fig. 1). Through such "four territory awareness" one can study to what degree one is in fact accomplishing one's intentions in real time. Our

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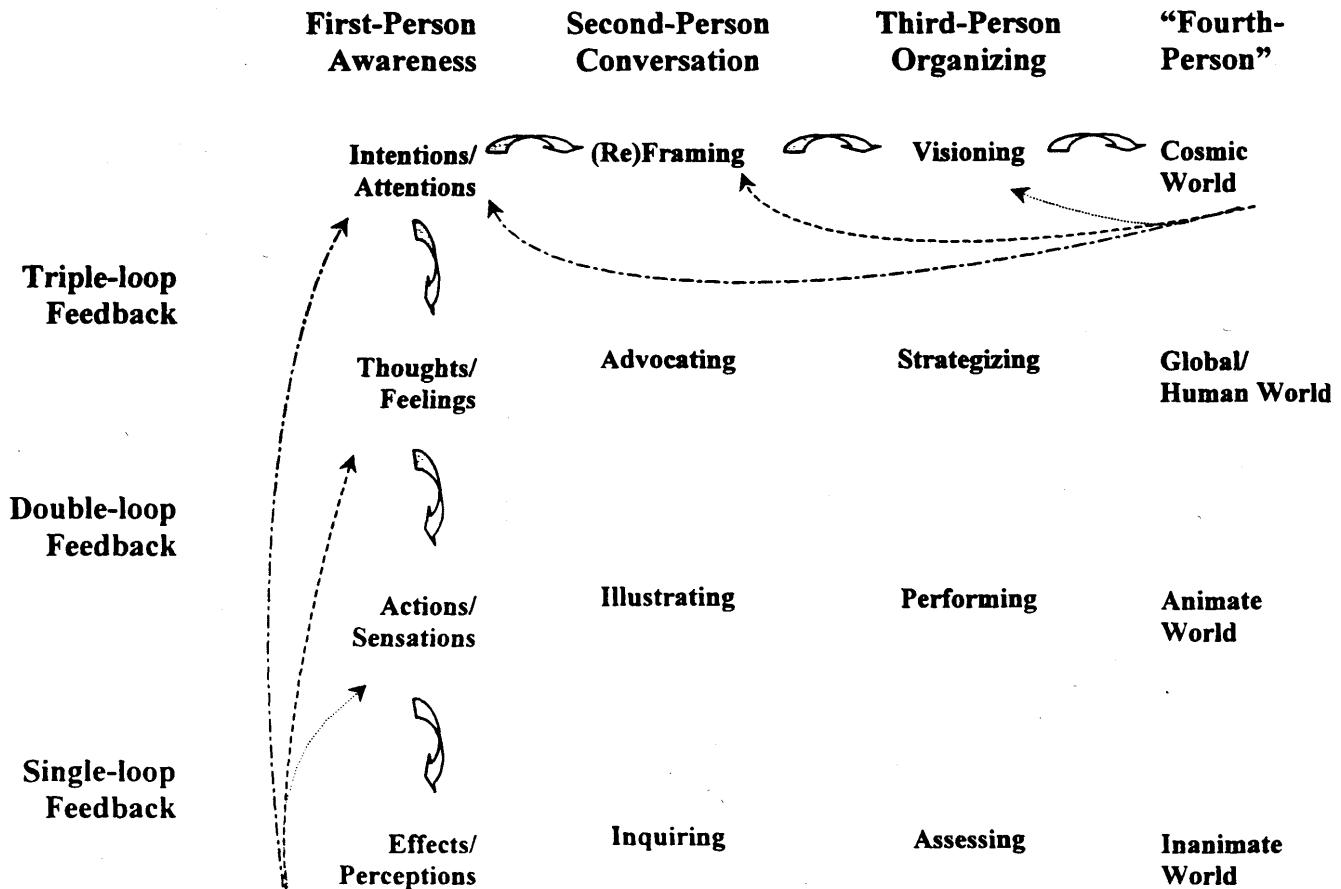


Fig. 1. The span of research/practice.

"consciousness sonar" receives pre-linguistic feedback impulses as our intent (Territory 1) undergoes "simultaneous translation" into language (Territory 2), embodied action (Territory 3), and outcome (Territory 4). This research amidst practice can register incongruities and test what kind of change realigns intent with outcome. Typically, we try single-loop changes first: if you don't respond when I speak to you, I may raise my voice, or repeat my advocacy but add an illustration (i.e. change my behavior, Territory 3 see second column, Fig. 1). If you still don't respond, I *feel* differently and may try a double-loop change (depending on my interpretation of my feeling): I change my strategy (Territory 2), maybe by apologizing and inquiring whether I've done something to offend you. If, still without speaking, you turn and look at me calmly, I am mystified and may use this benign pause as triple-loop feedback, becoming more present (Territory 1) to all four layers and all four horizons of my experiencing.

As I see it, the work of Alexander and his associates offers a highly articulated developmental theory of the possible evolution toward "four territory," "triple-loop" consciousness over a lifetime of first-person meditational research/practice based on a Hindu, Vedic tradition (Alexander & Langer, 1990). In addition, his work is at the center of an extremely impressive body of third-person, quantitative, empirical studies. These studies typically demonstrate that first-person research/practice of Transcendental Meditation among cohorts of many different kinds is positively associated with various measures of human flourishing, adult development, and increased social civility (e.g., Alexander, Rainforth & Gelderloos, 1991; Schmidt-Wilk, Alexander, & Swanson, 1996; Mason, Alexander, *et al.*, 1997).

Along with the contemporary studies of adult human development in this Vedic tradition, complementary work in adult development is occurring in developmental psychology (Kegan, 1994; Overton,

1997), in association with Buddhist disciplines (Wilber, 1995, 1998, 2000), and in association with transpersonal approaches (Miller & Cook-Greuter, 1994). My colleagues and I in organization studies have also been re-visioning and re-researching developmental theory for the past thirty-some years (Torbert, 1976, 1987; Fisher & Torbert, 1995). We study adult development from an *action inquiry* point of view—how development occurs (and, more commonly, does *not* occur) through our own and others' daily leadership practice in the teams and organizations in which we participate.

Timely, transforming action inquiry catalyzes personal, group, and organizational development from the inside out in real-time. Each new participant begins with first-person research/practice, which generates second-person research/practice within the groups in which one participates. These groups (whether they be r&d teams, sales teams, or senior management teams) in turn generate third-person organizational and research designs (which invite and support widening circles and deepening intensities of first-, second-, and third-person research/practice).

Our third-person, empirical research confirms the statistical validity and the practical and emancipatory significance of developmentally late-stage action-logics for encouraging adult development (Merron, Fisher, & Torbert, 1987; Torbert, 1991, 1994). For example, one statistical analysis that accounts for a robust 42% of the variance across ten organizations shows that late-stage "Leader" CEOs (see Table I), scored at Loevinger's Autonomous stage (Loevinger, 1998; Cook-Greuter, 1999), are more likely to facilitate successful organizational transformation than earlier-stage CEOs (Rooke & Torbert, 1998). In another study (Torbert & Fisher, 1992), a statistical analysis that accounts for a striking 92% of the variance shows that participating in late-stage organizing processes (Stage 6 and later in Table I) facilitates personal developmental transformation in managers.

In general, just as Alexander and his associates find that daily long-term first-person practice of awareness-deepening TM supports adult development, we find that interweaving first-person, second-person, and third-person awareness-deepening action inquiry experiments supports adult development (both sets of studies measure development with the Washington University Sentence Completion Test [Loevinger & Wessler, 1970; Hy & Loevinger, 1996; Westenberg, Blasi, & Cohn, 1998]).

TRANSFORMING SOCIAL SCIENCE

In my view, in addition to its theoretical and empirical contributions, the work of Alexander and his associates makes a major contribution to an ongoing transformation occurring within social science itself. In the remainder of the article, I will articulate: (a) where this transformation within social science may lead; and (b) how the work of Alexander and his associates contributes to the increasing credibility of this possible transformation.

In recent years, I have been advocating that social scientists adopt (and adapt) a developmental perspective, not only for studying our own and others' personal and organizational development, but also in order to examine ourselves as social scientists and the social science methodologies we use (Torbert, 1997, 1999; Sherman & Torbert, 2000). Table I offers a first glimpse of developmental analogies across persons, organizations, and approaches to social science, and the next section offers sketches of each social science paradigm (how it acts on and interprets the world), along with references to exemplary scholar/practitioners of that approach. Offering a preliminary acquaintance of this "paradigm of paradigms" will permit me to show the direction in which Alexander's work can point future social science.

In analogy with the four "territories of experience" for persons, conversations, and organizations shown in Fig. 1, the four comparable territories in social science can be named, from top to bottom:

1. Paradigm
2. Theory
3. Method
4. Data (or 'Capta')

The early-paradigm sciences (Behaviorism, Gestalt Sociologism, Empirical Positivism, and Multi-Method Eclecticism) are well designed to digest single-loop feedback. For example, in Behaviorism and Empirical Positivism a given study is methodologically designed to generate unambiguous data to confirm or disconfirm a given hypothesis or set of hypotheses. Inquiry about the world out-there is carried on by a professional observer/researcher who rigorously separates his or her inquiry from the observed action (or measured perceptions) in order to generate analytic, impersonal certainty about the past.

Ironically, *because* early-stage social sciences seek impersonal, universalizable generalizations, they *fail* to generalize to *any* action context and moment that any particular person faces. To learn

Table I. Analogies Among Personal, Organizational, and Social Scientific Developmental Paths (adapted from Torbert, 1987, 1991, 1997)

Personal development	Organizational development	Social scientific development
I. Birth-impulsive	I. Conception <i>(multiple, distinctive impulses gradually resolve into characteristic approach [e.g. many fantasies into a particular dream for a new organization])</i>	I. Anarchism (Feyerabend, 1975)
II. Opportunist <i>(dominant task: gain power [e.g., bike riding skill] to have desired effect on outside world)</i>	II. Investments	II. Behaviorism
III. Diplomat <i>(looking-glass self: understanding others' culture/expectations and molding own actions to succeed in their [e.g., market] terms)</i>	III. Incorporation	III. Gestalt Sociologism
IV. Expert <i>(intellectual mastery of outside-self systems such that actions = experiments that confirm or disconfirm hypotheses and lead toward valid certainty)</i>	IV. Experiments	IV. Empirical Positivism
V. Executive <i>(pragmatic triangulation among plan/theory, operation/implementation, and outcome/evaluation in incompletely pre-defined environment; reliably digests and responds to real-time single-loop feedback)</i>	V. Systematic Productivity	V. Multi-Method Eclecticism
VI. Leader <i>(self-conscious mission/philosophy, sense of timing/historicity, invitation to conversation among multiple voices and to reframing of boundaries; can occasionally digest and respond to double-loop feedback)</i>	VI. Collaborative Inquiry	VI. Postmodern Interpretivism
VII. Magician/Witch/Clown <i>(life/science = a mind/matter, love/death/transformation praxis among others, cultivating interplay and re-attunement among inquiry, friendship, work, and earth/material goods; seeks to digest triple-loop feedback)</i>	VII. Foundational Community of Inquiry	VII. Cooperative Ecological Inquiry
VIII. Ironist <i>(full acceptance of multi-paradigmatic nature of human consciousness/reality, including distances/alienations among paradigms, such that (1) few recognize paradigm differences as cause of wars, (2) few seek paradigm disconfirmation and transformation, and (3) few face dilemma/paradox of "empowering leadership": that it must work indirectly through ironic words, gestures, and event-structures that create both a moment-to-moment and an intergenerational field of choice)</i>	VIII. Liberating Disciplines	VIII. Developmental Action Inquiry

about any particular action context and moment in which we are participating, we must conduct a type of scientific inquiry into the situation, ourselves, and the interaction between the two *in real-time as we are acting*. And, in order for any of us to act effectively, with a potential for catalyzing, not just first-order change in our own or others' hypotheses about the situation, but also second-order transformations of interpretive/social structures (Argyris & Schon, 1974) and third-order transformations of consciousness (Bartunek & Moch, 1994; Nielsen, 1996; Torbert, 1994; Torbert & Fisher, 1992), we must, in the ongoing present, listen for and attune to, not just what is explicitly decipherable in generalizable, third-person terms, but also what are the implicit and possibly unique historical/developmental opportunities for the interacting systems (including, of course, oneself).

Through their rigorous efforts to separate research from action, the early-stage paradigms of social science forswear this task. The later-stage para-

digms of social science turn to these tasks (but these paradigms are much less fully defined and exemplified at this point in history because they are just emerging). Furthermore, whereas the early-stage paradigms of social science are mono-logical, regarding their particular logic as isomorphic with "the way the world is," the later-stage paradigms of social science recognize multiple possible and actual paradigms (personal, organizational, or scientific) in interplay. The early-stage social sciences separate third-person, impersonal research methods and voice from first-, and second-person methods and voices. In contrast, the later-stage social sciences seek to triangulate among first-, second-, and third-person voices, testing propositions explicitly in the midst of action with the very persons the propositions concern (Argyris, 1971, 1980, 1994; Torbert, 1981b, 1989, 2000b). The later-stage paradigms recognize that all research is implicitly a form of practice and all practice is implicitly a form of research as well. The question is how to craft increasingly valid, timely, and transfor-

mational first-, second-, and third-person research/practice.

BRIEF DESCRIPTIONS OF SEVEN SOCIAL SCIENTIFIC PARADIGMS

Here I offer brief descriptions of each of the seven paradigms, Behaviorism, Gestalt Sociologism, Empirical Positivism, Multi-Method Eclecticism, Postmodern Interpretivism, Cooperative Ecological Inquiry, and Developmental Action Inquiry. Each later paradigm is more inclusive than the previous one. Thus, Behaviorism treats only the outside world as real. Gestalt Sociologism treats two worlds as real, exploring how people's and cultures' "inside worlds" result in different behavioral patterns in the outside world. Empirical Positivism examines the relationship among three worlds, or three "territories of experience" (Fig. 1)—thought/theory, behavior/method, and outcomes/data in a deductive framework that excludes all variables other than those determined by the scientist at the outset. Multi-Method Eclecticism joins deduction with induction, permits the generation of new variables during the course of the study (so that one learns during the process of the study as well as from the results of the study), and examines the same three territories in the less controlled "field" in addition to the more controlled laboratory.

Postmodern Interpretivism attempts to reach back behind the externalization and formality of the early stage paradigms that study only the world outside oneself to include the implicit assumptions that govern the entire interpretive framework of the persons or institutions studied, including scientist (e.g., the scientist's own paradigm). However, Postmodern Interpretivism, as we know it in the academy, remains primarily a reflective, relativistic, textual exercise, not exercised in real-time practice.

Cooperative Ecological Inquiry explores how the multiple voices of persons with initially often different implicit assumptions can engage one another directly in I-Thou, second-person, mutual, potentially transforming inquiry and action in the real time of their lives, their everyday work, family, and spiritual relationships. Finally, Developmental Action Inquiry explores how larger, third-person collectivities can organize for action and inquiry in real time in such a way as to encourage first- and second-person research/practice as well.

Let us now review each paradigm in somewhat more detail.

BEHAVIORISM

Behaviorism emanates from an *assertive, physical* quest for *reliable, unilateral control* through "operant conditioning" of an *objectified and atomized external world*. B. F. Skinner (1953, 1971; Argyris, 1971) is the most generally recognized behaviorist, and he explicated the assumptions of the approach clearly. Only the outside world (including behavior seen from the outside) is regarded as real, and behaviorism makes the nominalist presumption of isolatable "stimuli" and "responses." Its preferred method is the controlled *experiment*. This method maximizes the scientist's unilateral control over variation and hence his or her ability to reduce undesirable behaviors. Its experimental subjects tend to be rats and pigeons (who are unlikely to interpretively reframe the experiment and frustrate the scientist's goal). This approach is particularly applicable and successful with populations who share its assumptions about the world (the Opportunist worldview, Table I) and who inhabit total institutions where unusual degrees of unilateral control can be exercised (e.g., prisoners, asylum inmates, young children in orphanages).

The special brilliance of the greatest lab experiments—such as the Asch experiments on conformity and the Milgram experiments on obedience to authority—is that they reveal the underlying lateral and hierarchical social pressures, structures, and presumptions through which this paradigm works in the human world. In so doing, such studies raise the question whether, how, and when the human world works otherwise.

GESTALT SOCIOLOGISM

Gestalt Sociologism in effect explores this question about how different cultural or psychological assumptions generate human worlds that work differently. Whether in the form of business cases or ethnographies, Gestalt Sociologism emanates from an *appreciative, emotional* quest to *understand the overall patterns of behavior* of given "Other" cultures as these are determined by beliefs, values, and myths. Its preferred method is *non-interventionist, ethnographic field observation* that generates ideographic case

studies of human groups. By contrast to the nominalist presumption of Behaviorism, Gestalt Sociology makes an essentialist presumption of integrative ideas, norms, and selves (Cooley, 1956; Mead, 1934).

The greatest such studies—such as Mead's *Coming of Age in Samoa* (1960), or Whyte's *Street Corner Society* (1981)—have now become as controversial as they deserve to be. As others' contest the authors' assumptions (Kirk & Miller, 1986), the controversy reveals the underlying mechanisms, categories, and presumptions through which our own encultured understanding works by contrast to the alien culture the original authors depicted. The debate thereby, implicitly if not explicitly, raises the question whether, when, and under what conditions our own assumptions are valid, and how to test whether they are valid.

EMPIRICAL POSITIVISM

Empirical Positivism emanates from a *critical* (but not hermeneutically self-critical), *intellectual* quest for *valid certainty* about *deductively logical, universally generalizable, empirical propositions* (Cook & Campbell, 1979; Hunt, 1994). Not necessarily identified with a particular method, this paradigm privileges randomized sample, hypothesis testing studies, along with computer modeling of intelligence. These approaches are valued because of the crisply clear quantitative, binary certainty about distinctions between confirmation and disconfirmation of hypotheses.

Nobel Prize winner Herbert Simon's theoretical and empirical demonstrations of the concept of "bounded rationality" (Simon, 1947, 1957, 1969, 1989, 1991; March & Simon, 1958; Hammond & Ritchie, 1993; Turkle, 1991) exemplify the best of such studies in demonstrating the limits of deductive rationality itself. Simon's work uses the Empirical Positivist paradigm, language, and precision to point toward the triangulating, "satisficing" logic of the next paradigm—Multi-Method Eclecticism. At the same time, the concept of "bounded rationality" that "satisfices" points to the plight of all the developmentally early paradigms, which do not encourage self-transformation. This bounded quality that does not initiate testing and transformation of its own boundaries empirically includes the psychology of well over 90% of all adults today (Cook-Greuter, 1999; Kegan, 1994; Torbert, 1991).

The special danger of Simon's work is that, by

its very claim to generalizability, it obscures the very possibility of liberating and self-transforming types of constitutive rationality that reach beyond inductive, deductive and instrumental reason. Thus, Simon's propositions about "bounded" rationality may obscure the overall act of "constitutive" rationality that Simon's work itself also is, as well as alternative constitutive rationalities (i.e., those of each of the other paradigms in Table I), and the possibility of transforming from one to another over the course of a lifetime.

MULTI-METHOD ECLECTICISM

As Simon's notion of "satisficing" suggests, Multi-Method Eclecticism emanates from a *practical* quest to *increase the percentage of the variance explained* by studies. This approach *triangulates* among quantitative and qualitative methods and permits the emergence of new variables during the course of study. It is currently fashionable and in flower in the managerial disciplines (e.g. Eisenhardt, 1989; Dyer & Wilkins, 1991; Bartunek *et al.*, 1993). Early in his career, the best-known management scholar today, Karl Weick, offered a fine example of this approach in collaboration with Campbell, Dunnington, and Lawler (Campbell *et al.*, 1970). They gathered a vast array of quantitative and qualitative methods together into a "multitrait-multimethod matrix" in their book *Managerial Behavior, Performance, and Effectiveness*. They recognized the difficulty of aggregating the world within a single perspective: "Disagreement between different observers should not necessarily be viewed as a mark of unreliability. . . , but should instead be viewed as a possibly valid indication that differing aspects of the manager's behavior are being accurately perceived and reported (p. 115)." Of course, still another possibility is that disagreement among observers may result from apparently noncomparable interpretive schemes of the observers, a possibility that opens toward the next paradigm, Postmodern Interpretivism.

POSTMODERN INTERPRETIVISM

Postmodern Interpretivism emanates from a *self-consciousness* encountering the dilemmas of accounting for the radical *subjectivity and fragmentariness of perspective* that embraces every languaged perception and conception. No matter how validly and elegantly the strange, object-ing reality at issue be clothed in the

statistical, methodological, and theoretical constructions of the earlier, pre-participative social sciences, the Postmodern Interpretivist (e.g. Denzin & Lincoln, 1994; Macey, 1993; Miller, 1993) wishes to deconstruct the implicit, presumed neutral background of the objects foregrounded in the study, as well as of the researcher and even of the author of the critique.

An excellent brief exemplar of this genre is Michelle Fine's (1994) inquiry, describing how she and others sought to evoke her niece's white/Jewish, innocent/victim identities in preparation for her appearance in court after being sexually assaulted by a department store security officer. "Jackie is now being asked to draw her self-as-good-middle-class-white-woman and to silence her Other-as-bad-Latina-unwed-mother (p71)." But, "no surprise. Jackie danced through the deposition shining with integrity, style, and passion. She told all as proud mother, lover, (adopted) daughter, niece, and survivor. With a smile and a tear, she resisted their, and she resisted our. Othering (p. 71)."

New types of validity are being constructed to guide this post-formal inquiry beyond objectivity into the relation of subject to object. Four newly constituted types of validity are called *reflexive validity*, *ironic validity*, *rhizomatic validity*, and *situated validity* (Lather, 1993). Reflexive validity concerns the degree to which a text attempts to challenge its own validity claims (e.g. note abstract, unillustrated voice of the foregoing description of reflexive validity, typical of Postmodern Interpretivist writing). Ironic validity is raised by inviting further interpretation by reader (e.g., as I explicitly ask of you now, since these paragraph-long evocations of paradigms can only suggest their roughest shape). Rhizomatic validity is raised when a text presents multiple voices defining the situation differently (e.g., prior to inclusion of these parenthetical illustrations, my colleague Dal Fisher commented on this paragraph: "Can't help on this one, since I don't understand even a fragment of it. I guess I can suggest fewer terms (many fewer) and more illustration."). And, finally, situated validity means that the text includes not just a disembodied authorial voice, but an embodied, emotional, reflective voice (e.g., "I love Dal's and my differences"; see also Michelle Fine's comments about her niece Jackie).

Postmodern Interpretivism strongly implies the need for a first-person research/practice. Karl Weick, whose own work has evolved in this direction, describes such first-person research/practice in *Sense-making* (1995) as a more or less self-sealing or self-transcending process in which all of us engage. To

date, however, this first-person research/practice in which we all engage is more often stated in third-person, abstract terminology than practiced in first-person accounts of ongoing research/practice. For example, Fine does not explore how she may act differently with Jackie in the future, nor describe efforts to do so. Integrating research with practice and integrating first-, second-, and third-person research/practice in a self-transcending process—guided by single-, double-, and triple-loop feedback among the four territories of experience (Fig. 1)—is a project for the two still later-stage paradigms and for the third millennium.

COOPERATIVE ECOLOGICAL INQUIRY

Cooperative Ecological Inquiry emanates from a *real-time commitment to creating "communities of inquiry"* (Torbert, 1976) that bridge subjectivities and differences of perspective and support transformation, as well as *day-to-day living* (Spretnak, 1991). For example, Gregory Bateson (1972), Margaret Mead (1960, 1972), and their daughter, Mary Catherine Bateson (1984, 1990) have all been academic social scientists independently, but have also been a "family of inquiry" in their everyday lives who have acted and inquired together and written about their transforming, trans-conventional relationships. A scene when the male, paternal Bateson questions in a friendly way whether he and his daughter should violate the incest taboo, and she responds in a friendly but conclusive way that she does not wish to, is a particularly powerful demonstration of the real-time practice of second-person inquiry, mutuality, and disconfirmation (Bateson, 1984).

This kind of cooperative inquiry (Cooperrider & Srivastva, 1987; Heron, 1996; Kaplan, 1996; Nielsen, 1996; Reason, 1994, 1995; Bravette, 1997; Bradbury, 1998) occurs in real time with partners also committed to integrating action and inquiry (to integrating first-, and second-person research/practice). In this perspective, one does not first learn the truth, then act upon it. Rather research itself and our lives as wholes are appreciated as actions. Thus, we act before we deeply care about truth, we act as we seek truth, we act as our sense of the truths we seek transforms. And the truths we seek come to include, not just reflective explanations of the past or strategies for the future, but how our present awareness and actions work, play, and transform as well (MacMur-ray, 1953; Reason, 1995; Torbert, 1981a). Social con-

structivism is an epistemological approach consistent with Cooperative Ecological Inquiry (Gergen, 1994).

The difficult and important questions come to be seen as how, in the midst of participating intersubjectively in specific situations, to listen, experiment, seek disconfirmation (Argyris, 1970; Argyris, Putnam & Smith, 1985; Torbert, 2000b), and encourage one's own, others', or organizations' transformation in a timely fashion (Torbert, 1991). How to create an off-line community of inquiry among scientific writers and journal editors becomes a secondary question, and how to create a real-time community of inquiry within one's family, at work, or within voluntary organizations to which one belongs becomes a primary question.

DEVELOPMENTAL ACTION INQUIRY

Finally, Developmental Action Inquiry emanates from a growing appreciation that different persons, organizations, and cultures are complex, chaotic interweavings of the six prior paradigms and this one (Pondy & Mitroff, 1979). No one of these paradigms will win the paradigm-war once and for all. Indeed, this very metaphor for the situation is illusory. Not martial arts and paradigm wars, but the arts of healing and inter-paradigmatic conversation and work become a beckoning and shareable (but not easily shareable) purpose. An interweaving of first-, second-, and third-person research/practice makes such inter-paradigmatic conversation and work sustainable. In third-person research/practice, Ironist leadership creates Liberating Disciplines (see Table I and Torbert, 1991) that introduce organizational members to the interplay of first-, second-, and third-person research/practice, such that they can gradually elect to practice first- and second-person research more and more continually.

From the integrative Developmental Action Inquiry perspective, each distinctive paradigmatic perspective is a positively powerful and beneficial analogue of the preeminent features of a situation at different moments and in recognized complementarity to the other approaches. By contrast, each paradigmatic perspective becomes demonic if it is asserted as the only legitimate kind of truth in all moments (Heron, 1998). "An active consciousness holds all ideas lightly" (Marshall, 1995). All types of validity testing described in earlier paradigms are accepted as conditionally appropriate, depending upon the degree to which one's current aims correspond with the

purpose of truth-seeking in that paradigm. Finally, however, in Developmental Action Inquiry generalization is recognized as occurring one person at a time, and "slowly" within that person (i.e., over a lifetime), as s/he practices awareness-expanding action inquiry at more and more moments.

Fisher & Torbert (1995) illustrates research in multiple, complementary modes, interweaving cases of "observant participants" exercising real time first- and second-person research/practice in their work (Cooperative Ecological Inquiry) with quantitative laboratory experiments using psychometric measures (Empirical Positivism), and multi-voiced, qualitative culture studies (Postmodern Interpretivism).

Behaviorism, Gestalt Sociologism, Empirical Positivism, and Multi-Method Eclecticism have been the predominant social scientific paradigms for most of the twentieth century. The enormous controversy throughout the arts and sciences during the past decade and more, surrounding "deconstruction" and "the language turn" re-presents the turmoil of transformation within the social sciences themselves toward what I call Postmodern Interpretivism and the other later-stage paradigms. At present, the two latest-stage paradigms, Cooperative Ecological Inquiry and Developmental Action Inquiry, are the least articulated, the least practiced, and the least known within the modern scientific canon.

THE CURRENT AND POTENTIAL ROLE OF ALEXANDER'S CONTRIBUTIONS

The foregoing general and preliminary distinctions between earlier- and later-stage social sciences permit me to sketch how I understand Skip Alexander's work as positioned to contribute to the transformation of social science. I offer this sketch, not at all as an authoritative conclusion, but as an opening to conversation. Looking at Alexander's work through the seven-paradigm lens I have outlined, I see him and his associates predominantly conducting third-person, quantitative Empirical Positivist research superimposed on persons who are conducting a type of first-person research/practice (TM) in their everyday lives. Such first-person research that goes beyond a merely academic, professional form to an activity conducted in the midst of one's life is the most mature form of Postmodern Interpretivism. One seeks approaches that, in Foucault's words toward the end of his life, "permit individuals to effect a certain number of operations on their own bodies, on their souls, on

their own thoughts, on their own conduct, and this in a manner so as to transform themselves (Miller, 1993, p. 322)."

At various points in his work, through interviews, Alexander also conveys qualitative tastes of the experience of this first-person research/practice through the first-person voices of the practitioners themselves. This qualitative method gives his research a Multi-Method Eclectic flavor as well.

Overall, I take the research of Alexander and his colleagues to be an artful, Trojan-horse type of research. It introduces a later-stage, first-person research/practice, as well as findings concerning differences between persons who engage in such exercise and those who do not, all dressed in the rhetorical and methodological costume of accepted earlier-stage research paradigms. Alexander's research confirms both the mundane benefits and the developmentally transforming effects of participating in Transcendental Meditation through familiar, accepted types of third-person research—Empirical Positivism and Multi-Method Eclecticism. In doing so, it brings increasing attention to an initially relatively unfamiliar form of first-person research/practice (a form of Postmodern Interpretivism available to any citizen).

The entire Empirical Positivist project in this case is dependent on the action-commitments of persons across millenia to certain Liberating Disciplines (in this case, Hindu spiritual exercises) as well as on contemporary communities of co-inquirers guiding the first-person research/practices (in this case Skip's colleagues at Maharishi University of Management). In other words, the backdrop to Alexander's research is a process that bears some resemblance to what I call Cooperative Ecological Inquiry and Developmental Action Inquiry. This backdrop is not hidden and is sometimes described at some length, but second- and third-person dynamics remain largely implicit and unexplored in Alexander's studies, as does the first-, and second-person research/practices of the authors of the studies. This is an aspect of the studies' artfulness. At the same time, it points to questions they do not address.

For example, given that Alexander's research appears to be largely conducted by a second-person community of research/practitioners committed to the same first-person research/practice that they study, to what degree and in what ways is that community engaged in single-, double, or triple-loop second-person research/practice with one another as they continue to co-create it? Do the community's

Sacred Cows *invite* inquiry, or are they regarded as *beyond* inquiry? Moreover, this community of researchers is nested, in turn, within a still larger, third-person, intergenerational Vedic philosophy and institution. So the question arises, to what degree and in what ways is the larger institution dedicated to the general enhancement and integration of transforming first-, second-, and third-person research/practices, and to the general encouragement of single-, double-, or triple-loop feedback? Or, conversely, to what degree is the institution dedicated—say—to propagating a particular technique for first-person research/practice based on authority and hierarchical structure that remain unquestioned?

DISCUSSION AND CONCLUSION

Early-stage academic faculties and scientific journals issue few calls to address such questions. But a growing body of researchers, including myself, are groping toward new versions of social science and are deeply interested in hearing them addressed. In any event, these questions indicate some of the types of study and reporting that increasingly qualify a body of work as Cooperative Ecological Inquiry or as Developmental Action Inquiry.

The Developmental Action Inquiry perspective highlights a mutual empowerment and mutual validation process among first-person, second-person, and third-person research/practices. In my vision, instead of primarily seeking intellectual understanding, prediction, and control like the earlier-stage social sciences, the later-stage social sciences seek *critical subjectivity*, *compassionate intersubjectivity*, and *constructive objectivity in action*. We gradually develop these through a lived postmodern self-inquiry, through lived communities of cooperative inquiry, and through lived leadership practice in institutions where others do not share our aims, strategic language, or research/practices. Our research/practices can increasingly teach us how to listen beyond the cacophony of voices we hear within and around us to those of our own (first-person) voices and others' (second-person) voices that flourish amidst continuing inquiry. Still more gradually, we may learn how to speak, write, and act in a third-person voice addressed to strangers that reliably invites them into their own version of this lifelong tri-partite conversation among first-, second-, and third-person voices. Doing so expresses a very different sort of objectivity from Empirical Positivism—not, a static, universaliz-

able, propositional objectivity, but an active, timely, transformationally constructive objectivity.

If the TM movement has yet to examine and publish data on its own ongoing second- and third-person research/practices as an institution, Skip Alexander's lifetime body of social scientific work nevertheless illustrates active, timely, transformationally constructive objectivity. In some cases, his experiments directly involved timely second-person political organizing on behalf of peace that challenged everyday (third-person) Western assumptions about causation.

Perhaps the most striking example of Alexander's timely, transformational, interventionist cooperative inquiries is his research on the "Maharishi Effect," the hypothesis that as few as 1% of a population practicing TM (or the square root of 1% practicing the more advanced TM-Sidhi method) can measurably improve the coherence of the local society. Organizing a small "army" of TM meditators in Lebanon in the midst of war there in the 1980s, Alexander and his colleagues hypothesized that their meditation could directly affect the collective field of consciousness toward greater harmony, in ways that would result in measurable reductions of deaths, as well as changes in related variables chosen by a panel of neutral observers. Astonishingly to most people, the results strongly supported the hypotheses and were published in the prestigious *Journal of Conflict Resolution* (Orme-Johnson, Alexander, et al., 1988). Nevertheless, there was great controversy surrounding the publication of the study. Strenuous efforts were made both to prevent publication, even after approval by several reviewers, and to delegitimize it after publication (Orme-Johnson, Alexander, & Davies, 1990). The fact that other social scientists had difficulty remaining objective in their responses suggests the paradigm-challenging nature of the study. Once again, Alexander had engaged in Trojan-horse type research, this time showing signs of the Cooperative Ecological Inquiry and Developmental Action Inquiry approaches, packaged within an Empirical Positivist external design.

In conclusion, I would like to highlight the deservedly controversial nature of the developmental theorizing that is central to both Alexander's and my efforts to appreciate timely, transformational human being and doing. John Heron (1998) has recently published a book entitled *Sacred Science: Person-centered Inquiry into the Spiritual and the Subtle* that is particularly germane in this context. With particularly critical reference to the developmental theoriz-

ing of Ken Wilber (1995, 1998), Heron offers a strong contrast between a peer-inquiry-and-action orientation and authoritarian-quietistic-developmental traditions (as Maharishi's movement might also be characterized). Moreover, Heron offers a strong injunction against developmental theory per se and in favor of each first-person researcher reconstructing his or her own map of the life-journey back and forth among the spiritual, the social, the personal, and the mundane. I offer Heron's two introductory paragraphs on this topic:

(A) sound map will not give an authoritative account of the predetermined return route to the divine. Rather it will modestly presuppose that what is going on in our cosmos is an undetermined, innovative process of divine becoming in which we are all immersed. The map will offer a range of possible options for a person's idiosyncratic path in a co-creative relation with this divine becoming. Some of these options, as states of being, will overlap with traditional mystical accounts; others will point to contemporary explorations. All of them will be provisional in status.

The map . . . will honour a variety of routes, and will commend each person to ground their development in their own inner light and life. And the map will, in principle and in every respect, be open to revision as a function of experiential and reflective inquiry. More radically, the ultimate rationale of the map is to empower people to make explicit their own maps grounded in their own experiential knowledge (Heron, 1998: 86).

I agree with Heron's view of the aim of theoretical maps, but my own experience suggests to me that it is possible to hold and to explore developmental theory itself in just the way Heron enjoins us to treat any map offered to us. Indeed, it should be easier to do so with developmental theory than with most maps, since each later worldview or paradigm represents a fundamentally different way of construing or "mapping" our participation in life, leading us to skepticism about the ultimate validity of our current map, as well as toward a trans-cognitive awareness of the aesthetic continuum within which "mapping" is but one, highly variable aspect of one's ongoing activity.

Given Heron's important warning about over-identifying with developmental theory as a cognitive construct, let me close by offering several powerful advantages of bringing developmental theory into relation with Thomas Kuhn's (1962) much debated notion of paradigms in the sociology of science. First, the paradigms elaborated in this article have signifi-

cant face validity as general approaches that have in fact been adopted in the social sciences during the 20th century (I offer further illustration in Torbert, 2000a). Second, this developmental understanding of scientific paradigms helps to explain a major anomaly in Kuhn's argument. As one critic has noted (Weinberg, 1998), although different paradigms are in many ways incommensurable, later paradigms (e.g., Einsteinian as compared to Newtonian physics) often encompass the findings of earlier paradigms and even treat the earlier theory as relatively valid within local limits. Moreover, as Weinberg argues and illustrates, the earlier paradigms often continue to fuel work alongside later paradigms. Both of these observations are entirely compatible with a developmental view of paradigm-change. Later-stage worldviews, organizational cultures, and scientific paradigms embrace and offer conditional validity to earlier action-logics. Moreover, persons operating from different developmental worldviews often work or live in close proximity to one another with regular, non-transforming interaction over long periods (Kegan, 1994; Overton, 1997).

Indeed, as I have suggested in my comments on Alexander's work, given scientific projects and whole scientific careers can display an interweaving of methods that emanate from different paradigmatic bases. Thus, the different paradigms are not entirely incommensurable (though they may appear so from early-stage perspectives). Social scientific work may gain power from the artful interweaving of methods emanating from different paradigms, as I believe Skip Alexander's lifetime scientific contribution does. Both the outcomes and the designs of his research/practice may encourage more of us to explore how first-, second-, and third-person research/practices can interweave to support adult and institutional transformation and development.

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